UIC - 2

UIC PROGRAM REVISION

COMPENDIUM

2016

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Tony Delfin
Acting Cabinet Secretary

Office of the Secretary

August 29, 2016

Ron Curry
Regional Administrator
U. S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Dallas, Texas 75202
Attn: Philip Dellinger, Ground Water/UIC Section

New Mexico UIC Program Revision

Dear Mr. Curry:

Enclosed herewith is the State of New Mexico's Application for a Revision of New Mexico's UIC Program to administer Class I, III, IV and V wells. The New Mexico program was approved by the U.S. EPA, effective August 10, 1983. 40 C.F.R. §147.1601. This program revision involves the authority for New Mexico to regulate a limited category of Class I hazardous waste wells.

The application includes the materials required for the revision of a State program pursuant to 40 C.F.R. 145.32 and includes:

a) Revisions to Program Description
b) Attorney General's Statement
c) Copies of rule changes with annotations and in final form
d) Administrative Record of rulemaking proceeding

The Oil Conservation Division of this Department will administer the new program for Class I hazardous waste wells. We look forward to continued association with the U.S. EPA in protecting New Mexico's groundwater from pollution.

Thank you for consideration of the application. For any questions or concerns regarding the application, please contact the Department General Counsel, Bill Brancard, at 505.476.3210 or bill.brancard@state.nm.us.

Sincerely,

Tony Delfin
Acting Secretary

REVISIONS TO PROGRAM DESCRIPTION

NEW MEXICO UIC PROGRAM: CLASS I, III, IV AND V WELLS

I. Summary

The New Mexico Water Quality Control Commission ("WQCC" or "Commission") has adopted amendments to the WQCC rules governing underground injection control to authorize the State of New Mexico to allow the approval of Class I hazardous waste injection wells but only for petroleum refineries disposing the waste generated at the refinery (the "Program Revision"). The Program Description, originally submitted for the approval of the New Mexico Class I, III, IV and V well program (40 CFR 147.1601), is hereby amended to incorporate this Program Revision.

The WQCC adopted amendments to existing rules and adopted new rule provisions, including federal rules adopted by reference. A list of the rule sections that were amended and added is provided in Appendix A. The full text of the codified rule with the revisions is provided in Appendix B. At a public meeting on July 14, 2015, the WQCC adopted the Program Revision after public notice and a public hearing (see "Public Participation"). The rule revisions were published in the New Mexico Register on August 14, 2015, and became effective on August 31, 2015. The rule revisions were codified in the New Mexico Administrative Code at 20.6.2.3000 through 20.6.2.5399 NMAC.

II. Authority

The U.S. Environmental Protection Agency ("EPA") approved the UIC program for Class I, III, IV and V injection wells in New Mexico effective August 10, 1983. The program is administered by the New Mexico Water Quality Control Commission, the Environmental Improvement Division (now known as the New Mexico Environment Department or "NMED"), and the Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department ("OCD"). 40 CFR 147.1601.

Under the New Mexico Water Quality Act, the WQCC is mandated to adopt regulations "to prevent or abate water pollution in the state". NMSA 1978, §74-6-4(E). The WQCC may adopt regulations to require persons to obtain from a constituent agency designated by the WQCC a permit for the discharge of any water contaminant. NMSA 1978, §74-6-5(A). The WQCC adopted the regulations that are incorporated by reference into the approved UIC program under the federal rules. 40 CFR 147.1601(a). The WQCC regulations, as recodified and amended, are found in the New Mexico Administrative Code ("NMAC") at 20.6.2 NMAC. (http://www.nmcpr.state.nm.us/nmac/)

Under the Water Quality Act, the WQCC must assign responsibility for the administration of its regulations to its "constituent agencies". NMSA 1978, §§74-6-4(F) and 74-6-2(K) (list of constituent agencies). In general, the WQCC has delegated the administration of its regulations to only two constituent agencies: to the OCD for oil and natural gas facilities and

to the NMED for all other facilities. For this Program Revision, the WQCC explicitly delegated to the OCD the authority to regulate certain Class I hazardous waste injection wells in New Mexico. 20.6.2.5300(C) NMAC (see Section V: Agency).

III. Program Revision

The WQCC has amended its rules governing underground injection control to authorize the State of New Mexico to allow the approval of Class I hazardous waste injection wells but only for petroleum refineries disposing the waste generated at the refinery. The requirements adopted by New Mexico are at least as stringent, and in some cases more stringent, than the corresponding federal requirements for Class I hazardous waste wells.

The specific rule changes, as filed with the New Mexico State Records Administrator, are provided in Appendix C. Appendix D provides a summary of the rule changes for each section. Appendix E is a cross reference table that links the federal regulations governing hazardous waste UIC wells to the state regulation that is either the equivalent regulation or incorporates the federal regulation by reference.

The rule changes adopted by the WQCC are based on the federal requirements for Class I hazardous waste injection wells found in 40 C.F.R. Parts 144 and 146. As shown in Appendix F, the WQCC rule changes incorporate the federal requirements in two ways and, as a result, are at least as stringent as—and in some cases more stringent than—the federal regulations. First, in many cases, entire Code of Federal Regulation provisions have been adopted by reference. Second, other CFR provisions were incorporated verbatim with minor conforming changes. These minor adjustments were made to reflect the fact that (1) the regulations would be administered by OCD rather than by EPA and (2) the regulations will become a part of the New Mexico Administrative Code.

Appendix F provides a comparison between the federal rules governing Class I hazardous waste injection wells with the new rules adopted by the WQCC for Class I hazardous waste injection wells. The changes and additions to the federal rules are indicated by redlining. This document is also annotated to explain the differences.

Finally, the Program Revision does not involve any significant changes to the existing New Mexico UIC regulations. The WQCC did amend several existing sections of its regulations to clarify that Class I hazardous waste injection wells are no longer prohibited entirely under New Mexico law and to recognize that new sections had been added to the Code. These changes are described in the Summary of Program Revision Rule Changes (Appendix D).

IV. Public participation

The process for the adoption of the Program Revision by the WQCC followed the public participation requirements of New Mexico law, including the Water Quality Act and the State Rules Act. In addition, while the federal regulations on program revisions do not specify any public participation requirements for a program revision (40 CFR 145.32), the process for this Program Revision also addressed the criteria for public notice for the initial approval of a State

UIC program. 40 CFR 145.31(a). Appendix G provides the documents for the administrative record before the WQCC.

The Program Revision process began with the submittal of a written Petition by Navajo Refining Company LLC ("Navajo") to the WQCC to amend the WQCC rules. NMSA 1978, §74-6-6(B). The WQCC, at a public meeting held within 90 days of the submittal of the Petition, determined to hold a public hearing on Navajo's petition. Id. The WQCC appointed a hearing officer for the public hearing.

The WQCC published a public notice of the proposed rulemaking and the public hearing in the New Mexico Register and in 15 newspapers across New Mexico including in areas that are substantially affected by the proposed rule changes. The notice was also mailed to persons on the WQCC mailing lists. NMSA 1978, §74-6-6(C); 40 CFR 145.31(a)(1).

The public notice identified the New Mexico UIC program and described the changes to the program being proposed by the rule changes. 40 CFR 145.31(a)(6). The notice identified where copies of the proposed rule changes could be reviewed, both in person and online, and how persons could obtain of the proposed rule changes and at what cost, and identified a person who could be contacted for further information. NMSA 1978, §74-6-6(C); 40 CFR 145.31(a)(2), (3) and (7).

The public notice stated that a public hearing on the proposed changes would be held on July 14, 2015, at the Artesia City Hall Chambers in Artesia, New Mexico, and that written comments on the proposed rule changes could also be submitted until July 14, 2015. NMSA 1978, §74-6-6(C); 40 CFR 145.31(a)(5). All the publications of the public notice occurred at least thirty days prior to the hearing date and the end of the public comment period. NMSA 1978, §74-6-6(C); 40 CFR 145.31(a)(4) and (5).

The public hearing was held on July 14, 2015, before both a WQCC hearing officer and the full Commission. Prior to the hearing, five technical witnesses from Navajo and one from OCD pre-filed written testimony. At the hearing, each of the technical witnesses summarized their testimony and was subject to questioning from the Commissioners and the public. In addition to the technical witnesses, several members of the public, including local elected officials, provided written or oral testimony in favor of the proposed rule changes. There was no testimony, written or oral, in opposition to the proposal.

After the hearing concluded, the full Commission reconvened their regular meeting and voted to approve the rule changes with some technical amendments. On July 31, 2015, the Commission entered its Statement of Reasons and Final Order which summarizes the proposed rule changes and responds to the comments and testimony provided. 40 CFR 145.31(b). A copy of the Statement of Reasons and Final Order was mailed to each person and entity that provided comments or testimony. On July 31, 2015, the rule changes were filed with the State Records and Archives Center as required by the State Rules Act and the Water Quality Act. NMSA 1978, §§ 14-4-5 and 74-6-6(E). The rule changes were published in the New Mexico Register on August 14, 2015, and became effective on August 31, 2015. NMSA 1978, §§ 14-4-5 (no rule

effective until after filing and publication in the New Mexico Register) and 74-6-6 (no rule under the Water Quality Act becomes effective until at least 30 days after filing).

Any rule adopted by the WQCC may be appealed to the New Mexico Court of Appeals within thirty days after the rule is filed under the State Rules Act. NMSA 1978, §74-6-7(A). No appeal of the rule changes was taken.

V. Agency

The Program Revision does not alter the approved New Mexico UIC program for Class I, III, IV and V wells which is administered by the WQCC, NMED and OCD. 40 CFR 147.1601. The regulations for the Program Revision were adopted by the WQCC pursuant to the New Mexico Water Quality Act, NMSA 1978, Section 74-6-1 et seq. Under the Water Quality Act, the WQCC has the duty to assign responsibility for administering its regulations to "constituent agencies". NMSA 1978, §74-6-4(F). For the Program Revision, the WQCC has assigned the administration of the Class I hazardous waste well program to the OCD. 20.6.2.5300 NMAC.

The OCD currently administers the UIC program for Class II wells, 40 CFR 147.1600, as well as Class I, III and V wells that are used at oil and gas facilities, including refineries. Currently, all approved Class I wells in New Mexico are administered by the OCD. Since the Program Revision is limited to Class I hazardous waste wells at petroleum refineries, it is appropriate that the OCD will administer the wells under the Program Revision.

The OCD currently administers over 4000 Class I, II, III and V wells in New Mexico. OCD has the procedures and personnel currently in place to review, permit, inspect and enforce compliance for UIC wells including the wells authorized under the Program Revision. OCD currently regulates water quality issues at petroleum refineries, including the permitting of Class I non-hazardous wells, and is therefore familiar with operations of petroleum refineries.

The Program Revision is limited to a small potential class of wells, and therefore will not require an expansion of OCD's UIC program. The Program Revision does include significant permit fees, both for applications and renewals and for annual administration. 20.6.2.5302 NMAC. These fees will provide the OCD with the resources to hire additional temporary employees or contract for specialized assistance as needed in the review of permits.

VI. Program Documents.

Statement of Legal Authority. With this amendment to the Program Description, New Mexico submits an Attorney General's Statement regarding the authority of New Mexico to carry out this Program Revision (see Appendix H).

Memorandum of Agreement. Because none of the procedures and requirements provided in the Memorandum of Agreement, dated April 13, 1983, among EPA Region VI, WQCC, NMED and OCD are modified by this Program Revision, no amendment to the Memorandum of Agreement is proposed.

VII. Timeline

Nov. 5, 2014: Navajo Refining Company, L.L.C. ("Navajo") files a Petition to Amend 20.6.2.5000 NMAC and Request for Hearing with the New Mexico Water Quality Control Commission ("WQCC") (WQCC Docket No. 14-15 (R))

Nov. 12, 2014: Navajo files a First Amended Petition to Amend 20.6.2.5000 NMAC and Request for Hearing with the WQCC.

Nov. 18, 2014: WQCC, at a public meeting, sets the hearing date of May 12, 2015, and delegates the appointment of a Hearing Officer to the Chairman.

Dec. 23, 2014: WQCC Chairman designates Morris Chavez as Hearing Officer for WQCC 14-15(R).

Dec. 29, 2014: Hearing Officer reschedules the hearing for July 14, 2015.

April 30, 2015: Navajo files a Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC and Request for Hearing ("Petition") with the WQCC.

May 14, 2015: Public notice of rulemaking hearing published in the New Mexico Register

May 15, 2015: Hearing Officer issues a Procedural Order.

May 15, 2015: Public notice published in Clovis News Journal

May 16, 2015: Public notice published in Hobbs News-Sun, the Gallup Independent, Roswell Daily Record, the Santa Fe New Mexican, the Silver City Daily Press and Independent, the Farmington Daily Times

May 17, 2015: Public notice published in The Albuquerque Journal, the Artesia Daily Press, and Carlsbad Current-Argus

May 19, 2015: Public notice published in The Cibola Beacon

May 20, 2015: Public notice published in the Truth or Consequences Herald

May 21, 2015: Public notice published in The Taos News

May 29, 2015: Amended public notice of rulemaking hearing published in the New Mexico Register

June 12, 2015: Public notice published in Las Cruces Bulletin and Las Cruces Sun-News

July 14, 2015: WQCC conducts a public hearing on the Petition in Artesia, New Mexico. At the conclusion of the hearing, the WQCC deliberates on the rulemaking proposal and adopts the rule changes.

July 31, 2015: WQCC files the rule changes with the New Mexico State Records Center and Archives.

Aug. 14, 2015: Publication of rule changes in New Mexico Register

Aug. 31, 2015: The rule changes become effective.

Appendices

A. List of Rule Sections that Were Amended and Added

B. 20.6.2 NMAC with Final Rule Changes

C. Rule Changes Filed with the New Mexico State Records Administrator on July 31, 2015

D. Summary of Program Revision Rule Changes

E. Cross Reference Table: Class I Hazardous Waste UIC Program Requirements: Federal Rules and New Mexico New Rule Sections

F. Annotated Redline Comparing New Sections of New Mexico Rules (20.6.2.5300 to 20.6.2.5399 NMAC) With Federal Rules

G. Water Quality Control Commission Administrative Record

H. Attorney General's Statement

APPENDIX - A

LIST OF RULE SECTIONS

Appendix A

NEW MEXICO UIC PROGRAM REVISION: LIST OF RULE SECTIONS THAT WERE AMENDED AND ADDED

NMAC Cite/Title		Amend	Add
20.6.2.3106 NMAC	Application for Discharge Permits and Renewals	X	
20.6.2.3107 NMAC	Monitoring, Reporting, and Other Requirements	X	
20.6.2.3109 NMAC	Secretary Approval, Disapproval, Modification or Termination of Discharge Permits, and Requirements for Abatement Plans	X	
20.6.2.5001 NMAC	Purpose	X	
20.6.2.5002 NMAC	Underground Injection Control Well Classifications	X	
20.6.2.5003 NMAC	Notification and General Operation Requirements for All Underground Injection Control Wells	X	
20.6.2.5004 NMAC	Prohibited Underground Injection Control Activities	X	
20.6.2.5101 NMAC	Discharge Permit and Other Requirements for Class I Wells and Class III Wells	X	
20.6.2.5102 NMAC	Pre-Construction Requirements for Class I Wells and Class III Wells	X	
20.6.2.5103 NMAC	Designated Aquifers for Class I Wells and Class III Wells	X	
20.6.2.5104 NMAC	Waiver of Requirement by Secretary for Class I Wells and Class III Wells	X	
20.6.2.5200 NMAC	Technical Criteria and Performance Standards for Class I Wells and Class III Wells	X	
20.6.2.5201 NMAC	Purpose	X	
20.6.2.5204 NMAC	Mechanical Integrity for Class I Wells and Class III Wells	X	
20.6.2.5209 NMAC	Plugging and Abandonment for Class I Wells and Class III Wells	X	
20.6.2.5210 NMAC	Information to be Considered by the Secretary for Class I Wells and Class III Wells	X	
20.6.2.5300 NMAC	Requirements for Class I Hazardous Waste Injection Wells		X
20.6.2.5301 NMAC	Definitions		X
20.6.2.5302 NMAC	Fees for Class I Hazardous Waste Injection Wells		X
20.6.2.5303 NMAC	Conversion of Existing Injection Wells		X
20.6.2.5310 NMAC	Requirements for Wells Injecting Hazardous Waste Required to be Accompanied by a Manifest		X
20.6.2.5320 NMAC	Adoption of 40 C.F.R. Part 144, Subpart F (Financial Responsibility: Class I Hazardous Waste Injection Wells)		X
20.6.2.5321 NMAC	Modifications, Exceptions, and Omissions		X
20.6.2.5341 NMAC	Conditions Applicable to All Permits		X
20.6.2.5342 NMAC	Establishing Permit Conditions		X

NMAC Cite/Title		Amend	Add
20.6.2.5343 NMAC	Schedule of Compliance		X
20.6.2.5344 NMAC	Requirements for Recording and Reporting of Monitoring Results		X
20.6.2.5351 NMAC	Applicability		X
20.6.2.5352 NMAC	Minimum Criteria for Siting		X
20.6.2.5353 NMAC	Area of Review		X
20.6.2.5354 NMAC	Corrective Action		X
20.6.2.5355 NMAC	Construction Requirements		X
20.6.2.5356 NMAC	Logging, Sampling, and Testing Prior to Well Operation		X
20.6.2.5357 NMAC	Operating Requirements		X
20.6.2.5358 NMAC	Testing and Monitoring Requirements		X
20.6.2.5359 NMAC	Reporting Requirements		X
20.6.2.5360 NMAC	Information to Be Evaluated by The Director		X
20.6.2.5361 NMAC	Closure		X
20.6.2.5362 NMAC	Post-Closure Care		X
20.6.2.5363 NMAC	Financial Responsibility for Post-Closure Care		X

APPENDIX - B

20.6.2 NMAC

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 2 GROUND AND SURFACE WATER PROTECTION

20.6.2.1 ISSUING AGENCY: Water Quality Control Commission
[12-1-95; 20.6.2.1 NMAC - Rn, 20 NMAC 6.2.I.1000, 1-15-01]

20.6.2.2 SCOPE: All persons subject to the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.
[12-1-95; 20.6.2.2 NMAC - Rn, 20 NMAC 6.2.I.1001, 1-15-01]

20.6.2.3 STATUTORY AUTHORITY: Standards and Regulations are adopted by the commission under the authority of the Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17.
[2-18-77, 9-20-82, 12-1-95; 20.6.2.3 NMAC - Rn, 20 NMAC 6.2.I.1002, 1-15-01]

20.6.2.4 DURATION: Permanent.
[12-1-95; 20.6.2.4 NMAC - Rn, 20 NMAC 6.2.I.1003, 1-15-01]

20.6.2.5 EFFECTIVE DATE: December 1, 1995 unless a later date is cited at the end of a section.
[12-1-95, 11-15-96; 20.6.2.5 NMAC - Rn, 20 NMAC 6.2.I.1004, 1-15-01; A, 1-15-01]

20.6.2.6 OBJECTIVE: The objective of this Part is to implement the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.
[12-1-95; 20.6.2.6 NMAC - Rn, 20 NMAC 6.2.I.1005, 1-15-01]

20.6.2.7 DEFINITIONS: Terms defined in the Water Quality Act, but not defined in this part, will have the meaning given in the act. As used in this part:

A. **"abandoned well"** means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be rehabilitated for its intended purpose or other purposes including monitoring and observation;

B. **"abate" or "abatement"** means the investigation, containment, removal or other mitigation of water pollution;

C. **"abatement plan"** means a description of any operational, monitoring, contingency and closure requirements and conditions for the prevention, investigation and abatement of water pollution, and includes Stage 1, Stage 2, or Stage 1 and 2 of the abatement plan, as approved by the secretary;

D. **"adjacent properties"** means properties that are contiguous to the discharge site or property that would be contiguous to the discharge site but for being separated by a public or private right of way, including roads and highways.

E. **"background"** means, for purposes of ground-water abatement plans only and for no other purposes in this part or any other regulations including but not limited to surface-water standards, the amount of ground-water contaminants naturally occurring from undisturbed geologic sources or water contaminants which the responsible person establishes are occurring from a source other than the responsible person's facility; this definition shall not prevent the secretary from requiring abatement of commingled plumes of pollution, shall not prevent responsible persons from seeking contribution or other legal or equitable relief from other persons, and shall not preclude the secretary from exercising enforcement authority under any applicable statute, regulation or common law;

F. **"casing"** means pipe or tubing of appropriate material, diameter and weight used to support the sides of a well hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent fluid from entering or leaving the well other than to or from the injection zone;

G. **"cementing"** means the operation whereby a cementing slurry is pumped into a drilled hole and/or forced behind the casing;

H. **"cesspool"** means a **"drywell"** that receives untreated domestic liquid waste containing human excreta, and which sometimes has an open bottom and/or perforated sides; a large capacity cesspool means a cesspool that receives liquid waste greater than that regulated by 20.7.3 NMAC;

I. **"collapse"** means the structural failure of overlying materials caused by removal of underlying materials;

J. **"commission"** means:

(1) the New Mexico water quality control commission or

(2) the department, when used in connection with any administrative and enforcement activity;

K. **"confining zone"** means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement from an injection zone;

L. **"conventional mining"** means the production of minerals from an open pit or underground excavation; underground excavations include mine shafts, workings and air vents, but does not include excavations primarily caused by in situ extraction activities;

M. **"daily composite sample"** means a sample collected over any twenty-four hour period at intervals not to exceed one hour and obtained by combining equal volumes of the effluent collected, or means a sample collected in accordance with federal permit conditions where a permit has been issued under the national pollutant discharge elimination system or for those facilities which include a waste stabilization pond in the treatment process where the retention time is greater than twenty (20) days, means a sample obtained by compositing equal volumes of at least two grab samples collected within a period of not more than twenty-four (24) hours;

N. **"department", "agency",** or **"division"** means the New Mexico environment department or a constituent agency designated by the commission;

O. **"discharge permit"** means a discharge plan approved by the department;

P. **"discharge permit modification"** means a change to the requirements of a discharge permit that result from a change in the location of the discharge, a significant increase in the quantity of the discharge, a significant change in the quality of the discharge; or as required by the secretary;

Q. **"discharge permit renewal"** means the re-issuance of a discharge permit for the same, previously permitted discharge;

R. **"discharge plan"** means a description of any operational, monitoring , contingency, and closure requirements and conditions for any discharge of effluent or leachate which may move directly or indirectly into ground water;

S. **"discharge site"** means the entire site where the discharge and associated activities will take place;

T. **"disposal"** means to abandon, deposit, inter or otherwise discard a fluid as a final action after its use has been achieved;

U. **"domestic liquid waste"** means human excreta and water-carried waste from typical residential plumbing fixtures and activities, including but not limited to waste from toilets, sinks, bath fixtures, clothes or dishwashing machines and floor drains;

V. **"domestic liquid waste treatment unit"** means a watertight unit designed, constructed and installed to stabilize only domestic liquid waste and to retain solids contained in such domestic liquid waste, including but not limited to aerobic treatment units and septic tanks;

W. **"drywell"** means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids;

X. **"experimental technology"** means a technology which has not been proven feasible under the conditions in which it is being tested;

Y. **"fluid"** means material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state;

Z. **"ground water"** means interstitial water which occurs in saturated earth material and which is capable of entering a well in sufficient amounts to be utilized as a water supply;

AA. **"hazard to public health"** exists when water which is used or is reasonably expected to be used in the future as a human drinking water supply exceeds at the time and place of such use, one or more of the numerical standards of Subsection A of 20.6.2.3103 NMAC, or the naturally occurring concentrations, whichever is higher, or if any toxic pollutant affecting human health is present in the water; in determining whether a discharge would cause a hazard to public health to exist, the secretary shall investigate and consider the purification and dilution reasonably expected to occur from the time and place of discharge to the time and place of withdrawal for use as human drinking water;

BB. **"improved sinkhole"** means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface;

CC. **"injection"** means the subsurface emplacement of fluids through a well;

DD. **"injection zone"** means a geological formation, group of formations, or part of a formation receiving fluids through a well;

EE. **"motor vehicle waste disposal well"** means a well which receives or has received fluids from vehicular repair or maintenance activities;

FF. **"non-aqueous phase liquid"** means an interstitial body of liquid oil, petroleum product, petrochemical, or organic solvent, including an emulsion containing such material;

GG. **"operational area"** means a geographic area defined in a project discharge permit where a group of wells or well fields in close proximity comprise a single class III well operation;

HH. **"owner of record"** means an owner of property according to the property records of the tax assessor in the county in which the discharge site is located at the time the application was deemed administratively complete;

II. **"packer"** means a device lowered into a well to produce a fluid-tight seal within the casing;

JJ. **"person"** means an individual or any other entity including partnerships, corporation, associations, responsible business or association agents or officers, the state or a political subdivision of the state or any agency, department or instrumentality of the United States and any of its officers, agents or employees;

KK. **"petitioner"** means a person seeking a variance from a regulation of the commission pursuant to Section 74-6-4(G) NMSA 1978;

LL. **"plugging"** means the act or process of stopping the flow of water, oil or gas into or out of a geological formation, group of formations or part of a formation through a borehole or well penetrating these geologic units;

MM. **"project discharge permit"** means a discharge permit which describes the operation of similar class III wells or well fields within one or more individual operational areas;

NN. **"refuse"** includes food, swill, carrion, slops and all substances from the preparation, cooking and consumption of food and from the handling, storage and sale of food products, the carcasses of animals, junked parts of automobiles and other machinery, paper, paper cartons, tree branches, yard trimmings, discarded furniture, cans, oil, ashes, bottles, and all unwholesome material;

OO. **"responsible person"** means a person who is required to submit an abatement plan or who submits an abatement plan pursuant to this part;

PP. **"secretary"** or **"director"** means the secretary of the New Mexico department of environment or the director of a constituent agency designated by the commission;

QQ. **"sewer system"** means pipelines, conduits, pumping stations, force mains, or other structures, devices, appurtenances or facilities used for collecting or conducting wastes to an ultimate point for treatment or disposal;

RR. **"sewerage system"** means a system for disposing of wastes, either by surface or underground methods, and includes sewer systems, treatment works, disposal wells and other systems;

SS. **"significant modification of Stage 2 of the abatement plan"** means a change in the abatement technology used excluding design and operational parameters, or re-location of 25 percent or more of the compliance sampling stations, for any single medium, as designated pursuant to Paragraph (4) of Subsection E of 20.6.2.4106 NMAC;

TT. **"subsurface fluid distribution system"** means an assemblage of perforated pipes, drain tiles, or other mechanisms intended to distribute fluids below the surface of the ground;

UU. **"subsurface water"** means ground water and water in the vadose zone that may become ground water or surface water in the reasonably foreseeable future or may be utilized by vegetation;

VV. **"TDS"** means total dissolved solids as determined by the "calculation method" (sum of constituents), by the "residue on evaporation method at 180 degrees" of the "*U.S. geological survey techniques of water resource investigations*," or by conductivity, as the secretary may determine;

WW. **"toxic pollutant"** means a water contaminant or combination of water contaminants in concentration (s) which, upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains, will unreasonably threaten to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring; in order to be considered a toxic pollutant a contaminant must be one or a combination of the potential toxic pollutants listed below and be at a concentration shown by scientific information currently available to the public to have potential for causing one or more of the effects listed above; any water contaminant or combination of the water contaminants in the list below creating a lifetime risk of more than one cancer per 100,000 exposed persons is a toxic pollutant:

- **(1)** acrolein
- **(2)** acrylonitrile
- **(3)** aldrin
- **(4)** benzene
- **(5)** benzidine
- **(6)** carbon tetrachloride
- **(7)** chlordane
- **(8)** chlorinated benzenes
  - **(a)** monochlorobenzene
  - **(b)** hexachlorobenzene
  - **(c)** pentachlorobenzene
- **(9)** 1,2,4,5-tetrachlorobenzene
- **(10)** chlorinated ethanes
  - **(a)** 1,2-dichloroethane
  - **(b)** hexachloroethane
  - **(c)** 1,1,2,2-tetrachloroethane

(d) 1,1,1-trichloroethane
(e) 1,1,2-trichloroethane

(11) chlorinated phenols
(a) 2,4-dichlorophenol
(b) 2,4,5-trichlorophenol
(c) 2,4,6-trichlorophenol

(12) chloroalkyl ethers
(a) bis (2-chloroethyl) ether
(b) bis (2-chloroisopropyl) ether
(c) bis (chloromethyl) ether

(13) chloroform
(14) DDT
(15) dichlorobenzene
(16) dichlorobenzidine
(17) 1,1-dichloroethylene
(18) dichloropropenes
(19) dieldrin
(20) diphenylhydrazine
(21) endosulfan
(22) endrin
(23) ethylbenzene
(24) halomethanes
(a) bromodichloromethane
(b) bromomethane
(c) chloromethane
(d) dichlorodifluoromethane
(e) dichloromethane
(f) tribromomethane
(g) trichlorofluoromethane

(25) heptachlor
(26) hexachlorobutadiene
(27) hexachlorocyclohexane (HCH)
(a) alpha-HCH
(b) beta-HCH
(c) gamma-HCH
(d) technical HCH

(28) hexachlorocyclopentadiene
(29) high explosives (HE)
(a) 2,4-dinitrotoluene (2,4,DNT)
(b) 2,6-dinitrotoluene (2,6,DNT)
(c) octrahydro-1,3,5,7-tetranitro-1,3,5,7 tetrazocine (HMX)
(d) hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
(e) 2,4,6-trinitrotoluene (TNT)

(30) isophorone
(31) methyl tertiary butyl ether
(32) nitrobenzene
(33) nitrophenols
(a) 2,4-dinitro-o-cresol
(b) dinitrophenols

(34) nitrosamines
(a) N-nitrosodiethylamine
(b) N-nitrosodimethylamine
(c) N-nitrosodibutylamine
(d) N-nitrosodiphenylamine
(e) N-nitrosopyrrolidine

(35) pentachlorophenol
(36) perchlorate
(37) phenol
(38) phthalate esters

(a) dibutyl phthalate
(b) di-2-ethylhexyl phthalate
(c) diethyl phthalate
(d) dimethyl phthalate

(39) polychlorinated biphenyls (PCB's)

(40) polynuclear aromatic hydrocarbons (PAH)
(a) anthracene
(b) 3,4-benzofluoranthene
(c) benzo (k) fluoranthene
(d) fluoranthene
(e) fluorene
(f) phenanthrene
(g) pyrene

(41) tetrachloroethylene

(42) toluene

(43) toxaphene

(44) trichloroethylene

(45) vinyl chloride

(46) xylenes
(a) o-xylene
(b) m-xylene
(c) p-xylene

(47) 1,1-dichloroethane

(48) ethylene dibromide (EDB)

(49) cis-1,2-dichloroethylene

(50) trans-1,2-dichloroethylene

(51) naphthalene

(52) 1-methylnaphthalene

(53) 2-methylnaphthalene

(54) benzo-a-pyrene

XX. **"vadose zone"** means earth material below the land surface and above ground water, or in between bodies of ground water;

YY. **"wastes"** means sewage, industrial wastes, or any other liquid, gaseous or solid substance which will pollute any waters of the state;

ZZ. **"water"** means all water including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water;

AAA. **"water contaminant"** means any substance that could alter if discharged or spilled the physical, chemical, biological or radiological qualities of water; "water contaminant" does not mean source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954;

BBB. **"watercourse"** means any river, creek, arroyo, canyon, draw, or wash, or any other channel having definite banks and beds with visible evidence of the occasional flow of water;

CCC. **"water pollution"** means introducing or permitting the introduction into water, either directly or indirectly, of one or more water contaminants in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or to unreasonably interfere with the public welfare or the use of property;

DDD. **"well"** means: (1) A bored, drilled, or driven shaft; (2) A dug hole whose depth is greater than the largest surface dimension; (3) An improved sinkhole; or (4) A subsurface fluid distribution system;

EEE. **"well stimulation"** means a process used to clean the well, enlarge channels, and increase pore space in the interval to be injected, thus making it possible for fluids to move more readily into the injection zone; well stimulation includes, but is not limited to, (1) surging, (2) jetting, (3) blasting, (4) acidizing, (5) hydraulic fracturing.
[1-4-68, 4-20-68, 11-27-70, 9-3-72, 4-11-74, 8-13-76, 2-18-77, 6-26-80, 7-2-81, 1-29-82, 9-20-82, 11-17-84, 3-3-86, 8-17-91, 8-19-93, 12-1-95; 20.6.2.7 NMAC - Rn, 20 NMAC 6.2.I.1101, 1-15-01; A, 1-15-01; A, 12-1-01; A, 9-15-02; A, 9-26-04; A, 7-16-06; A, 8-1-14]

20.6.2.8 **SEVERABILITY:** If any section, subsection, individual standard or application of these standards or regulations is held invalid, the remainder shall not be affected.
[2-18-77, 12-1-95; 20.6.2.8 NMAC - Rn, 20 NMAC 6.2.I.1007, 1-15-01]

20.6.2.9 DOCUMENTS: Documents referenced in the part may be viewed at the New Mexico environment department, ground water quality bureau, Harold Runnels building, 1190 St. Francis Drive, Santa Fe, New Mexico 87503. [12-1-95; 20.6.2.9 NMAC - Rn, 20 NMAC 6.2.I.1006, 1-15-01; A, 12-1-01]

20.6.2.10 - 20.6.2.1199: [RESERVED]
[12-1-95; 20.6.2.10 - 20.6.2.1199 NMAC - Rn, 20 NMAC 6.2.I.1008-1100, 1102-1199, 1-15-01]

20.6.2.1200 PROCEDURES:
[12-1-95; 20.6.2.1200 NMAC - Rn, 20 NMAC 6.2.I.1200, 1-15-01]

20.6.2.1201 NOTICE OF INTENT TO DISCHARGE:

A. Any person intending to make a new water contaminant discharge or to alter the character or location of an existing water contaminant discharge, unless the discharge is being made or will be made into a community sewer system or subject to the Liquid Waste Disposal Regulations adopted by the New Mexico environmental improvement board, shall file a notice with the ground water quality bureau of the department for discharges that may affect ground water, and/ or the surface water quality bureau of the department for discharges that may affect surface water. However, notice regarding discharges from facilities for the production, refinement, pipeline transmission of oil and gas or products thereof, the oil field service industry, oil field brine production wells, geothermal installations and carbon dioxide facilities shall be filed instead with the oil conservation division.

B. Any person intending to inject fluids into a well, including a subsurface distribution system, unless the injection is being made subject to the Liquid Waste Disposal Regulations adopted by the New Mexico environmental improvement board, shall file a notice with the ground water quality bureau of the department. However notice regarding injection to wells associated with oil and gas facilities as described in Subsection A of Section 20.6.2.1201 NMAC shall be filed instead with the oil conservation division.

C. Notices shall state:

(1) the name of the person making the discharge;

(2) the address of the person making the discharge;

(3) the location of the discharge;

(4) an estimate of the concentration of water contaminants in the discharge; and

(5) the quantity of the discharge.

D. Based on information provided in the notice of intent, the department will notify the person proposing the discharge as to which of the following apply:

(1) a discharge permit is required;

(2) a discharge permit is not required;

(3) the proposed injection well will be added to the department's underground injection well inventory;

(4) the proposed injection activity or injection well is prohibited pursuant to 20.6.2.5004 NMAC.

[1-4-68, 9-5-69, 9-3-72, 2-17-74, 2-20-81, 12-1-95; 20.6.2.1201 NMAC - Rn, 20 NMAC 6.2.I.1201, 1-15-01; A, 12-1-01]

20.6.2.1202 FILING OF PLANS AND SPECIFICATIONS--SEWERAGE SYSTEMS:

A. Any person proposing to construct a sewerage system or proposing to modify any sewerage system in a manner that will change substantially the quantity or quality of the discharge from the system shall file plans and specifications of the construction or modification with ground water quality bureau of the department for discharges that may affect ground water, and/or the surface water quality bureau of the department for discharges that may affect surface water. Modifications having a minor effect on the character of the discharge from sewerage systems shall be reported as of January 1 and June 30 of each year to the ground water quality bureau of the department for discharges that may affect ground water, or the surface water quality bureau of the department for discharges that may affect surface water.

B. Plans, specifications and reports required by this section, if related to facilities for the production, refinement and pipeline transmission of oil and gas, or products thereof, shall be filed instead with the oil conservation division.

C. Plans and specifications required to be filed under this section must be filed prior to the commencement of construction.

[1-4-68, 9-3-72, 2-20-81, 12-1-95; 20.6.2.1202 NMAC - Rn, 20 NMAC 6.2.I.1202, 1-15-01; A, 12-1-01]

20.6.2.1203 NOTIFICATION OF DISCHARGE-REMOVAL:

A. With respect to any discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or

unreasonably interfere with the public welfare or the use of property, the following notifications and corrective actions are required:

(1) As soon as possible after learning of such a discharge, but in no event more than twenty-four (24) hours thereafter, any person in charge of the facility shall orally notify the chief of the ground water quality bureau of the department, or his counterpart in any constituent agency delegated responsibility for enforcement of these rules as to any facility subject to such delegation. To the best of that person's knowledge, the following items of information shall be provided:

(a) the name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility;

(b) the name and address of the facility;

(c) the date, time, location, and duration of the discharge;

(d) the source and cause of discharge;

(e) a description of the discharge, including its chemical composition;

(f) the estimated volume of the discharge; and

(g) any actions taken to mitigate immediate damage from the discharge.

(2) When in doubt as to which agency to notify, the person in charge of the facility shall notify the chief of the ground water quality bureau of the department. If that department does not have authority pursuant to commission delegation, the department shall notify the appropriate constituent agency.

(3) Within one week after the discharger has learned of the discharge, the facility owner and/or operator shall send written notification to the same department official, verifying the prior oral notification as to each of the foregoing items and providing any appropriate additions or corrections to the information contained in the prior oral notification.

(4) The oral and written notification and reporting requirements contained in this Subsection A are not intended to be duplicative of discharge notification and reporting requirements promulgated by the oil conservation commission (OCC) or by the oil conservation division (OCD); therefore, any facility which is subject to OCC or OCD discharge notification and reporting requirements need not additionally comply with the notification and reporting requirements herein.

(5) As soon as possible after learning of such a discharge, the owner/operator of the facility shall take such corrective actions as are necessary or appropriate to contain and remove or mitigate the damage caused by the discharge.

(6) If it is possible to do so without unduly delaying needed corrective actions, the facility owner/operator shall endeavor to contact and consult with the chief of the ground water quality bureau of the department or appropriate counterpart in a delegated agency, in an effort to determine the department's views as to what further corrective actions may be necessary or appropriate to the discharge in question. In any event, no later than fifteen (15) days after the discharger learns of the discharge, the facility owner/operator shall send to said Bureau Chief a written report describing any corrective actions taken and/or to be taken relative to the discharge. Upon a written request and for good cause shown, the bureau chief may extend the time limit beyond fifteen (15) days.

(7) The bureau chief shall approve or disapprove in writing the foregoing corrective action report within thirty (30) days of its receipt by the department. In the event that the report is not satisfactory to the department, the bureau chief shall specify in writing to the facility owner/operator any shortcomings in the report or in the corrective actions already taken or proposed to be taken relative to the discharge, and shall give the facility owner/operator a reasonable and clearly specified time within which to submit a modified corrective action report. The bureau chief shall approve or disapprove in writing the modified corrective action report within fifteen (15) days of its receipt by the department.

(8) In the event that the modified corrective action report also is unsatisfactory to the department, the facility owner/operator has five (5) days from the notification by the bureau chief that it is unsatisfactory to appeal to the department secretary. The department secretary shall approve or disapprove the modified corrective action report within five (5) days of receipt of the appeal from the bureau chief's decision. In the absence of either corrective action consistent with the approved corrective action report or with the decision of the secretary concerning the shortcomings of the modified corrective action report, the department may take whatever enforcement or legal action it deems necessary or appropriate.

(9) If the secretary determines that the discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within one hundred and eighty (180) days after notice is required to be given pursuant to Paragraph (1) of Subsection A of Section 20.6.2.1203 NMAC, the secretary may notify the facility owner/operator that he is a responsible person and that an abatement plan may be required pursuant to Section 20.6.2.4104 and Subsection A of Section 20.6.2.4106 NMAC.

B. Exempt from the requirements of this section are continuous or periodic discharges which are made:

(1) in conformance with regulations of the commission and rules, regulations or orders of other state or federal agencies; or

(2) in violation of regulations of the commission, but pursuant to an assurance of discontinuance or schedule of compliance approved by the commission or one of its duly authorized constituent agencies.

C. As used in this section and in Sections 20.6.2.4100 through 20.6.2.4115 NMAC, but not in other sections of this part:

(1) "discharge" means spilling, leaking, pumping, pouring, emitting, emptying, or dumping into water or in a location and manner where there is a reasonable probability that the discharged substance will reach surface or subsurface water;

(2) "facility" means any structure, installation, operation, storage tank, transmission line, motor vehicle, rolling stock, or activity of any kind, whether stationary or mobile;

(3) "oil" means oil of any kind or in any form including petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes;

(4) "operator" means the person or persons responsible for the overall operations of a facility; and

(5) "owner' means the person or persons who own a facility, or part of a facility.

D. Notification of discharge received pursuant to this part or information obtained by the exploitation of such notification shall not be used against any such person in any criminal case, except for perjury or for giving a false statement.

E. Any person who has any information relating to any discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, is urged to notify the chief of the ground water quality bureau of the department. Upon such notification, the secretary may require an owner/operator or a responsible person to perform corrective actions pursuant to Paragraphs (5) and (9) of Subsection A of Section 20.6.2.1203 NMAC.

[2-17-74, 2-20-81, 12-24-87, 12-1-95; 20.6.2.1203 NMAC - Rn, 20 NMAC 6.2.I.1203, 1-15-01; A, 12-1-01]

20.6.2.1204 - 20.6.2.1209 [RESERVED]

[12-1-95; 20.6.2.1204 - 20.6.2.1209 NMAC - Rn, 20 NMAC 6.2.I.1204-1209, 1-15-01]

20.6.2.1210 VARIANCE PETITIONS:

A. Any person seeking a variance pursuant to Section 74-6-4 (G) NMSA 1978, shall do so by filing a written petition with the commission. The petitioner may submit with his petition any relevant documents or material which the petitioner believes would support his petition. Petitions shall:

(1) state the petitioner's name and address;

(2) state the date of the petition;

(3) describe the facility or activity for which the variance is sought;

(4) state the address or description of the property upon which the facility is located;

(5) describe the water body or watercourse affected by the discharge;

(6) identify the regulation of the commission from which the variance is sought;

(7) state in detail the extent to which the petitioner wishes to vary from the regulation;

(8) state why the petitioner believes that compliance with the regulation will impose an unreasonable burden upon his activity; and

(9) state the period of time for which the variance is desired.

B. The variance petition shall be reviewed in accordance with the adjudicatory procedures of 20 NMAC 1.3.

C. The commission may grant the requested variance, in whole or in part, may grant the variance subject to conditions, or may deny the variance. The commission shall not grant a variance for a period of time in excess of five years.

D. An order of the commission is final and bars the petitioner from petitioning for the same variance without special permission from the commission. The commission may consider, among other things, the development of new information and techniques to be sufficient justification for a second petition. If the petitioner, or his authorized representative, fails to appear at the public hearing on the variance petition, the commission shall proceed with the hearing on the basis of the petition. A variance may not be extended or renewed unless a new petition is filed and processed in accordance with the procedures established by this section.

[7-19-68, 11-27-70, 9-3-72, 2-20-81, 11-15-96; 20.6.2.1210 NMAC - Rn, 20 NMAC 6.2.I.1210, 1-15-01]

20.6.2.1211 - 20.6.2.1219: [RESERVED]

[12-1-95; 20.6.2.1211 - 20.6.2.1219 NMAC - Rn, 20 NMAC 6.2.I.1211-1219, 1-15-01]

20.6.2.1220 PENALTIES ENFORCEMENT, COMPLIANCE ORDERS, PENALTIES, ASSURANCE OF DISCONTINUANCE.: Failure to comply with the Water Quality Act, or any regulation or standard promulgated pursuant to the Water Quality Act is a prohibited act. If the secretary determines that a person has violated or is violating a requirement of the Water Quality Act or any regulation promulgated thereunder or is exceeding any water quality standard or ground water standard contained in commission regulations, or is not complying with a condition or provision of an approved or modified abatement plan, discharge plan, or permit issued pursuant to the Water Quality Act, the secretary may issue a compliance order, assess a penalty, commence a civil action in district court, or accept an assurance of discontinuance in accordance with NMSA 1978, Section 74-6-10 of the Water Quality Act.
[12-1-95; 20.6.2.1220 NMAC - Rn, 20 NMAC 6.2.I.1220, 1-15-01]

20.6.2.1221 - 20.6.2.1999: [RESERVED]
[12-1-95; 20.6.2.1221 - 20.6.2.1999 NMAC - Rn, 20 NMAC 6.2.I.1221-2099, 1-15-01]

20.6.2.2000 SURFACE WATER PROTECTION:
[12-1-95; 20.6.2.2000 NMAC - Rn, 20 NMAC 6.2.II, 1-15-01]

20.6.2.2001 PROCEDURES FOR CERTIFICATION OF FEDERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS:

A. This section applies to the state certification of draft national pollutant discharge elimination system (NPDES) permits under Section 401 of the federal Clean Water Act. The purpose of such certification is to reasonably ensure that the permitted activities will be conducted in a manner that will comply with applicable water quality standards, including the antidegradation policy, and the statewide water quality management plan.

B. After review of a draft permit, the department will either: (1) certify that the discharge will comply with the applicable provisions of Sections 208(e), 301, 302, 303, 306 and 307 of the federal Clean Water Act and with appropriate requirements of state law; (2) certify that the discharge will comply with the applicable provisions of Sections 208(e), 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of state law upon inclusion of specified conditions in the permit and include the justification for the conditions; or (3) deny certification and include reasons for the denial. If the department does not act on the certification within the time prescribed by the federal permitting agency for such action, the authority to do so shall be waived.

C. Pursuant to federal regulations at 40 CFR 124.10(c), the U.S. environmental protection agency provides notice of draft NPDES permits to the applicant (except for general permits); various local, state, federal, tribal and pueblo government agencies; and other interested parties, and it allows at least 30 days of public comment. To the extent practicable, the department will provide public notice that the department is reviewing a draft NPDES permit for the purpose of preparing a state certification or denial pursuant to Section 401 of the federal Clean Water Act jointly with the notice provided by the U.S. environmental protection agency. The department will also post notice on its website.

D. When joint notice is impractical, the department shall provide notice that the department is reviewing a draft NPDES permit for purpose of preparing a state certification or denial pursuant to Section 401 of the federal Clean Water Act as follows:

(1) for general permits by:

(a) posting notice on the department's website;

(b) publishing notice in at least one newspaper of general circulation;

(c) mailing or e-mailing notice to those persons on the general mailing list maintained by the department who have requested such notice; and

(d) mailing or e-mailing notice to any affected local, state, federal, tribal, or pueblo government agency, as identified by the department; or

(2) for individual permits by:

(a) posting notice on the department's website;

(b) publishing notice in a newspaper of general circulation in the location of the discharge;

(c) mailing notice to the applicant;

(d) mailing or e-mailing notice to those persons on the general and facility-specific mailing list maintained by the department who have requested such notice; and

(e) mailing notice to any affected local, state, federal, tribal, or pueblo government agency, as identified by the department.

E. Public notices may describe more than one permit or permit action. The notice provided under Subsections C and D of 20.6.2.2001 NMAC shall include:

(1) for general permits:

(a) a statement that the department will accept written comments on the draft permit during the comment period including the address where comments may be submitted;

(b) a brief description of the activities that produce the discharge; and

(c) a description of the geographic area to be covered by the permit; or

(2) for individual permits:

(a) a statement that the department will accept written comments on the draft permit during the comment period including the address where comments may be submitted;

(b) the name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

(c) a brief description of the activities that produce the discharge; and

(d) a general description of the location of the discharge and the name of the receiving water.

F. Following the public notice provided under Subsections C or D of 20.6.2.2001 NMAC, there shall be a period of at least 30 days during which interested persons may submit written comments to the department. The 30-day comment period shall begin on the date of the public notice provided under Subsections C or D of 20.6.2.2001 NMAC. The department shall consider all pertinent comments.

G. Following the public comment period provided under Subsection F of 20.6.2.2001 NMAC, the department shall issue a final permit certification including any conditions that the department places on the certification, or issue a statement of denial including the reasons for the denial. The final certification will generally be issued within 45 days from the date a request to grant, deny or waive certification is received by the department, unless the department in consultation with the U.S. environmental protection agency regional administrator finds that unusual circumstances require a longer time. The department shall send a copy of the final permit certification or denial to the U.S. environmental protection agency, the applicant (except for general permits), and those members of the public who submitted comments to the department.

(1) The permit certification shall be in writing and shall include:

(a) the name of the applicant (except for general permits) and the NPDES permit number;

(b) a statement that the department has examined the application or other relevant information and bases its certification upon an evaluation of the information contained in such application or other information which is relevant to water quality considerations;

(c) a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards;

(d) a statement of any conditions which the department deems necessary or desirable with respect to the discharge of the activity;

(e) identification of any condition more stringent than that in the draft permit required to assure compliance with the applicable provisions of Sections 208(e), 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of state law citing the Clean Water Act or state law upon which the condition is based;

(f) a statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of state law, including water quality standards; and

(g) such other information as the department may determine to be appropriate.

(2) With justification, including any of the reasons listed in the New Mexico Water Quality Act, NMSA 1978, Section 74-6-5(E), the department may deny permit certification. Denial of permit certification shall be in writing and shall include:

(a) the name of the applicant (except for general permits) and the NPDES permit number;

(b) a statement that the department has examined the application or other relevant information and bases its denial upon an evaluation of the information contained in such application or other information which is relevant to water quality considerations;

(c) a statement of denial including the reasons for the denial; and

(d) such other information as the department may determine to be appropriate.

H. Any person who is adversely affected by the certification or denial of a specific permit may appeal such certification or denial by filing a petition for review with the secretary within 30 days after the department issues the final permit certification or statement of denial. Such petition shall be in writing and shall include a concise statement of the reasons for the appeal and the relief requested. The secretary may hold a hearing on the appeal. In any such appeal hearing, the procedures of 20.1.4 NMAC shall not apply. The department shall give notice of the appeal hearing at least 30 days prior to the hearing. The notice shall state the date, time, and location of the appeal hearing and shall include the pertinent information listed in Subparagraphs (b), (c), and (d) of Paragraph (2) of Subsection E of 20.6.2.2001 NMAC. The secretary shall appoint a hearing officer to preside over the appeal hearing. Any person may present oral or written

statements, data, technical information, legal arguments, or other information on the permit certification or denial during the appeal hearing. Any person may present oral or written statements, data, technical information, legal arguments, or other information in rebuttal of that presented by another person. Reasonable time limits may be placed on oral statements, and the submission of written statements may be required. The hearing officer may question persons presenting oral testimony. Cross examination of persons presenting oral statements shall not otherwise be allowed. Within 30 days after the completion of the hearing, or such other time as the secretary may order given the complexities of the case, the hearing officer shall submit recommendations to the secretary. The secretary shall issue a final decision on the appeal within 30 days after receiving the recommendation, or such other time as the secretary may order given the complexities of the case.

I. Pursuant to the New Mexico Water Quality Act, NMSA 1978, Section 74-6-5(O), any person who is adversely affected by the secretary's final decision may file with the commission a petition for review of that decision based on the administrative record.

[20.6.2.2001 NMAC - N, 5-18-11]

20.6.2.2002 PROCEDURES FOR CERTIFICATION OF FEDERAL PERMITS FOR DISCHARGE OF DREDGED OR FILL MATERIAL:

A. This section applies to the state certification of draft permits or permit applications for the discharge of dredged or fill material under Section 401 of the federal Clean Water Act. The purpose of such certification is to reasonably ensure that the permitted activities will be conducted in a manner that will comply with applicable water quality standards, including the antidegradation policy, and the statewide water quality management plan.

B. After review of a draft permit or permit application, the department will either: (1) certify that the discharge will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the federal Clean Water Act and with appropriate requirements of state law; (2) certify that the discharge will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of state law upon inclusion of specified conditions in the permit and include the justification for the conditions; or (3) deny certification and include reasons for the denial. If the department does not act on the certification within the time prescribed by the federal permitting agency for such action, the authority to do so shall be waived.

C. Pursuant to federal regulations at 33 CFR 325.3 and 33 CFR 330.5, the U.S. army corps of engineers provides notice of draft dredged or fill permits and permit applications to the applicant (except for general or nationwide permits); various local, state, federal, tribal and pueblo government agencies; and other interested parties, and it allows at least 15 days of public comment. To the extent practicable, the department will provide public notice that the department is reviewing a draft permit or permit application for the purpose of preparing a state certification or denial pursuant to Section 401 of the federal Clean Water Act jointly with the notice provided by the U.S. army corps of engineers. The department will also post notice on its website.

D. When joint notice is impractical, the department shall provide notice that the department is reviewing a draft dredged or fill permit or permit application for purpose of preparing a state certification or denial pursuant to Section 401 of the federal Clean Water Act as follows:

(1) for general permits by:

(a) posting notice on the department's website;

(b) publishing notice in at least one newspaper of general circulation;

(c) mailing or e-mailing notice to those persons on the general mailing list maintained by the department who have requested such notice; and

(d) mailing or e-mailing notice to any affected local, state, federal, tribal, or pueblo government agency, as identified by the department; or

(2) for individual permit applications by:

(a) posting notice on the department's website;

(b) publishing notice in a newspaper of general circulation in the location of the discharge;

(c) mailing notice to the applicant;

(d) mailing or e-mailing notice to those persons on the general and facility-specific mailing list maintained by the department who have requested such notice; and

(e) mailing notice to any affected local, state, federal, tribal, or pueblo government agency, as identified by the department.

E. Public notices may describe more than one permit or permit action. The notice provided under Subsections C and D of 20.6.2.2002 NMAC shall include:

(1) for general permits:

(a) a statement that the department will accept written comments on the draft permit during the comment period including the address where comments may be submitted;

(b) a brief description of the activities that produce the discharge; and

(c) a description of the geographic area to be covered by the permit; or

(2) for individual permit applications:

(a) a statement that the department will accept written comments on the permit application during the comment period including the address where comments may be submitted;

(b) the name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

(c) a brief description of the activities that produce the discharge; and

(d) a general description of the location of the discharge and the name of the receiving water.

F. Following the public notice provided under Subsections C or D of 20.6.2.2002 NMAC, there shall be a period of at least 30 days during which interested persons may submit written comments to the department. The 30-day comment period shall begin on the date of the public notice provided under Subsections C or D of 20.6.2.2002 NMAC. The department shall consider all pertinent comments.

G. The public notice provisions in Subsection C and D of Section 20.6.2.2002 NMAC and the public comment provisions in Subsection F of Section 20.6.2.2002 NMAC shall not apply to permits issued using emergency procedures under 33 CFR 325.2(e)(4). However, even in emergency situations, reasonable efforts shall be made to receive comments from interested state and local agencies and the affected public.

H. Following the public comment period provided under Subsection F of 20.6.2.2002 NMAC, the department shall issue a final permit certification including any conditions that the department places on the certification, or issue a statement of denial including the reasons for the denial. The final certification will generally be issued within 60 days from the date a request to grant, deny or waive certification is received by the department, unless the department in consultation with the U.S. army corps of engineers district engineer finds that unusual circumstances require a longer time. The department shall send a copy of the final permit certification or denial to the army corps of engineers, the applicant (except for general or nationwide permits), and those members of the public who submitted comments to the department.

(1) The permit certification or denial shall be in writing and shall include:

(a) the name of the applicant (except for general permits) and the permit number;

(b) a statement that the department has examined the application or other relevant information and bases its certification upon an evaluation of the information contained in such application or other information which is relevant to water quality considerations;

(c) a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards;

(d) a statement of any conditions which the department deems necessary or desirable with respect to the discharge of the activity; and

(e) such other information as the department may determine to be appropriate.

(2) With justification, including any of the reasons listed in the New Mexico Water Quality Act, NMSA 1978, Section 74-6-5(E), the department may deny permit certification. Denial of permit certification shall be in writing and shall include:

(a) the name of the applicant (except for general permits) and the permit number;

(b) a statement that the department has examined the application or other relevant information and bases its denial upon an evaluation of the information contained in such application or other information which is relevant to water quality considerations;

(c) a statement of denial including the reasons for the denial; and

(d) such other information as the department may determine to be appropriate.

I. Any person who is adversely affected by the certification or denial of a specific permit may appeal such certification or denial by filing a petition for review with the secretary within 30 days after the department issues the final permit certification or statement of denial. Such petition shall be in writing and shall include a concise statement of the reasons for the appeal and the relief requested. The secretary may hold a hearing on the appeal. In any such appeal hearing, the procedures of 20.1.4 NMAC shall not apply. The department shall give notice of the appeal hearing at least 30 days prior to the hearing. The notice shall state the date, time, and location of the appeal hearing and shall include the pertinent information listed in Subparagraphs (b), (c), and (d) of Paragraph (2) of Subsection E of 20.6.2.2002 NMAC. The secretary shall appoint a hearing officer to preside over the appeal hearing. Any person may present oral or written statements, data, technical information, legal arguments, or other information on the permit certification or denial during the appeal hearing. Any person may present oral or written statements, data, technical information, legal arguments, or other information in rebuttal of that presented by another person. Reasonable time limits may be placed on oral statements, and the submission of written statements may be required. The hearing officer may question persons presenting oral testimony. Cross examination of persons presenting oral statements shall not otherwise be allowed. Within 30 days after the completion of the hearing, or such other time as the secretary may order given the complexities of the case, the hearing officer shall submit recommendations to the secretary. The secretary shall issue a final decision on

the appeal within 30 days after receiving the recommendation, or such other time as the secretary may order given the complexities of the case.

J. Pursuant to the New Mexico Water Quality Act, NMSA 1978, Section 74-6-5(O), any person who is adversely affected by the secretary's final decision may file with the commission a petition for review of that decision based on the administrative record.

[20.6.2.2002 NMAC - N, 5-18-11]

20.6.2.2003 PROCEDURES FOR CERTIFICATION OF OTHER FEDERAL PERMITS:

A. This section applies to the state certification of draft federal permits, permit applications or licenses under Section 401 of the federal Clean Water Act, except for NPDES permits or permits for the discharge of dredged or fill material. For example, this section applies to certification of permits or licenses issued by the federal energy regulatory commission (FERC) and to permits or licenses issued under the Rivers and Harbors Act of 1899. The purpose of such certification is to reasonably ensure that the permitted activities will be conducted in a manner that will comply with applicable water quality standards, including the antidegradation policy, and the statewide water quality management plan.

B. After review of a draft permit, permit application or license, the department will either: (1) certify that the activity will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the federal Clean Water Act and with appropriate requirements of state law; (2) certify that the activity will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of state law upon inclusion of specified conditions in the permit and include the justification for the conditions; or (3) deny certification and include reasons for the denial. If the department does not act on the certification within the time prescribed by the federal permitting agency for such action, the authority to do so shall be waived.

C. To the extent practicable, the department will provide public notice that the department is reviewing a draft federal permit, permit application or license for the purpose of preparing a state certification or denial jointly with the notice provided by the federal permitting or licensing agency. The department will also post notice on its website.

D. When joint notice is impractical, the department shall provide notice that the department is reviewing a draft federal permit, permit application or license for purpose of preparing a state certification or denial pursuant to Section 401 of the federal Clean Water Act as follows:

(1) for general permits or licenses by:

(a) posting notice on the department's website;

(b) publishing notice in at least one newspaper of general circulation;

(c) mailing or e-mailing notice to those persons on the general mailing list maintained by the department who have requested such notice; and

(d) mailing or e-mailing notice to any affected local, state, federal, tribal, or pueblo government agency, as identified by the department; or

(2) for individual permits or licenses by:

(a) posting notice on the department's website;

(b) publishing notice in a newspaper of general circulation in the location of the permitted or licensed activity;

(c) mailing notice to the applicant;

(d) mailing or e-mailing notice to those persons on the general and facility-specific mailing list maintained by the department who have requested such notice; and

(e) mailing notice to any affected local, state, federal, tribal, or pueblo government agency, as identified by the department.

E. Public notices may describe more than one license, permit or permit action. The notice provided under Subsections C and D of 20.6.2.2003 NMAC shall include:

(1) for general permits or licenses:

(a) a statement that the department will accept written comments on the permit or license during the comment period including the address where comments may be submitted; and

(b) a brief description of the permitted or licensed activities; and

(c) a description of the geographic area to be covered by the permit; or

(2) for individual permits or licenses:

(a) a statement that the department will accept written comments on the permit or license during the comment period including the address where comments may be submitted;

(b) the name and address of the licensee, permittee or permit or license applicant and, if different, of the facility or activity regulated by the permit or license;

(c) a brief description of the permitted or licensed activities; and

(d) a general description of the location of the permitted or licensed activities and the name of the receiving water.

F. Following the public notice provided under Subsections C or D of 20.6.2.2003 NMAC, there shall be a period of at least 30 days during which interested persons may submit written comments to the department. The 30-day comment period shall begin on the date of the public notice provided under Subsections C or D of 20.6.2.2003 NMAC. The department shall consider all pertinent comments.

G. Following the public comment period provided under Subsection F of 20.6.2.2003 NMAC, the department shall issue a final certification including any conditions that the department places on the certification, or issue a statement of denial including the reasons for the denial. The final certification will generally be issued within 60 days from the date a request to grant or deny certification is received by the department, unless the department in consultation with the federal permitting or licensing agency finds that unusual circumstances require a longer time. The department shall send a copy of the final certification or denial to the federal permitting or licensing agency, the applicant (except for general permits), and those members of the public who submitted comments to the department.

(1) The certification or denial shall be in writing and shall include:

(a) the name of the applicant (except for general permits) and the permit or license number;

(b) a statement that the department has examined the application or other relevant information and bases its certification upon an evaluation of the information contained in such application or other information which is relevant to water quality considerations;

(c) a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards;

(d) a statement of any conditions which the department deems necessary or desirable with respect to the discharge of the activity;

(e) identification of any condition more stringent than that in the draft permit or license required to assure compliance with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act and with appropriate requirements of state law citing the Clean Water Act or state law upon which the condition is based;

(f) a statement of the extent to which each condition of the draft permit or license can be made less stringent without violating the requirements of state law, including water quality standards; and

(g) Such other information as the department may determine to be appropriate.

(2) With justification, including any of the reasons listed in the New Mexico Water Quality Act, NMSA 1978, Section 74-6-5(E), the department may deny certification. Denial of certification shall be in writing and shall include:

(a) the name of the applicant (except for general permits) and the permit or license number;

(b) a statement that the department has examined the application or other relevant information and bases its denial upon an evaluation of the information contained in such application or other information which is relevant to water quality considerations;

(c) a statement of denial including the reasons for the denial; and

(d) such other information as the department may determine to be appropriate.

H. Any person who is adversely affected by the certification or denial of a specific permit or license may appeal such certification or denial by filing a petition for review with the secretary within 30 days after the department issues the final certification or statement of denial. Such petition shall be in writing and shall include a concise statement of the reasons for the appeal and the relief requested. The secretary may hold a hearing on the appeal. In any such appeal hearing, the procedures of 20.1.4 NMAC shall not apply. The department shall give notice of the appeal hearing at least 30 days prior to the hearing. The notice shall state the date, time, and location of the appeal hearing and shall include the pertinent information listed in Subparagraphs (b), (c), and (d) of Paragraph (2) of Subsection E of 20.6.2.2003 NMAC. The secretary shall appoint a hearing officer to preside over the appeal hearing. Any person may present oral or written statements, data, technical information, legal arguments, or other information on the certification or denial during the appeal hearing. Any person may present oral or written statements, data, technical information, legal arguments, or other information in rebuttal of that presented by another person. Reasonable time limits may be placed on oral statements, and the submission of written statements may be required. The hearing officer may question persons presenting oral testimony. Cross examination of persons presenting oral statements shall not otherwise be allowed. Within 30 days after the completion of the hearing, or such other time as the secretary may order given the complexities of the case, the hearing officer shall submit recommendations to the secretary. The secretary shall issue a final decision on the appeal within 30 days after receiving the recommendation, or such other time as the secretary may order given the complexities of the case.

I. Pursuant to the New Mexico Water Quality Act, NMSA 1978, Section 74-6-5(O), any person who is adversely affected by the secretary's final decision may file with the commission a petition for review of that decision based on the administrative record.

[20.6.2.2003 NMAC - N, 5-18-11]

20.6.2.2004 - 20.6.2.2099: [RESERVED]
[12-1-95; 20.6.2.2001 - 20.6.2.2099 NMAC - Rn, 20 NMAC 6.2.I.1221-2099, 1-15-01; A, 5-18-11]

20.6.2.2100 APPLICABILITY: The requirements of Section 20.6.2.2101 and 20.6.2.2102 NMAC shall not apply to any discharge which is subject to a permit under the National Pollutant Discharge Elimination System of P. L. 92-500; provided that any discharger who is given written notice of National Pollutant Discharge Elimination System permit violation from the Administrator of the Environmental Protection Agency and who has not corrected the violation within thirty days of receipt of said notice shall be subject to Section 20.6.2.2101 and 20.6.2.2102 NMAC until in compliance with the National Pollution Discharge Elimination System permit conditions; provided further that nothing in this Part shall be construed as a deterrent to action under Section 74-6-11 NMSA, 1978.
[8-13-76; 20.6.2.2100 NMAC - Rn, 20 NMAC 6.2.II.2100, 1-15-01]

20.6.2.2101 GENERAL REQUIREMENTS:

A. Except as otherwise provided in Sections 20.6.2.2000 through 20.6.2.2201 NMAC, no person shall cause or allow effluent to discharge to a watercourse if the effluent as indicated by:

(1) any two consecutive daily composite samples;

(2) more than one daily composite sample in any thirty-day period (in which less than ten (10) daily composite samples are examined);

(3) more than ten percent (10%) of the daily composite samples in any thirty-day period (in which ten (10) or more daily composite samples are examined); or

(4) a grab sample collected during flow from an intermittent or infrequent discharge

does not conform to the following:

(a)	Bio-chemical Oxygen Demand (BOD)—Less than 30 mg/l	
(b)	Chemical Oxygen Demand (COD)	Less than 125 mg/l
(c)	Settleable Solids	Less than 0.5 mg/l
(d)	Fecal Coliform Bacteria	Less than 500 organisms per 100 ml
(e)	pH	Between 6.6 and 8.6

B. Upon application, the secretary may eliminate the pH requirement for any effluent source that the secretary determines does not unreasonably degrade the water into which the effluent is discharged.

C. Subsection A of this Section does not apply to the weight of constituents in the water diverted.

D. Samples shall be examined in accordance with the most current edition of Standard Methods for the Examination of Water and Wastewater published by the American Public Health Association or the most current edition of Methods for Chemical Analysis of Water and Wastes published by the Environmental Protection Agency, where applicable.
[4-20-68, 3-14-71, 10-8-71, 8-13-76, 2-20-81, 12-1-95; 20.6.2.2101 NMAC - Rn, 20 NMAC 6.2.II.2101, 1-15-01]

20.6.2.2102 RIO GRANDE BASIN--COMMUNITY SEWERAGE SYSTEMS:

A. No person shall cause or allow effluent from a community sewerage system to discharge to a watercourse in the Rio Grande Basin between the headwaters of Elephant Butte Reservoir and Angostura Diversion Dam as described in Subsection E of this Section if the effluent, as indicated by:

(1) any two consecutive daily composite samples;

(2) more than one daily composite sample in any thirty-day period (in which less than ten (10) daily composite samples are examined);

(3) more than ten percent (10%) of the daily composite samples in any thirty-day period (in which ten (10) or more daily composite samples are examined); or

(4) a grab sample collected during flow from an intermittent or infrequent discharge

does not conform to the following:

(a)	Bio-chemical Oxygen Demand (BOD)	Less than 30 mg/l
(b)	Chemical Oxygen Demand (COD)	Less than 80 mg/l
(c)	Settleable Solids	Less than 0.1 mg/l
(d)	Fecal Coliform Bacteria	Less than 500 organisms per 100 ml
(e)	pH	Between 6.6 and 8.6

B. Upon application, the secretary may eliminate the pH requirement for any effluent source that the secretary determines does not unreasonably degrade the water into which the effluent is discharged.

C. Subsection A of this Section does not apply to the weight of constituents in the water diverted.

D. Samples shall be examined in accordance with the most current edition of Standard Methods for the Analysis of Water and Wastewater published by the American Public Health Association or the most current edition of

Methods for Chemical Analysis of Water and Wastes published by the Environmental Protection Agency, where applicable.

E. The following is a description of the Rio Grande Basin from the headwaters of Elephant Butte Reservoir to Angostura Diversion Dam as used in this Section. Begin at San Marcial USGS gauging station, which is the headwaters of Elephant Butte Reservoir Irrigation Project, thence northwest to U.S. Highway 60, nine miles + west of Magdalena; thence west along the northeast edge of the San Agustin Plains closed basin; thence north along the east side of the north plains closed basin to the Continental Divide; thence northly along the Continental Divide to the community of Regina on State Highway 96; thence southeasterly along the crest of the San Pedro Mountains to Cerro Toledo Peak; thence southwesterly along the Sierra de Los Valles ridge and the Borrego Mesa to Bodega Butte; thence southerly to Angostura Diversion Dam which is the upper reach of the Rio Grande in this basin; thence southeast to the crest and the crest of the Manzano Mountains and the Los Pinos Mountains; thence southerly along the divide that contributes to the Rio Grande to San Marcial gauging station to the point and place of beginning; excluding all waters upstream of Jemez Pueblo which flow into the Jemez River drainage and the Bluewater Lake. Counties included in the basin are:

(1) north portion of Socorro County;
(2) northeast corner of Catron County;
(3) east portion of Valencia County;
(4) west portion of Bernalillo County;
(5) east portion of McKinley County; and
(6) most of Sandoval County.

[3-14-71, 9-3-72, 8-13-76, 2-20-81, 12-1-95; 20.6.2.2102 NMAC - Rn, 20 NMAC 6.2.II.2102, 1-15-01]

20.6.2.2103 - 20.6.2.2199: [RESERVED]
[12-1-95; 20.6.2.2103 - 20.6.2.2199 NMAC - Rn, 20 NMAC 6.2.II.2103-2199, 1-15-01]

20.6.2.2200 WATERCOURSE PROTECTION:
[12-1-95; 20.6.2.2200 NMAC - Rn, 20 NMAC 6.2.II.2200, 1-15-01]

20.6.2.2201 DISPOSAL OF REFUSE: No person shall dispose of any refuse in a natural watercourse or in a location and manner where there is a reasonable probability that the refuse will be moved into a natural watercourse by leaching or otherwise. Solids diverted from the stream and returned thereto are not subject to abatement under this Section.
[4-20-68, 9-3-72; 20.6.2.2201 NMAC - Rn, 20 NMAC 6.2.II.2201, 1-15-01]

20.6.2.2202 - 20.6.2.2999: [RESERVED]
[12-1-95; 20.6.2.2202 - 20.6.2.2999 NMAC - Rn, 20 NMAC 6.2.II.2202-3100, 1-15-01]

20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:
[12-1-95; 20.6.2.3000 NMAC - Rn, 20 NMAC 6.2.III, 1-15-01]

20.6.2.3001 - 20.6.2.3100: [RESERVED]
[12-1-95; 20.6.2.3001 - 20.6.2.3100 NMAC - Rn, 20 NMAC 6.2.II.2202-3100, 1-15-01]

20.6.2.3101 PURPOSE:

A. The purpose of Sections 20.6.2.3000 through 20.6.2.3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.3000 through 20.6.2.3114 NMAC are written so that in general:

(1) if the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and

(2) if the existing concentration of any water contaminant in ground water exceeds the standard of Section 20.6.2.3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

B. Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources.

C. The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations.
[2-18-77; 20.6.2.3101 NMAC - Rn, 20 NMAC 6.2.III.3101, 1-15-01]

20.6.2.3102: [RESERVED]
[12-1-95; 20.6.2.3102 NMAC - Rn, 20 NMAC 6.2.III.3102, 1-15-01]

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection D of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U.S. environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total unfiltered concentrations of the contaminants.

A. Human Health Standards-Ground water shall meet the standards of Subsection A and B of this section unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria as set forth in the definition of toxic pollutant in Section 20.6.2.1101 NMAC for the combination of contaminants, or the Human Health Standard of Subsection A of Section 20.6.2.3103 NMAC for each contaminant shall apply, whichever is more stringent. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

(1)	Arsenic (As)	0.1 mg/l
(2)	Barium (Ba)	1.0 mg/l
(3)	Cadmium (Cd)	0.01 mg/l
(4)	Chromium (Cr)	0.05 mg/l
(5)	Cyanide (CN)	0.2 mg/l
(6)	Fluoride (F)	1.6 mg/l
(7)	Lead (Pb)	0.05 mg/l
(8)	Total Mercury (Hg)	0.002 mg/l
(9)	Nitrate (NO_3 as N)	10.0 mg/l
(10)	Selenium (Se)	0.05 mg/l
(11)	Silver (Ag)	0.05 mg/l
(12)	Uranium (U)	0.03 mg/l
(13)	Radioactivity: Combined Radium-226 & Radium-228	30 pCi/l
(14)	Benzene	0.01 mg/l
(15)	Polychlorinated biphenyls (PCB's)	0.001 mg/l
(16)	Toluene	0.75 mg/l
(17)	Carbon Tetrachloride	0.01 mg/l
(18)	1,2-dichloroethane (EDC)	0.01 mg/l
(19)	1,1-dichloroethylene (1,1-DCE)	0.005 mg/l
(20)	1,1,2,2-tetrachloroethylene (PCE)	0.02 mg/l
(21)	1,1,2-trichloroethylene (TCE)	0.1 mg/l
(22)	ethylbenzene	0.75 mg/l
(23)	total xylenes	0.62 mg/l
(24)	methylene chloride	0.1 mg/l
(25)	chloroform	0.1 mg/l
(26)	1,1-dichloroethane	0.025 mg/l
(27)	ethylene dibromide (EDB)	0.0001 mg/l
(28)	1,1,1-trichloroethane	0.06 mg/l
(29)	1,1,2-trichloroethane	0.01 mg/l
(30)	1,1,2,2-tetrachloroethane	0.01 mg/l
(31)	vinyl chloride	0.001 mg/l
(32)	PAHs: total naphthalene plus monomethylnaphthalenes	0.03 mg/l
(33)	benzo-a-pyrene	0.0007 mg/l

B. Other Standards for Domestic Water Supply

(1)	Chloride (Cl)	250.0 mg/l
(2)	Copper (Cu)	1.0 mg/l
(3)	Iron (Fe)	1.0 mg/l
(4)	Manganese (Mn)	0.2 mg/l
(6)	Phenols	0.005 mg/l

(7) Sulfate (SO_4) .....600.0 mg/l
(8) Total Dissolved Solids (TDS) .....1000.0 mg/l
(9) Zinc (Zn) .....10.0 mg/l
(10) pH.....between 6 and 9

C. Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1) Aluminum (Al).....5.0 mg/l
(2) Boron (B) .....0.75 mg/l
(3) Cobalt (Co) .....0.05 mg/l
(4) Molybdenum (Mo) .....1.0 mg/l
(5) Nickel (Ni) .....0.2 mg/l

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-04]
[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20.6.2.3111 NMAC, regarding transfers.
[2-18-77, 12-24-87, 12-1-95; Rn & A, 20.6.2.3104 NMAC - 20 NMAC 6.2.III.3104, 1-15-01; A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20.6.2.3104 and 20.6.2.3106 NMAC do not apply to the following:

A. Effluent or leachate which conforms to all the listed numerical standards of Section 20.6.2.3103 NMAC and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is regulated pursuant to 20.7.3 NMAC, "Liquid Waste Disposal and Treatment" regulations;

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section;

F. Those constituents which are subject to effective and enforceable effluent limitations in a National Pollutant Discharge Elimination System (NPDES) permit, where discharge onto or below the surface of the ground so that water contaminants may move directly or indirectly into ground water occurs downstream from the outfall where NPDES effluent limitations are imposed, unless the secretary determines that a hazard to public health may result. For purposes of this subsection, monitoring requirements alone do not constitute effluent limitations;

G. Discharges resulting from flood control systems;

H. Leachate which results from the direct natural infiltration of precipitation through disturbed materials, unless the secretary determines that a hazard to public health may result;

I. Leachate which results entirely from the direct natural infiltration of precipitation through undisturbed materials;

J. Leachate from materials disposed of in accordance with the Solid Waste Management Regulations (20 NMAC 9.1) adopted by the New Mexico Environmental Improvement Board;

K. Natural ground water seeping or flowing into conventional mine workings which re-enters the ground by natural gravity flow prior to pumping or transporting out of the mine and without being used in any mining process; this exemption does not apply to solution mining;

L. Effluent or leachate discharges resulting from activities regulated by a mining plan approved and permit issued by the New Mexico Coal Surface Mining Commission, provided that this exemption shall not be construed as limiting the application of appropriate ground water protection requirements by the New Mexico Coal Surface Mining Commission;

M. Effluent or leachate discharges which are regulated by the Oil Conservation Commission and the regulation of which by the Water Quality Control Commission would interfere with the exclusive authority granted under Section 70-2-12 NMSA 1978, or under other laws, to the Oil Conservation Commission.

[2-18-77, 6-26-80, 7-2-81, 12-24-87, 12-1-95; 20.6.2.3105 NMAC - Rn, 20 NMAC 6.2.III.3105, 1-15-01; A, 12-1-01; A, 8-1-14]

20.6.2.3106 APPLICATION FOR DISCHARGE PERMITS AND RENEWALS:

A. Any person who, before or on June 18, 1977, is discharging any of the water contaminants listed in 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall, within 120 days of receipt of written notice from the secretary that a discharge permit is required, or such longer time as the secretary shall for good cause allow, submit a discharge plan to the secretary for approval; such person may discharge without a discharge permit until 240 days after written notification by the secretary that a discharge permit is required or such longer time as the secretary shall for good cause allow.

B. Any person who intends to begin, after June 18, 1977, discharging any of the water contaminants listed in 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall notify the secretary giving the information enumerated in Subsection B of 20.6.2.1201 NMAC; the secretary shall, within 60 days, notify such person if a discharge permit is required; upon submission, the secretary shall review the discharge plan pursuant to 20.6.2.3108 and 20.6.2.3109 NMAC. For good cause shown the secretary may allow such person to discharge without a discharge permit for a period not to exceed 120 days.

C. A proposed discharge plan shall set forth in detail the methods or techniques the discharger proposes to use or processes expected to naturally occur which will ensure compliance with this part. At least the following information shall be included in the plan:

(1) quantity, quality and flow characteristics of the discharge;

(2) location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;

(3) depth to and TDS concentration of the ground water most likely to be affected by the discharge;

(4) flooding potential of the site;

(5) location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;

(6) depth to and lithological description of rock at base of alluvium below the discharge site if such information is available;

(7) any additional information that may be necessary to demonstrate that the discharge permit will not result in concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use; detailed information on site geologic and hydrologic conditions may be required for a technical evaluation of the applicant's proposed discharge plan; and

(8) additional detailed information required for a technical evaluation of underground injection control wells as provided in 20.6.2.5000 through 20.6.2.5399 NMAC.

D. An applicant for a discharge permit shall pay fees as specified in 20.6.2.3114 and 20.6.2.5302 NMAC.

E. An applicant for a permit to dispose of or use septage or sludge, or within a source category designated by the commission, may be required by the secretary to file a disclosure statement as specified in 74-6-5.1 of the Water Quality Act.

F. If the holder of a discharge permit submits an application for discharge permit renewal at least 120 days before the discharge permit expires, and the discharger is not in violation of the discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge permit continued under this provision remains fully effective and enforceable. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

[2-18-77, 6-26-80, 7-2-81, 9-20-82, 8-17-91, 12-1-95; 20.6.2.3106 NMAC - Rn, 20 NMAC 6.2.III.3106, 1-15-01; A, 12-1-01; A, 9-15-02; A, 8-31-15]

20.6.2.3107 MONITORING, REPORTING, AND OTHER REQUIREMENTS:

A. Each discharge plan shall provide for the following as the secretary may require:

(1) the installation, use, and maintenance of effluent monitoring devices;

(2) the installation, use, and maintenance of monitoring devices for the ground water most likely to be affected by the discharge;

(3) monitoring in the vadose zone;

(4) continuation of monitoring after cessation of operations;

(5) periodic submission to the secretary of results obtained pursuant to any monitoring requirements in the discharge permit and the methods used to obtain these results;

(6) periodic reporting to the secretary of any other information that may be required as set forth in the discharge permit;

(7) the discharger to retain for a period of at least five years any monitoring data required in the discharge permit;

(8) a system of monitoring and reporting to verify that the permit is achieving the expected results;

(9) procedures for detecting failure of the discharge system;

(10) contingency plans to cope with failure of the discharge permit or system;

(11) a closure plan to prevent the exceedance of standards of 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation which includes: a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent or abate such contamination; the obligation to implement the closure plan as well as the requirements of the closure plan, if any is required, survives the termination or expiration of the permit; a closure plan for any underground injection control well must also incorporate the applicable requirements of 20.6.2.5005, 20.6.2.5209, and 20.6.2.5361 NMAC.

B. Sampling and analytical techniques shall conform with the following references unless otherwise specified by the secretary:

(1) standard methods for the examination of water and wastewater, latest edition, American public health association; or

(2) methods for chemical analysis of water and waste, and other publications of the analytical quality laboratory, EPA; or

(3) techniques of water resource investigations of the U.S. geological survey; or

(4) annual book of ASTM standards; Part 31; water, latest edition, American society for testing and materials; or

(5) federal register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or

(6) national handbook of recommended methods for water-data acquisition, latest edition, prepared cooperatively by agencies of the United States government under the sponsorship of the U.S. geological survey.

C. The discharger shall notify the secretary of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants.

D. Any discharger of effluent or leachate shall allow any authorized representative of the secretary to:

(1) inspect and copy records required by a discharge permit;

(2) inspect any treatment works, monitoring and analytical equipment;

(3) sample any effluent before or after discharge;

(4) use monitoring systems and wells installed pursuant to a discharge permit requirement in order to collect samples from ground water or the vadose zone.

E. Each discharge permit for an underground injection control well shall incorporate the applicable requirements of 20.6.2.5000 through 20.6.2.5399 NMAC.

[2-18-77, 9-20-82, 11-17-83, 12-1-95; 20.6.2.3107 NMAC - Rn, 20 NMAC 6.2.III.3107, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.3108 PUBLIC NOTICE AND PARTICIPATION:

A. Within 15 days of receipt of an application for a discharge permit, modification or renewal, the department shall review the application for administrative completeness. To be deemed administratively complete, an application shall provide all of the information required by Paragraphs (1) through (5) of Subsection F of 20.6.2.3108 NMAC and shall indicate, for department approval, the proposed locations and newspaper for providing notice required by Paragraphs (1) and (4) of Subsection B or Paragraph (2) of Subsection C of 20.6.2.3108 NMAC. The department shall notify the applicant in writing when the application is deemed administratively complete. If the department determines that the application is not administratively complete, the department shall notify the applicant of the deficiencies in writing within 15 days of receipt of the application and state what additional information is necessary.

B. Within 30 days of the department deeming an application for discharge permit or discharge permit modification administratively complete, the applicant shall provide notice, in accordance with the requirements of

Subsection F of 20.6.2.3108 NMAC, to the general public in the locale of the proposed discharge in a form provided by the department by each of the methods listed below:

(1) for each 640 contiguous acres or less of a discharge site, prominently posting a synopsis of the public notice at least 2 feet by 3 feet in size, in English and in Spanish, at a place conspicuous to the public, approved by the department, at or near the proposed facility for 30 days; one additional notice, in a form approved by and may be provided by the department, shall be posted at a place located off the discharge site, at a place conspicuous to the public and approved by the department; the department may require a second posting location for more than 640 contiguous acres or when the discharge site is not located on contiguous properties;

(2) providing written notice of the discharge by mail, to owners of record of all properties within a 1/3 mile distance from the boundary of the property where the discharge site is located; if there are no properties other than properties owned by the discharger within a 1/3 mile distance from the boundary of property where the discharge site is located, the applicant shall provide notice to owners of record of the next nearest adjacent properties not owned by the discharger;

(3) providing notice by certified mail, return receipt requested, to the owner of the discharge site if the applicant is not the owner; and

(4) publishing a synopsis of the notice in English and in Spanish, in a display ad at least three inches by four inches not in the classified or legal advertisements section, in a newspaper of general circulation in the location of the proposed discharge.

C. Within 30 days of the department deeming an application for discharge permit renewal administratively complete, the applicant shall provide notice, in accordance with the requirements of Subsection F of 20.6.2.3108 NMAC, to the general public in the locale of the proposed discharge in a form provided by the department by each of the methods listed below:

(1) providing notice by certified mail to the owner of the discharge site if the applicant is not the owner; and

(2) publishing a synopsis of the notice, in English and in Spanish, in a display ad at least two inches by three inches, not in the classified or legal advertisements section, in a newspaper of general circulation in the location of the discharge.

D. Within 15 days of completion of the public notice requirements in Subsections B or C of 20.6.2.3108 NMAC, the applicant shall submit to the department proof of notice, including an affidavit of mailing(s) and the list of property owner(s), proof of publication, and an affidavit of posting, as appropriate.

E. Within 30 days of determining an application for a discharge permit, modification or renewal is administratively complete, the department shall post a notice on its website and shall mail notice to any affected local, state, federal, tribal or pueblo governmental agency, political subdivisions, ditch associations and land grants, as identified by the department. The department shall also mail or e-mail notice to those persons on a general and facility-specific list maintained by the department who have requested notice of discharge permit applications. The notice shall include the information listed in Subsection F of 20.6.2.3108 NMAC.

F. The notice provided under Subsection B, C and E of 20.6.2.3108 NMAC shall include:

(1) the name and address of the proposed discharger;

(2) the location of the discharge, including a street address, if available, and sufficient information to locate the facility with respect to surrounding landmarks;

(3) a brief description of the activities that produce the discharge described in the application;

(4) a brief description of the expected quality and volume of the discharge;

(5) the depth to and total dissolved solids concentration of the ground water most likely to be affected by the discharge;

(6) the address and phone number within the department by which interested persons may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices; and

(7) a statement that the department will accept comments and statements of interest regarding the application and will create a facility-specific mailing list for persons who wish to receive future notices.

G. All persons who submit comments or statements of interest to the department or previously participated in a public hearing and who provide a mail or e-mail address shall be placed on a facility-specific mailing list and the department shall send those persons the public notice issued pursuant to Subsection H of 20.6.2.3108 NMAC, and notice of any public meeting or hearing scheduled on the application. All persons who contact the department to inquire about a specific facility shall be informed of the opportunity to be placed on the facility-specific mailing list.

H. Within 60 days after the department makes its administrative completeness determination and all required technical information is available, the department shall make available a proposed approval or disapproval of the application for a discharge permit, modification or renewal, including conditions for approval proposed by the department or the reasons for disapproval. The department shall mail by certified mail a copy of the proposed approval or disapproval to the applicant, and shall provide notice of the proposed approval or disapproval of the application for a discharge permit, modification or renewal by:

(1) posting on the department's website;

(2) publishing notice in a newspaper of general circulation in this state and a newspaper of general circulation in the location of the facility;

(3) mailing or e-mailing to those persons on a facility-specific mailing list;

(4) mailing to any affected local, state, or federal governmental agency, ditch associations and land grants, as identified by the department; and

(5) mailing to the governor, chairperson, or president of each Indian tribe, pueblo or nation within the state of New Mexico, as identified by the department.

I. The public notice issued under Subsection H shall include the information in Subsection F of 20.6.2.3108 NMAC and the following information:

(1) a brief description of the procedures to be followed by the secretary in making a final determination;

(2) a statement of the comment period and description of the procedures for a person to request a hearing on the application; and

(3) the address and telephone number at which interested persons may obtain a copy of the proposed approval or disapproval of an application for a discharge permit, modification or renewal.

J. In the event that the proposed approval or disapproval of an application for a discharge permit, modification or renewal is available for review within 30 days of deeming the application administratively complete, the department may combine the public notice procedures of Subsections E and H of 20.6.2.3108 NMAC.

K. Following the public notice of the proposed approval or disapproval of an application for a discharge permit, modification or renewal, and prior to a final decision by the secretary, there shall be a period of at least 30 days during which written comments may be submitted to the department and/or a public hearing may be requested in writing. The 30-day comment period shall begin on the date of publication of notice in the newspaper. All comments will be considered by the department. Requests for a hearing shall be in writing and shall set forth the reasons why a hearing should be held. A public hearing shall be held if the secretary determines there is substantial public interest. The department shall notify the applicant and any person requesting a hearing of the decision whether to hold a hearing and the reasons therefore in writing.

L. If a hearing is held, pursuant to Subsection K of 20.6.2.3108 NMAC, notice of the hearing shall be given by the department at least 30 days prior to the hearing in accordance with Subsection H of 20.6.2.3108 NMAC. The notice shall include the information identified in Subsection F of 20.6.2.3108 NMAC in addition to the time and place of the hearing and a brief description of the hearing procedures. The hearing shall be held pursuant to 20.6.2.3110 NMAC. [2-18-77, 12-24-87, 12-1-95, 11-15-96; 20.6.2.3108 NMAC - Rn, 20 NMAC 6.2.III.3108, 1-15-01; A, 12-1-01; A, 9-15-02; A, 7-16-06]

20.6.2.3109 SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENT FOR ABATEMENT PLANS:

A. The department shall evaluate the application for a discharge permit, modification or renewal based on information contained in the department's administrative record. The department may request from the discharger, either before or after the issuance of any public notice, additional information necessary for the evaluation of the application. The administrative record shall consist of the application, any additional information required by the department, any information submitted by the discharger or the general public, other information considered by the department, the proposed approval or disapproval of an application for a discharge permit, modification or renewal prepared pursuant to Subsection G of 20.6.2.3108 NMAC, and, if a public hearing is held, all of the documents filed with the hearing clerk, all exhibits offered into evidence at the hearing, the written transcript or tape recording of the hearing, any hearing officer report, and any post hearing submissions.

B. The secretary shall, within 30 days after the administrative record is complete and all required information is available, approve, approve with conditions or disapprove the proposed discharge permit, modification or renewal based on the administrative record. The secretary shall give written notice of the action taken to the applicant or permittee and any other person who participated in the permitting action who requests a copy in writing.

C. Provided that the other requirements of this part are met and the proposed discharge plan, modification or renewal demonstrates that neither a hazard to public health nor undue risk to property will result, the secretary shall approve the proposed discharge plan, modification or renewal if the following requirements are met:

(1) ground water that has a TDS concentration of 10,000 mg/l or less will not be affected by the discharge; or

(2) the person proposing to discharge demonstrates that approval of the proposed discharge plan, modification or renewal will not result in either concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use, except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(3) the proposed discharge plan conforms to either Subparagraph (a) or (b) below and Subparagraph (c) below:

(a) municipal, other domestic discharges, and discharges from sewerage systems handling only animal wastes: the effluent is entirely domestic, is entirely from a sewerage system handling only animal wastes or is from a municipality and conforms to the following:

(i) the discharge is from an impoundment or a leach field existing on February 18, 1977 which receives less than 10,000 gallons per day and the secretary has not found that the discharge may cause a hazard to public health; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment will not exceed 200 pounds per acre per year and that the effluent will meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop which is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(b) discharges from industrial, mining or manufacturing operations:

(i) the discharger has demonstrated that the amount of effluent that enters the subsurface from a surface impoundment will not exceed 0.5 acre-feet per acre per year; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment shall not exceed 200 pounds per acre per year and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop that is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(c) all discharges:

(i) the monitoring system proposed in the discharge plan includes adequate provision for sampling of effluent and adequate flow monitoring so that the amount being discharged onto or below the surface of the ground can be determined;

(ii) the monitoring data is reported to the secretary at a frequency determined by the secretary.

D. The secretary shall allow the following unless he determines that a hazard to public health may result:

(1) the weight of water contaminants in water diverted from any source may be discharged provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted; and provided further that contaminants added as a result of the means of diversion shall not be considered to be part of the weight of water contaminants in the water diverted;

(2) the water contaminants leached from undisturbed natural materials may be discharged provided that:

(a) the contaminants were not leached as a product or incidentally pursuant to a solution mining operation; and

(b) the contaminants were not leached as a result of direct discharge into the vadose zone from municipal or industrial facilities used for the storage, disposal, or treatment of effluent;

(3) the water contaminants leached from undisturbed natural materials as a result of discharge into ground water from lakes used as a source of cooling water.

E. If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicates that this part is being or may be violated or that the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present, in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the water quality standards for interstate and intrastate streams in New Mexico are being or may be violated in surface water, due to the discharge, except as provided in Subsection D of 20.6.2.3109 NMAC.

(1) The secretary may require a discharge permit modification within the shortest reasonable time so as to achieve compliance with this part and to provide that any exceeding of standards in ground water at any place of withdrawal for present or reasonably foreseeable future use, or in surface water, due to the discharge except as provided in Subsection D of 20.6.2.3109 NMAC will be abated or prevented. If the secretary requires a discharge permit modification to abate water pollution:

(a) the abatement shall be consistent with the requirements and provisions of 20.6.2.4101, 20.6.2.4103, Subsections C and E of 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC; and

(b) the discharger may request of the secretary approval to carry out the abatement under 20.6.2.4000 through 20.6.2.4115 NMAC, in lieu of modifying the discharge permit; the discharger shall make the request in writing and shall include the reasons for the request.

(2) The secretary may terminate a discharge permit when a discharger fails to modify the permit in accordance with Paragraph (1) of Subsection E of 20.6.2.3109 NMAC.

(3) The secretary may require modification, or may terminate a discharge permit for a Class I well, a Class III well or other type of well specified in Subsection A of 20.6.2.5101 NMAC, pursuant to the requirements of Subsection I of 20.6.2.5101 NMAC.

F. If a discharge permit expires or is terminated for any reason and the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present in ground water, or that the water quality standards for interstate and intrastate streams in New Mexico are being or may be violated, the secretary may require the discharger to submit an abatement plan pursuant to 20.6.2.4104 and Subsection A of 20.6.2.4106 NMAC.

G. At the request of the discharger, a discharge permit may be modified in accordance with 20.6.2.3000 through 20.6.2.3114 NMAC.

H. The secretary shall not approve a proposed discharge plan, modification, or renewal for:

(1) any discharge for which the discharger has not provided a site and method for flow measurement and sampling;

(2) any discharge that will cause any stream standard to be violated;

(3) the discharge of any water contaminant which may result in a hazard to public health; or

(4) a period longer than five years, except that for new discharges, the term of the discharge permit approval shall commence on the date the discharge begins, but in no event shall the term of the approval exceed seven years from the date the permit was issued; for those permits expiring more than five years from the date of issuance, the discharger shall give prior written notification to the department of the date the discharge is to commence; the term of the permit shall not exceed five years from that date.

[2-18-77, 6-26-80, 9-20-82, 7-2-81, 3-3-86, 12-1-95, 11-15-96; 20.6.2.3109 NMAC - Rn, 20 NMAC 6.2.III.3109, 1-15-01; A, 12-1-01; A, 9-15-02; A, 7-16-06; A, 8-31-15]

20.6.2.3110 PUBLIC HEARING PARTICIPATION:

A. The secretary may appoint an impartial hearing officer to preside over the hearing. The hearing officer may be a department employee other than an employee of the bureau evaluating the application.

B. The hearing shall be at a place in the area affected by the facility for which the discharge permit proposal, modification or renewal is sought.

C. Any person who wishes to present technical evidence at the hearing shall, no later than ten (10) days prior to the hearing, file with the department, and if filed by a person who is not the applicant, serve on the applicant, a statement of intent to present evidence. A person who does not file a statement of intent to present evidence may present a general non-technical statement in support of or in opposition to the proposed discharge plan, modification or renewal. The statement of intent to present technical evidence shall include:

(1) the name of the person filing the statement;

(2) indication of whether the person filing the statement supports or opposes the proposed discharge plan proposal, modification or renewal;

(3) the name of each witness;

(4) an estimate of the length of the direct testimony of each witness;

(5) a list of exhibits, if any, to be offered into evidence at the hearing; and

(6) a summary or outline of the anticipated direct testimony of each witness.

D. At the hearing, the New Mexico Rules of Civil Procedure, SCRA 1986, 1-001 to 1-102 and the New Mexico Rules of Evidence, SCRA 1986, 11-101 to 11-1102 shall not apply. At the discretion of the hearing officer, the rules may be used as guidance. Any reference to the Rules of Civil Procedure and the Rules of Evidence shall not be construed to extend or otherwise modify the authority and jurisdiction of the department under the Act.

E. The hearing officer shall conduct a fair and impartial proceeding, assure that the facts are fully elicited, and avoid delay. The hearing officer shall have authority to take all measures necessary for the maintenance of order and for the efficient, fair and impartial adjudication of issues arising in the proceedings.

F. At the hearing, all persons shall be given a reasonable chance to submit data, views or arguments orally or in writing and to examine witnesses testifying at the hearing.

G. Unless otherwise allowed by the hearing officer, testimony shall be presented in the following order:

(1) testimony by and examination of the applicant or permittee proving the facts relied upon to justify the proposed discharge plan, renewal or modification and meeting the requirements of the regulations;

(2) testimony by and examination of technical witnesses supporting or opposing approval, approval subject to conditions, or disapproval of the proposed discharge plan, renewal or modification, in any reasonable order;

(3) testimony by the general public; and

(4) rebuttal testimony, if appropriate.

H. The secretary may provide translation service at a public hearing conducted in a locale where the Department can reasonably expect to receive testimony from non-English speaking people.

I. If determined useful by the hearing officer, within thirty (30) days after conclusion of the hearing, or within such time as may be fixed by the hearing officer, the hearing officer may allow proposed findings of fact and conclusions of law and closing argument. All such submissions, if allowed, shall be in writing, shall be served upon the applicant or permittee, the department and all persons who request copies in advance in writing, and shall contain adequate references to the record and authorities relied on. No new evidence shall be presented unless specifically allowed by the hearing officer.

J. The department shall make an audio recording of the hearing. If the applicant or permittee, or a participant requests a written transcript or certified copy of the audio recording, the requestor shall pay the cost of the transcription or audio copying.

K. The hearing officer shall issue a report within thirty (30) days after the close of the hearing record. The report may include findings of fact, conclusions regarding all material issues of law or discretion, as well as reasons therefore. The report shall be served on the applicant or permittee, the department, and all persons who request copies in advance in writing. The report will be available for public inspection at the department's office in Santa Fe and at the field office closest to the point of the proposed discharge.

L. The secretary shall issue a decision in the matter no later than thirty (30) days of receipt of the hearing report. The decision shall be served and made available for inspection pursuant to Subsection K of this section.

M. Any person who testifies at the hearing or submits a written statement for the record will be considered a participant for purposes of Subsection 20.6.2.3113 NMAC and NMSA 1978, Section 74-6-5.N.

[2-18-77, 12-1-95, 11-15-96; 20.6.2.3110 NMAC - Rn, 20 NMAC 6.2.III.3110, 1-15-01; A, 12-1-01]

20.6.2.3111 TRANSFER OF DISCHARGE PERMIT: No purported transfer of any discharge permit shall be effective to create, alter or extinguish any right or responsibility of any person subject to this Part, unless the following transfer requirements are met:

A. Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of a facility with a discharge permit, the transferror shall notify the transferee in writing of the existence of the discharge permit, and shall deliver or send by certified mail to the department a copy of such written notification, together with a certification or other proof that such notification has in fact been received by the transferee.

B. Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the department's file or files concerning such discharge permit.

C. Until both ownership and possession of the facility have been transferred to the transferee, the transferor shall continue to be responsible for any discharge from the facility.

D. Upon assuming either ownership or possession of the facility, the transferee shall have the same rights and responsibilities under the discharge permit as were applicable to the transferor.

E. Nothing in this section or in this part shall be construed to relieve any person of responsibility or liability for any act or omission which occurred while that person owned, controlled or was in possession of the facility.

[2-18-77, 12-24-87, 12-1-95, 11-15-96; 20.6.2.3111 NMAC - Rn, 20 NMAC 6.2.III.3111, 1-15-01; A, 12-1-01]

20.6.2.3112 APPEALS OF SECRETARY'S DECISIONS:

A. If the secretary approves, approves subject to conditions, or disapproves a proposed discharge plan, renewal or modification, or modifies or terminates a discharge permit, appeal therefrom shall be in accordance with the provisions of Sections 74-6-5(N), (O) and (P), NMSA 1978. The filing of an appeal does not act as a stay of any provision of the Act, the regulations, or any permit issued pursuant to the Act, unless otherwise ordered by the secretary or the commission.

B. If the secretary determines that a discharger is not exempt from obtaining a discharge permit, or that the material to be discharged contains any toxic pollutant as defined in 20.6.2.7 NMAC, which is not included in the numerical standards of 20.6.2.3103 NMAC, then the discharger may appeal such determination by filing with the commission's secretary a notice of appeal to the commission within thirty days after receiving the secretary's written determination, and the appeal therefrom and any action of the commission thereon shall be in accordance with the provisions of Sections 74-6-5(O), (P), (Q), (R) and (S) NMSA 1978.

C. Proceedings before the commission shall be conducted in accordance with the commission's adjudicatory procedures, 20 NMAC 1.3.

[2-18-77, 7-2-81, 12-1-95, 11-15-96; 20.6.2.3112 NMAC - Rn, 20 NMAC 6.2.III.3112, 1-15-01; A, 12-1-01; A, 7-16-06]

20.6.2.3113 APPEALS OF COMMISSION DECISIONS: An applicant, permittee or a person who participated in a permitting action and who is adversely affected by such action may appeal the decision of the com-mission in accordance with the provisions of Section 74-6-7(A), NMSA 1978.
[2-18-77, 12-1-95, 11-15-96; 20.6.2.3113 NMAC - Rn, 20 NMAC 6.2.III.3113, 1-15-01; A, 12-1-01]

20.6.2.3114 FEES:

A. FEE AMOUNT AND SCHEDULE OF PAYMENT - Every facility submitting a discharge permit application for approval or renewal shall pay the permit fees specified in Table 1 of this section and shall pay a filing fee as specified in Table 2 of this section to the Water Quality Management Fund. Every facility submitting a request for temporary permission to discharge pursuant to Subsection B of Section 20.6.2.3106 NMAC, or financial assurance pursuant to Paragraph 11 of Subsection A of Section 20.6.2.3107 NMAC shall pay the fees specified in Table 2 of this section to the Water Quality Management Fund.

B. Facilities applying for discharge permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. Every facility submitting an application for discharge permit modification will be assessed a filing fee plus one-half of the permit fee. Applications for both renewal and modification will pay the filing fee plus the permit fee.

D. If the secretary requires a discharge permit modification as a component of an enforcement action, the facility shall pay the applicable discharge permit modification fee. If the secretary requires a discharge permit modification outside the context of an enforcement action, the facility shall not be assessed a fee.

E. The secretary may waive or reduce fees for discharge permit modifications or renewals which require little or no cost for investigation or issuance.

F. Facilities shall pay the filing fee at the time of discharge permit application. The filing fee is nonrefundable. The required permit fees may be paid in a single payment at the time of discharge permit approval or in equal installments over the term of the discharge permit. Installment payments shall be remitted yearly, with the first installment due on the date of discharge permit approval. Subsequent installment payments shall be remitted yearly thereafter. The discharge permit or discharge permit application review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

G. Every three years beginning in 2004, the department shall review the fees specified in Table 1 and 2 of this section and shall provide a report to the commission. The department shall revise the fees as necessary in accordance with Section 74-6-5(J), NMSA 1978.

20.6.2.3114 TABLE 1 (gpd=gallons per day)	**Permit Fee**
Agriculture <10,000 gpd	$ 1,150
Agriculture 10,000 to 49,999 gpd	$ 2,300
Agriculture 50,000 to 99,999 gpd	$ 3,450
Agriculture 100,000 gpd or greater	$ 4,600
Domestic Waste <10,000 gpd	$ 1,150
Domestic Waste 10,000 to 49,999 gpd	$ 2,300
Domestic Waste 50,000 to 99,999 gpd	$ 3,450
Domestic Waste 100,000 to 999,999 gpd	$ 4,600
Domestic Waste 1,000,000 to 9,999,999 gpd	$ 7,000
Domestic Waste 10,000,000 gpd or greater	$ 9,200
Food Processing <10,000 gpd	$ 1,150
Food Processing 10,000 to 49,999 gpd	$ 2,300
Food Processing 50,000 to 99,999 gpd	$ 3,450
Food Processing 100,000 to 999,999 gpd	$ 4,600
Food Processing 1,000,000 or greater	$ 7,000
Grease/Septage surface disposal <10,000 gpd	$ 1,725
Grease/Septage surface disposal 10,000 gpd or greater	$ 3,450
Industrial <10,000 gpd; or <10,000 yd^3 of contaminated solids	$ 1,725
Industrial 10,000 to 99,999 gpd; or 10,000 to 99,999 yd^3 of contaminated solids	$ 3,450

Industrial 100,000 to 999,999 gpd; or 100,000 to 999,999 yd^3 of contaminated solids or greater	$ 6,900
Industrial 1,000,000 gpd or greater; or 1,000,000 yd^3 of contaminated solids or greater	$10,350
Discharge of remediation system effluent - remediation plan approved under separate regulatory authority	$ 1,600
Mining dewatering	$ 3,250
Mining leach dump	$13,000
Mining tailings	$13,000
Mining waste rock	$13,000
Mining in-situ leach (except salt) and old stope leaching	$13,000
Mining other (mines with minimal environmental impact, post closure operation and maintenance, evaporation lagoons and land application at uranium mines)	$ 4,750
Gas Compressor Stations 0 to 1000 Horsepower	$ 400
Gas Compressor Stations >1001 Horsepower	$ 1,700
Gas Processing Plants	$ 4,000
Injection Wells: Class I	$ 4,500
Injection Wells: Class III and Geothermal	$ 1,700
Oil and Gas Service Companies	$ 1,700
Refineries	$ 8,400
Crude Pump Station	$ 1,200
Underground Gas Storage	$ 1,700
Abatement of ground water and vadose zone contamination at oil and gas Sites	$ 2,600
General permit	$ 600

20.6.2.3114 Table 2

	Fee Amount
Filing fee	$ 100
Temporary permission	$ 150
Financial assurance: approval of instrument	greater of $250 or .01%
Financial assurance: annual review	greater of $100 or .001%

[8-17-91, 12-1-95; 20.6.2.3114, Rn & A, 20 NMAC 6.2.III.3114, 01-01-01]

20.6.2.3115 - 20.6.2.3999: [RESERVED]
[12-1-95; 20.6.2.3115 - 20.6.2.3999 NMAC - Rn, 20 NMAC 6.2.III.3115-4100, 1-15-01]

20.6.2.4000 PREVENTION AND ABATEMENT OF WATER POLLUTION:
[12-1-95; 20.6.2.4000 NMAC - Rn, 20 NMAC 6.2.IV, 1-15-01]

20.6.2.4001 - 20.6.2.4100: [RESERVED]
[12-1-95; 20.6.2.4001 - 20.6.2.4100 NMAC - Rn, 20 NMAC 6.2.III.3115-4100, 1-15-01]

20.6.2.4101 PURPOSE:

A. The purposes of Sections 20.6.2.4000 through 20.6.2.4115 NMAC are to:

(1) Abate pollution of subsurface water so that all ground water of the State of New Mexico which has a background concentration of 10,000 mg/L or less TDS, is either remediated or protected for use as domestic and agricultural water supply, and to remediate or protect those segments of surface waters which are gaining because of subsurface-water inflow, for uses designated in the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC); and

(2) Abate surface-water pollution so that all surface waters of the State of New Mexico are remediated or protected for designated or attainable uses as defined in the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC).

B. If the background concentration of any water contaminant exceeds the standard or requirement of Subsections A, B and C of Section 20.6.2.4103 NMAC, pollution shall be abated by the responsible person to the background concentration.

C. The standards and requirements set forth in Section 20.6.2.4103 NMAC are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations.

[12-1-95; 20.6.2.4101 NMAC - Rn, 20 NMAC 6.2.IV.4101, 1-15-01]

20.6.2.4102: [RESERVED]

[12-1-95; 20.6.2.4102 NMAC - Rn, 20 NMAC 6.2.IV.4102, 1-15-01]

20.6.2.4103 ABATEMENT STANDARDS AND REQUIREMENTS:

A. The vadose zone shall be abated so that water contaminants in the vadose zone shall not be capable of contaminating ground water or surface water, in excess of the standards in Subsections B and C below, through leaching, percolation or as the water table elevation fluctuates.

B. Ground-water pollution at any place of withdrawal for present or reasonably foreseeable future use, where the TDS concentration is 10,000 mg/L or less, shall be abated to conform to the following standards:

(1) toxic pollutant(s) as defined in Section 20.6.2.1101 NMAC shall not be present; and

(2) the standards of Section 20.6.2.3103 NMAC shall be met.

C. Surface-water pollution shall be abated to conform to the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC).

D. Subsurface-water and surface-water abatement shall not be considered complete until a minimum of eight (8) consecutive quarterly samples from all compliance sampling stations approved by the secretary meet the abatement standards of Subsections A, B and C of this section. Abatement of water contaminants measured in solid-matrix samples of the vadose zone shall be considered complete after one-time sampling from compliance stations approved by the secretary.

E. Technical Infeasibility.

(1) If any responsible person is unable to fully meet the abatement standards set forth in Subsections A and B of this section using commercially accepted abatement technology pursuant to an approved abatement plan, he may propose that abatement standards compliance is technically infeasible. Technical infeasibility proposals involving the use of experimental abatement technology shall be considered at the discretion of the secretary. Technical infeasibility may be demonstrated by a statistically valid extrapolation of the decrease in concentration(s) of any water contaminant(s) over the remainder of a twenty (20) year period, such that projected future reductions during that time would be less than 20 percent of the concentration(s) at the time technical infeasibility is proposed. A statistically valid decrease cannot be demonstrated by fewer than eight (8) consecutive quarters. The technical infeasibility proposal shall include a substitute abatement standard(s) for those contaminants that is/are technically feasible. Abatement standards for all other water contaminants not demonstrated to be technically infeasible shall be met.

(2) In no event shall a proposed technical infeasibility demonstration be approved by the secretary for any water contaminant if its concentration is greater than 200 percent of the abatement standard for that contaminant.

(3) If the secretary cannot approve any or all portions of a proposed technical infeasibility demonstration because the water contaminant concentration(s) is/are greater than 200 percent of the abatement standard(s) for each contaminant, the responsible person may further pursue the issue of technical infeasibility by filing a petition with the commission seeking:

(a) approval of alternate abatement standard(s) pursuant to Subsection F of this section; or

(b) granting of a variance pursuant to Section 20.6.2.1210 NMAC.

F. Alternative Abatement Standards.

(1) At any time during or after the submission of a Stage 2 abatement plan, the responsible person may file a petition seeking approval of alternative abatement standard(s) for the standards set forth in Subsections A and B of this section. The commission may approve alternative abatement standard(s) if the petitioner demonstrates that:

(a) compliance with the abatement standard(s) is/are not feasible, by the maximum use of technology within the economic capability of the responsible person; OR there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standard(s) set forth in Section 20.6.2.4103 NMAC) to be obtained;

(b) the proposed alternative abatement standard(s) is/are technically achievable and cost-benefit justifiable; and

(c) compliance with the proposed alternative abatement standard(s) will not create a present or future hazard to public health or undue damage to property.

(2) The petition shall be in writing, filed with the secretary. The petition shall specify, in addition to the information required by Subsection A of Section 20.6.2.1210 NMAC, the water contaminant(s) for which alternative standard(s) is/are proposed, the alternative standard(s) proposed, the three-dimensional body of water pollution for which approval is sought, and the extent to which the abatement standard(s) set forth in Section 20.6.2.4103 NMAC is/are now, and will in the future be, violated. The petition may include a transport, fate and risk assessment in accordance with accepted methods, and other information as the petitioner deems necessary to support the petition.

(3) The commission shall review a petition for alternative abatement standards in accordance with the procedures for review of a variance petition provided in the commission's adjudicatory procedures, 20.1.3 NMAC.

[12-1-95, 11-15-96; 20.6.2.4103 NMAC - Rn, 20 NMAC 6.2.IV.4103, 1-15-01]

20.6.2.4104 ABATEMENT PLAN REQUIRED:

A. Unless otherwise provided by this Part, all responsible persons who are abating, or who are required to abate, water pollution in excess of the standards and requirements set forth in Section 20.6.2.4103 NMAC of this Part shall do so pursuant to an abatement plan approved by the secretary. When an abatement plan has been approved, all actions leading to and including abatement shall be consistent with the terms and conditions of the abatement plan.

B. In the event of a transfer of the ownership, control or possession of a facility for which an abatement plan is required or approved, where the transferor is a responsible person, the transferee also shall be considered a responsible person for the duration of the abatement plan, and may jointly share the responsibility to conduct the actions required by this Part with other responsible persons. The transferor shall notify the transferee in writing, at least thirty (30) days prior to the transfer, that an abatement plan has been required or approved for the facility, and shall deliver or send by certified mail to the secretary a copy of such notification together with a certificate or other proof that such notification has in fact been received by the transferee. The transferor and transferee may agree to a designated responsible person who shall assume the responsibility to conduct the actions required by this Part. The responsible persons shall notify the secretary in writing if a designated responsible person is agreed upon. If the secretary determines that the designated responsible person has failed to conduct the actions required by this Part, the secretary shall notify all responsible persons of this failure in writing and allow them thirty (30) days, or longer for good cause shown, to conduct the required actions before issuing a compliance order pursuant to Section 20.6.2.1220 NMAC.

C. If the source of the water pollution to be abated is a facility that operated under a discharge plan, the secretary may require the responsible person(s) to submit a financial assurance plan which covers the estimated costs to conduct the actions required by the abatement plan. Such a financial assurance plan shall be consistent with any financial assurance requirements adopted by the commission.

[12-1-95; 20.6.2.4104 NMAC - Rn, 20 NMAC 6.2.IV.4104, 1-15-01]

20.6.2.4105 EXEMPTIONS FROM ABATEMENT PLAN REQUIREMENTS:

A. Except as provided in Subsection B of this Section, Sections 20.6.2.4104 and 20.6.2.4106 NMAC do not apply to a person who is abating water pollution:

(1) from a storage tank, under the authority of the Petroleum Storage Tank Regulations (20.5 NMAC) adopted by the New Mexico Environmental Improvement Board, or in accordance with the New Mexico Ground Water Protection Act;

(2) under the authority of the U.S. Environmental Protection Agency pursuant to either the federal Comprehensive Environmental Response, Compensation and Liability Act, and amendments, or the Resource Conservation and Recovery Act;

(3) under the authority of the secretary pursuant to the Hazardous Waste Management Regulations (20.4.1 NMAC) adopted by the New Mexico Environmental Improvement Board;

(4) under the authority of the U.S. Nuclear Regulatory Commission or the U.S. Department of Energy pursuant to the Atomic Energy Act;

(5) from a solid waste landfill, under the authority of the secretary pursuant to the Solid Waste Management Regulations (20.9.1 NMAC) adopted by the N.M. Environmental Improvement Board;

(6) under the authority of a ground-water discharge plan approved by the secretary, provided that such abatement is consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, Subsections C and E of Section 20.6.2.4106, Sections 20.6.2.4107 and 20.6.2.4112 NMAC;

(7) under the authority of a Letter of Understanding, Settlement Agreement or Administrative Order on Consent signed by the secretary prior to December 1, 1995, provided that abatement is being performed in full compliance with the terms of the Letter of Understanding, Settlement Agreement or Administrative Order on Consent; and

(8) on an emergency basis, or while abatement plan approval is pending, or in a manner that will result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within one hundred and eighty (180) days after notice is required to be given pursuant to Paragraph (1) of Subsection A of Section 20.6.2.1203 NMAC, provided that the delegated agency does not object to the abatement action pursuant to Paragraphs (6) and (7) of Subsection A of Section 20.6.2.1203 NMAC.

B. If the secretary determines that abatement of water pollution subject to Subsection A of this section will not meet the standards of Subsections B and C of Section 20.6.2.4103 NMAC, or that additional action is necessary to protect health, welfare, environment or property, the secretary may notify a responsible person, by certified mail, to submit an abatement plan pursuant to Section 20.6.2.4104 and Subsection A of Section 20.6.2.4106 NMAC. The notification shall state the reasons for the secretary's determination. In any appeal of the secretary's determination under this Section, the secretary shall have the burden of proof.

C. Sections 20.6.2.4104 and 20.6.2.4106 NMAC do not apply to the following activities:

(1) Discharges subject to an effective and enforceable National Pollutant Discharge Elimination System (NPDES) permit;

(2) Land application of ground water contaminated with nitrogen originating from human or animal waste and not otherwise exceeding the standards of Subsection A of Section 20.6.2.3103 NMAC and not containing a toxic pollutant as defined in Section 20.6.2.1101 NMAC, provided that it is done in compliance with a discharge plan approved by the secretary;

(3) Abatement of water pollution resulting from the withdrawal and decontamination or blending of polluted water for use as a public or private drinking-water supply, by any person other than a responsible person, unless the secretary determines that a hazard to public health may result; and

(4) Reasonable operation and maintenance of irrigation and flood control facilities.

[12-1-95; 20.6.2.4105 NMAC - Rn, 20 NMAC 6.2.IV.4105, 1-15-01; A, 10/15/03]

20.6.2.4106 ABATEMENT PLAN PROPOSAL:

A. Except as provided for in Section 20.6.2.4105 NMAC, a responsible person shall, within sixty (60) days of receipt of written notice from the secretary that an abatement plan is required, submit an abatement plan proposal to the secretary for approval. For good cause shown, the secretary may allow for a total of one hundred and twenty (120) days to prepare and submit the abatement plan proposal.

B. Voluntary Abatement:

(1) Any person wishing to abate water pollution in excess of the standards and requirements set forth in Section 20.6.2.4103 NMAC may submit a Stage 1 abatement plan proposal to the secretary for approval. Following approval by the secretary of a final site investigation report prepared pursuant to Stage 1 of an abatement plan, any person may submit a Stage 2 abatement plan proposal to the secretary for approval.

(2) Following approval of a Stage 1 or Stage 2 abatement plan proposal under Paragraph (1) of Subsection B of this Section, the person submitting the approved plan shall be a responsible person under Sections 20.6.2.4000 through 20.6.2.4115 NMAC for the purpose of performing the approved Stage 1 or Stage 2 abatement plan. Nothing in this Section shall preclude the secretary from applying Paragraph (9) of Subsection A of Section 20.6.2.1203 NMAC to a responsible person if applicable.

C. Stage 1 Abatement Plan: The purpose of Stage 1 of the abatement plan shall be to design and conduct a site investigation that will adequately define site conditions, and provide the data necessary to select and design an effective abatement option. Stage 1 of the abatement plan may include, but not necessarily be limited to, the following information depending on the media affected, and as needed to select and implement an expeditious abatement option:

(1) Descriptions of the site, including a site map, and of site history including the nature of the discharge that caused the water pollution, and a summary of previous investigations;

(2) Site investigation workplan to define:

(a) site geology and hydrogeology, the vertical and horizontal extent and magnitude of vadose-zone and ground-water contamination, subsurface hydraulic parameters including hydraulic conductivity, transmissivity, storativity, and rate and direction of contaminant migration, inventory of water wells inside and within one (1) mile from the perimeter of the three-dimensional body where the standards set forth in Subsection B of Section 20.6.2.4103 NMAC are exceeded, and location and number of such wells actually or potentially affected by the pollution; and

(b) surface-water hydrology, seasonal stream flow characteristics, ground-water/surface-water relationships, the vertical and horizontal extent and magnitude of contamination and impacts to surface water and stream sediments. The magnitude of contamination and impacts on surface water may be, in part, defined by conducting a biological assessment of fish, benthic macroinvertebrates and other wildlife populations. Seasonal variations should be accounted for when conducting these assessments.

(3) Monitoring program, including sampling stations and frequencies, for the duration of the abatement plan that may be modified, after approval by the secretary, as additional sampling stations are created;

(4) Quality assurance plan, consistent with the sampling and analytical techniques listed in Subsection B of Section 20.6.2.3107 NMAC and with Section 20.6.4.10 NMAC of the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC), for all work to be conducted pursuant to the abatement plan;

(5) Site health and safety plan for all work to be performed pursuant to the abatement plan;

(6) A schedule for all Stage 1 abatement plan activities, including the submission of summary quarterly progress reports, and the submission, for approval by the secretary, of a detailed final site investigation report; and

(7) Any additional information that may be required to design and perform an adequate site investigation.

D. Stage 2 Abatement Plan: Any responsible person shall submit a Stage 2 abatement plan proposal to the secretary for approval within sixty (60) days, or up to one hundred and twenty (120) days for good cause shown, after approval by the secretary of the final site investigation report prepared pursuant to Stage 1 of the abatement plan.

E. The purpose of Stage 2 of the abatement plan shall be to select and design, if necessary, an abatement option that, when implemented, will result in attainment of the abatement standards and requirements set forth in Section 20.6.2.4103 NMAC, including post-closure maintenance activities. Stage 2 of the abatement plan should include, at a minimum, the following information:

(1) Brief description of the current situation at the site;

(2) Development and assessment of abatement options;

(3) Description, justification and design, if necessary, of preferred abatement option;

(4) Modification, if necessary, of the monitoring program approved pursuant to Stage 1 of the abatement plan, including the designation of pre and post abatement-completion sampling stations and sampling frequencies to be used to demonstrate compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC;

(5) Site maintenance activities, if needed, proposed to be performed after termination of abatement activities;

(6) A schedule for the duration of abatement activities, including the submission of summary quarterly progress reports;

(7) A public notification proposal designed to satisfy the requirements of Subsections B and C of Sections 20.6.2.4108 and 20.6.2.4108 NMAC; and

(8) Any additional information that may be reasonably required to select, describe, justify and design an effective abatement option.

[12-1-95; 20.6.2.4106 NMAC - Rn, 20 NMAC 6.2.IV.4106, 1-15-01]

20.6.2.4107 OTHER REQUIREMENTS:

A. Any responsible person shall allow any authorized representative of the secretary to:

(1) upon presentation of proper credentials, enter the facility at reasonable times;

(2) inspect and copy records required by an abatement plan;

(3) inspect any treatment works, monitoring and analytical equipment;

(4) sample any wastes, ground water, surface water, stream sediment, plants, animals, or vadose-zone material including vadose-zone vapor;

(5) use monitoring systems and wells under such responsible person's control in order to collect samples of any media listed in Paragraph (4) of Subsection A of this section; and

(6) gain access to off-site property not owned or controlled by such responsible person, but accessible to such responsible person through a third-party access agreement, provided that it is allowed by the agreement.

B. Any responsible person shall provide the secretary, or a representative of the secretary, with at least four (4) working days advance notice of any sampling to be performed pursuant to an abatement plan, or any well plugging, abandonment or destruction at any facility where an abatement plan has been required.

C. Any responsible person wishing to plug, abandon or destroy a monitoring or water supply well within the perimeter of the 3-dimensional body where the standards set forth in Subsection B of Section 20.6.2.4103 NMAC are exceeded, at any facility where an abatement plan has been required, shall propose such action by certified mail to the secretary for approval, unless such approval is required from the State Engineer. The proposed action shall be designed to prevent water pollution that could result from water contaminants migrating through the well or borehole. The proposed action shall not take place without written approval from the secretary, unless written approval or disapproval is not received by the responsible person within thirty (30) days of the date of receipt of the proposal.

[12-1-95; 20.6.2.4107 NMAC - Rn, 20 NMAC 6.2.IV.4107, 1-15-01]

20.6.2.4108 PUBLIC NOTICE AND PARTICIPATION:

A. Within thirty (30) days of filing of a Stage 1 abatement plan proposal, the secretary shall issue a news release summarizing:

(1) the source, extent, magnitude and significance of water pollution, as known at that time;

(2) the proposed Stage 1 abatement plan investigation; and

(3) the name and telephone number of an agency contact who can provide additional information.

B. Within thirty (30) days of filing of a Stage 2 abatement plan proposal, or proposed significant modification of Stage 2 of the abatement plan, any responsible person shall provide to the secretary proof of public notice of the abatement plan to the following persons:

(1) the public, who shall be notified through publication of a notice in newspapers of general circulation in this state and in the county where the abatement will occur and, in areas with large percentages of non-English speaking people, through the mailing of the public notice in English to a bilingual radio station serving the area where the abatement will occur with a request that it be aired as a public service announcement in the predominant non-English language of the area;

(2) those persons, as identified by the secretary, who have requested notification, who shall be notified by mail;

(3) the New Mexico Trustee for Natural Resources, and any other local, state or federal governmental agency affected, as identified by the secretary, which shall be notified by certified mail;

(4) owners and residents of surface property located inside, and within one (1) mile from, the perimeter of the geographic area where the standards and requirements set forth in Section 20.6.2.4103 NMAC are exceeded who shall be notified by a means approved by the secretary; and

(5) the Governor or President of each Indian Tribe, Pueblo or Nation within the state of New Mexico, as identified by the secretary, who shall be notified by mail.

C. The public notice shall include, as approved in advance by the secretary:

(1) name and address of the responsible person;

(2) location of the proposed abatement;

(3) brief description of the nature of the water pollution and of the proposed abatement action;

(4) brief description of the procedures followed by the secretary in making a final determination;

(5) statement on the comment period;

(6) statement that a copy of the abatement plan can be viewed by the public at the department's main office or at the department field office for the area in which the discharge occurred;

(7) statement that written comments on the abatement plan, and requests for a public meeting or hearing that include the reasons why a meeting or hearing should be held, will be accepted for consideration if sent to the secretary within sixty (60) days after the determination of administrative completeness; and

(8) address and phone number at which interested persons may obtain further information.

D. A public meeting or hearing may be held if the secretary determines there is significant public interest. Notice of the time and place of the meeting or hearing shall be given at least thirty (30) days prior to the meeting or hearing pursuant to Subsections A and B above. The secretary may appoint a meeting facilitator or hearing officer. The secretary may require the responsible person to prepare for approval by the secretary a fact sheet, to be distributed at the public meeting or hearing and afterwards upon request, written in English and Spanish, describing site history, the nature and extent of water pollution, and the proposed abatement. The record of the meeting or hearing, requested under this Section, consists of a tape recorded or transcribed session, provided that the cost of a court recorder shall be paid by the person requesting the transcript. If requested by the secretary, the responsible person will provide a translator approved by the secretary at a public meeting or hearing conducted in a locale where testimony from non-English speaking people can reasonably be expected. At the meeting or hearing, all interested persons shall be given a reasonable chance to submit data, views or arguments orally or in writing, and to ask questions of the secretary or the secretary's designee and of the responsible person, or their authorized representatives.

[12-1-95; 20.6.2.4108 NMAC - Rn, 20 NMAC 6.2.IV.4108, 1-15-01]

20.6.2.4109 SECRETARY APPROVAL OR NOTICE OF DEFICIENCY OF SUBMITTALS:

A. The secretary shall, within sixty (60) days of receiving a Stage 1 abatement plan proposal, a site investigation report, a technical infeasibility demonstration, or an abatement completion report, approve the document, or notify the responsible person of the document's deficiency, based upon the information available.

B. The secretary shall, within thirty (30) days of receiving a fact sheet, approve or notify the responsible person of the document's deficiency, based upon the information available.

C. If no public meeting or hearing is held pursuant to Subsection D of Section 20.6.2.4108 NMAC, then the secretary shall, within ninety (90) days of receiving a Stage 2 abatement plan proposal, approve the plan, or notify the responsible person of the plan's deficiency, based upon the information available.

D. If a public meeting or hearing is held pursuant to Subsection D of Section 20.6.2.4108, then the secretary shall, within sixty (60) days of receipt of all required information, approve Stage 2 of the abatement plan proposal, or notify the responsible person of the plan's deficiency, based upon the information contained in the plan and information submitted at the meeting or hearing.

E. If the secretary notifies a responsible person of any deficiencies in a site investigation report, or in a Stage 1 or Stage 2 abatement plan proposal, the responsible person shall submit a modified document to cure the deficiencies specified by the secretary within thirty (30) days of receipt of the notice of deficiency. The responsible person shall be in violation of Sections 20.6.2.4000 through 20.6.2.4115 NMAC if he fails to submit a modified document within the required time, or if the modified document does not make a good faith effort to cure the deficiencies specified by the secretary.

F. Provided that the other requirements of this Part are met and provided further that Stage 2 of the abatement plan, if implemented, will result in the standards and requirements set forth in Section 20.6.2.4103 NMAC being met within a schedule that is reasonable given the particular circumstances of the site, the secretary shall approve the plan.

[12-1-95; 20.6.2.4109 NMAC - Rn, 20 NMAC 6.2.IV.4109, 1-15-01]

20.6.2.4110 INVESTIGATION AND ABATEMENT: Any responsible person who receives approval for Stage 1 and/or Stage 2 of an abatement plan shall conduct all investigation, abatement, monitoring and reporting activity in full compliance with Sections 20.6.2.4000 through 20.6.2.4115 NMAC and according to the terms and schedules contained in the approved abatement plans.

[12-1-95; 20.6.2.4110 NMAC - Rn, 20 NMAC 6.2.IV.4110, 1-15-01]

20.6.2.4111 ABATEMENT PLAN MODIFICATION:

A. Any approved abatement plan may be modified, at the written request of the responsible person, in accordance with Sections 20.6.2.4000 through 20.6.2.4115 NMAC, and with written approval of the secretary.

B. If data submitted pursuant to any monitoring requirements specified in the approved abatement plan or other information available to the secretary indicates that the abatement action is ineffective, or is creating unreasonable injury to or interference with health, welfare, environment or property, the secretary may require a responsible person to modify an abatement plan within the shortest reasonable time so as to effectively abate water pollution which exceeds the standards and requirements set forth in Section 20.6.2.4103 NMAC, and to abate and prevent unreasonable injury to or interference with health, welfare, environment or property.

[12-1-95; 20.6.2.4111 NMAC - Rn, 20 NMAC 6.2.IV.4111, 1-15-01]

20.6.2.4112 COMPLETION AND TERMINATION:

A. Abatement shall be considered complete when the standards and requirements set forth in Section 20.6.2.4103 NMAC are met. At that time, the responsible person shall submit an abatement completion report, documenting compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC, to the secretary for approval. The abatement completion report also shall propose any changes to long term monitoring and site maintenance activities, if needed, to be performed after termination of the abatement plan.

B. Provided that the other requirements of this Part are met and provided further that the standards and requirements set forth in Section 20.6.2.4103 NMAC have been met, the secretary shall approve the abatement completion report. When the secretary approves the abatement completion report, he shall also notify the responsible person in writing that the abatement plan is terminated.

[12-1-95; 20.6.2.4112 NMAC - Rn, 20 NMAC 6.2.IV.4112, 1-15-01]

20.6.2.4113 DISPUTE RESOLUTION: In the event of any technical dispute regarding the requirements of Paragraph (9) of Subsection A and Subsection E of Section 20.6.2.1203, Sections 20.6.2.4103, 20.6.2.4105, 20.6.2.4106, 20.6.2.4111 or 20.6.2.4112 NMAC, including notices of deficiency, the responsible person may notify the secretary by certified mail that a dispute has arisen, and desires to invoke the dispute resolution provisions of this Section, provided that such notification must be made within thirty (30) days after receipt by the responsible person of the decision of the secretary that causes the dispute. Upon such notification, all deadlines affected by the technical dispute shall be extended for a thirty (30) day negotiation period, or for a maximum of sixty (60) days if approved by the secretary for good cause shown. During this negotiation period, the secretary or his/her designee and the responsible person shall meet at least once. Such meeting(s) may be facilitated by a mutually agreed upon third party, but the third party shall assume no power or authority granted or delegated to the secretary by the Water Quality Act or by the commission. If the dispute remains unresolved after the negotiation period, the decision of secretary shall be final.

[12-1-95; 20.6.2.4113 NMAC - Rn, 20 NMAC 6.2.IV.4113, 1-15-01]

20.6.2.4114 APPEALS FROM SECRETARY'S DECISIONS:

A. If the secretary determines that an abatement plan is required pursuant to Paragraph (9) of Subsection A of 20.6.2.1203, Paragraph (4) of Subsection E of 20.6.2.3109, or Subsection B of 20.6.2.4105 NMAC, approves or provides notice of deficiency of a proposed abatement plan, technical infeasibility demonstration or abatement completion report, or modifies or terminates an approved abatement plan, he shall provide written notice of such action by certified mail to the responsible person and any person who participated in the action.

B. Any person who participated in the action before the secretary and who is adversely affected by the action listed in Subsection A of 20.6.2.4114 NMAC may file a petition requesting a review before the commission.

C. The petition shall be made in writing to the commission and shall be filed with the commission's secretary within thirty (30) days after receiving notice of the secretary's action. The petition shall specify the portions of the action to which the petitioner objects, certify that a copy of the petition has been mailed or hand-delivered to the secretary, and to the applicant or permittee if the petitioner is not the applicant or permittee, and attach a copy of the action for which review is sought. Unless a timely petition for hearing is made, the secretary's action is final.

D. The proceedings before the commission shall be conducted as provided in the commission's adjudicatory procedures, 20 NMAC 1.3.

E. The cost of the court reporter for the hearing shall be paid by the petitioner.

F. The appeal provisions do not relieve the owner, operator or responsible person of their obligations to comply with any federal or state laws or regulations.

[12-1-95, 11-15-96; 20.6.2.4114 NMAC - Rn, 20 NMAC 6.2.IV.4114, 1-15-01; A, 7-16-06]

20.6.2.4115 COURT REVIEW OF COMMISSION DECISIONS: Court review of commission decisions shall be as provided by law.

[12-1-95; 20.6.2.4115 NMAC - Rn, 20 NMAC 6.2.IV.4115, 1-15-01]

20.6.2.4116 - 20.6.2.4999: [RESERVED]

[12-1-95; 20.6.2.4116 - 20.6.2.4999 NMAC - Rn, 20 NMAC 6.2.IV.4116-5100, 1-15-01]

20.6.2.5000 UNDERGROUND INJECTION CONTROL:

[12-1-95; 20.6.2.5000 NMAC - Rn, 20 NMAC 6.2.V, 1-15-01]

20.6.2.5001 PURPOSE: The purpose of 20.6.2.5000 through 20.6.2.5399 NMAC controlling discharges from underground injection control wells is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow for uses designated in the New Mexico water quality standards. 20.6.2.5000 through 20.6.2.5399 NMAC include notification requirements, and requirements for discharges directly into the subsurface through underground injection control wells.

[20.6.2.5001 NMAC - N, 12-1-01; A, 8-31-15]

20.6.2.5002 UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

A. Underground injection control wells include the following.

(1) Any dug hole or well that is deeper than its largest surface dimension, where the principal function of the hole is emplacement of fluids.

(2) Any septic tank or cesspool used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste.

(3) Any subsurface distribution system, cesspool or other well which is used for the injection of wastes.

B. Underground injection control wells are classified as follows:

(1) Class I wells inject fluids beneath the lowermost formation that contains 10,000 milligrams per liter or less TDS. Class I hazardous or radioactive waste injection wells inject fluids containing any hazardous or radioactive waste as defined in 74-4-3 and 74-4A-4 NMSA 1978 or 20.4.1.200 NMAC (incorporating 40 C.F.R. Section 261.3), including any combination of these wastes. Class I non-hazardous waste injection wells inject non-hazardous and non-radioactive fluids, and they inject naturally-occurring radioactive material (NORM) as provided by 20.3.1.1407 NMAC.

(2) Class II wells inject fluids associated with oil and gas recovery;

(3) Class III wells inject fluids for extraction of minerals or other natural resources, including sulfur, uranium, metals, salts or potash by in situ extraction. This classification includes only in situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.

(4) Class IV wells inject fluids containing any radioactive or hazardous waste as defined in 74-4-3 and 74-4A-4 NMSA 1978, including any combination of these wastes, above or into a formation that contains 10,000 mg/l or less TDS.

(5) Class V wells inject a variety of fluids and are those wells not included in Class I, II, III or IV. Types of Class V wells include, but are not limited to, the following:

(a) domestic liquid waste injection wells:

(i) domestic liquid waste disposal wells used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC through subsurface fluid distribution systems or vertical wells;

(ii) septic system wells used to emplace liquid waste volumes greater than that regulated by 20.7.3 NMAC into the subsurface, which are comprised of a septic tank and subsurface fluid distribution system;

(iii) large capacity cesspools used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC, including drywells that sometimes have an open bottom or perforated sides;

(b) industrial waste injection wells:

(i) air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling;

(ii) dry wells used for the injection of wastes into a subsurface formation;

(iii) geothermal energy injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electrical power;

(iv) stormwater drainage wells used to inject storm runoff from the surface into the subsurface;

(v) motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities;

(vi) car wash waste disposal wells used to inject fluids from motor vehicle washing activities;

(c) mining injection wells:

(i) stopes leaching wells used for solution mining of conventional mines;

(ii) brine injection wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;

(iii) backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether water injected is a radioactive waste or not;

(iv) injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale;

(d) ground water management injection wells:

(i) ground water remediation injection wells used to inject contaminated ground water that has been treated to ground water quality standards;

(ii) in situ ground water remediation wells used to inject a fluid that facilitates vadose zone or ground water remediation.

(iii) recharge wells used to replenish the water in an aquifer, including use to reclaim or improve the quality of existing ground water;

(iv) barrier wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality;

(v) subsidence control wells (not used for purposes of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

(vi) wells used in experimental technologies;

(e) agricultural injection wells - drainage wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality.

[20.6.2.5002 NMAC - N, 12-1-01; A, 8-1-14; A, 8-31-15]

20.6.2.5003 NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS: All operators of underground injection control wells, except those wells regulated under the Oil and Gas Act, the Geothermal Resources Conservation Act, and the Surface Mining Act, shall:

A. for existing underground injection control wells, submit to the secretary the information enumerated in Subsection C of 20.6.2.1201 NMAC of this part; provided, however, that if the information in Subsection C of 20.6.2.1201 NMAC has been previously submitted to the secretary and acknowledged by him, the information need not be resubmitted; and

B. operate and continue to operate in conformance with 20.6.2.1 through 20.6.2.5399 NMAC;

C. for new underground injection control wells, submit to the secretary the information enumerated in Subsection C of 20.6.2.1201 NMAC of this part at least 120 days prior to well construction.
[9-20-82, 12-1-95; 20.6.2.5300 NMAC - Rn, 20 NMAC 6.2.V.5300, 1-15-01; 20.6.2.5003 NMAC - Rn, 20.6.2.5300 NMAC, 12-1-01; A, 12-1-01; A, 9-15-02; A, 8-31-15]

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells.

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in 20.6.2.5300 through 20.6.2.5399 NMAC or this subsection.

(a) Class I radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Paragraph (1) of Subsection B of 20.6.2.5002 NMAC.

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the environmental protection agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20.7.10 NMAC), adopted by the environmental improvement board under the Environmental Improvement Act or the standard of 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with 20.6.2.5005 and 20.6.2.5209 NMAC.
[20.6.2.5004 NMAC - N, 12-1-01; A, 8-31-15]

20.6.2.5005 PRE-CLOSURE NOTIFICATION AND CLOSURE REQUIREMENTS:

A. Any person proposing to close a Class I, III, IV or V underground injection control well must submit pre-closure notification to the department at least 30 days prior to closure. Pre-closure notification must include the following information:

(1) Name of facility.
(2) Address of facility.
(3) Name of Owner/Operator.
(4) Address of Owner/Operator.
(5) Contact Person.
(6) Phone Number.
(7) Type of Well(s).
(8) Number of Well(s).
(9) Well Construction (e.g. drywell, improved sinkhole, septic tank, leachfield, cesspool, other...).
(10) Type of Discharge.
(11) Average Flow (gallons per day).
(12) Year of Well Construction.

(13) Proposed Well Closure Activities (e.g. sample fluids/sediment, appropriate disposal of remaining fluids/sediments, remove well and any contaminated soil, clean out well, install permanent plug, conversion to other type well, ground water and vadose zone investigation, other).

(14) Proposed Date of Well Closure.

(15) Name of Preparer.

(16) Date.

B. Proposed well closure activities must be approved by the department prior to implementation.

[20.6.2.5005 NMAC - N, 12-1-01]

20.6.2.5006 DISCHARGE PERMIT REQUIREMENTS FOR CLASS V INJECTION WELLS: Class V injection wells must meet the requirements of Sections 20.6.2.3000 through 20.6.2.3999 NMAC and Sections 20.6.2.5000 through 20.6.2.5006 NMAC.

[20.6.2.5006 NMAC - N, 12-1-01]

20.6.2.5007 - 20.6.2.5100: [RESERVED]

[12-1-95; 20.6.2.5001 - 20.6.2.5100 NMAC - Rn, 20 NMAC 6.2.IV.4116-5100, 1-15-01; 20.6.2.5007 -20.6.2.5100 NMAC - Rn 20.6.2.5001 - 20.6.2.5100 NMAC, 12-1-01]

20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I WELLS AND CLASS III WELLS:

A. Class I wells and Class III wells must meet the requirements of 20.6.2.5000 through 20.6.2.5399 NMAC in addition to other applicable requirements of the commission regulations. The secretary may also require that some Class IV and Class V wells comply with the requirements for Class I wells in 20.6.2.5000 through 20.6.2.5399 NMAC if the secretary determines that the additional requirements are necessary to prevent the movement of water contaminants from a specified injection zone into ground water having 10,000 mg/l or less TDS. No Class I well or Class III well may be approved which allows for movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to 20.6.2.5103 NMAC, or pursuant to a temporary designation as provided in Paragraph (2) of Subsection C of 20.6.2.5101 NMAC.

B. Operation of a Class I well or Class III well must be pursuant to a discharge permit meeting the requirements of 20.6.2.3000 through 20.6.2.3999 NMAC and 20.6.2.5000 through 20.6.2.5399 NMAC.

C. Discharge permits for Class I wells, or Class III wells affecting ground water of 10,000 mg/l or less TDS submitted for secretary approval shall:

(1) receive an aquifer designation if required in 20.6.2.5103 NMAC prior to discharge permit issuance; or

(2) for Class III wells only, address the methods or techniques to be used to restore ground water so that upon final termination of operations including restoration efforts, ground water at any place of withdrawal for present or reasonably foreseeable future use will not contain either concentrations in excess of the standards of 20.6.2.3103 NMAC or any toxic pollutant; issuance of a discharge permit or project discharge permit for Class III wells that provides for restoration of ground water in accordance with the requirements of this subsection shall substitute for the aquifer designation provisions of 20.6.2.5103 NMAC; the approval shall constitute a temporary aquifer designation for a mineral bearing or producing aquifer, or portion thereof, to allow injection as provided for in the discharge permit; such temporary designation shall expire upon final termination of operations including restoration efforts.

D. The exemptions from the discharge permit requirement listed in 20.6.2.3105 NMAC do not apply to underground injection control wells except as provided below:

(1) wells regulated by the oil conservation division under the exclusive authority granted under Section 70-2-12 NMSA 1978 or under other sections of the "Oil and Gas Act";

(2) wells regulated by the oil conservation division under the "Geothermal Resources Act";

(3) wells regulated by the New Mexico coal surface mining bureau under the "Surface Mining Act";

(4) wells for the disposal of effluent from systems which are regulated under the "Liquid Waste Disposal and Treatment" regulations (20.7.3 NMAC) adopted by the environmental improvement board under the "Environmental Improvement Act".

E. Project permits for Class III wells.

(1) The secretary may consider a project discharge permit for Class III wells, if the wells are:

(a) within the same well field, facility site or similar unit;

(b) within the same aquifer and ore deposit;

(c) of similar construction;

(d) of the same purpose; and

(e) operated by a single owner or operator.

(2) A project discharge permit does not allow the discharger to commence injection in any individual operational area until the secretary approves an application for injection in that operational area (operational area approval).

(3) A project discharge permit shall:

(a) specify the approximate locations and number of wells for which operational area approvals are or will be sought with approximate time frames for operation and restoration (if restoration is required) of each area; and

(b) provide the information required under the following sections of this part, except for such additional site-specific information as needed to evaluate applications for individual operational area approvals: Subsection C of 20.6.2.3106, 20.6.2.3107, 20.6.2.5204 through 20.6.2.5209, and Subsection B of 20.6.2.5210 NMAC.

(4) Applications for individual operational area approval shall include the following:

(a) site-specific information demonstrating that the requirements of this part are met; and

(b) information required under 20.6.2.5202 through 20.6.2.5210 NMAC and not previously provided pursuant to Subparagraph (b) of Paragraph (3) of Subsection E of this section.

(5) Applications for project discharge permits and for operational area approval shall be processed in accordance with the same procedures provided for discharge permits under 20.6.2.3000 through 20.6.2.3114 NMAC, allowing for public notice on the project discharge permit and on each application for operational area approval pursuant to 20.6.2.3108 NMAC with opportunity for public hearing prior to approval or disapproval.

(6) The discharger shall comply with additional requirements that may be imposed by the secretary pursuant to this part on wells in each new operational area.

F. If the holder of a discharge permit for a Class I well, or Class III well submits an application for discharge permit renewal at least 120 days before discharge permit expiration, and the discharger is in compliance with his discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

G. Discharge permit signatory requirements: No discharge permit for a Class I well or Class III well may be issued unless:

(1) the application for a discharge permit has been signed as follows:

(a) for a corporation: by a principal executive officer of at least the level of vice-president, or a representative who performs similar policy-making functions for the corporation who has authority to sign for the corporation; or

(b) for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(c) for a municipality, state, federal, or other public agency: by either a principal executive officer who has authority to sign for the agency, or a ranking elected official; and

(2) all reports required by Class I hazardous waste injection well permits and other information requested by the director pursuant to a Class I hazardous waste injection well permit shall be signed by a person described in Paragraph (1) of this subsection, or by a duly authorized representative of that person; a person is a duly authorized representative only if:

(a) the authorization is made in writing by a person described in Paragraph (1) of this subsection;

(b) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility; (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(c) the written authorization is submitted to the director.

(3) *Changes to authorization.* If an authorization under Paragraph (2) of this subsection is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Paragraph (2) of this subsection must be submitted to the director prior to or together with any reports, information, or applications to be signed by an authorized representative.

(4) The signature on an application, report or other information requested by the director must be directly preceded by the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

H. Transfer of Class I non-hazardous waste injection well and Class III well discharge permits.

(1) The transfer provisions of 20.6.2.3111 NMAC do not apply to a discharge permit for a Class I non-hazardous waste injection well or Class III well.

(2) A Class I non-hazardous waste injection well or Class III well discharge permit may be transferred if:

(a) the secretary receives written notice 30 days prior to the transfer date; and

(b) the secretary does not object prior to the proposed transfer date; the secretary may require modification of the discharge permit as a condition of transfer, and may require demonstration of adequate financial responsibility.

(3) The written notice required by Subparagraph (a) of Paragraph (2) of Subsection H above shall:

(a) have been signed by the discharger and the succeeding discharger, including an acknowledgement that the succeeding discharger shall be responsible for compliance with the discharge permit upon taking possession of the facility; and

(b) set a specific date for transfer of discharge permit responsibility, coverage and liability; and

(c) include information relating to the succeeding discharger's financial responsibility required by Paragraph (17) of Subsection B of 20.6.2.5210 NMAC.

I. Modification or termination of a discharge permit for a Class I well or Class III well: If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicate that this part are being or may be violated, the secretary may require modification or, if it is determined by the secretary that the modification may not be adequate, may terminate a discharge permit for a Class I well, or Class III well or well field, that was approved pursuant to the requirements of this under 20.6.2.5000 through 20.6.2.5399 NMAC for the following causes:

(1) noncompliance by the discharger with any condition of the discharge permit; or

(2) the discharger's failure in the discharge permit application or during the discharge permit review process to disclose fully all relevant facts, or the discharger's misrepresentation of any relevant facts at any time; or

(3) a determination that the permitted activity may cause a hazard to public health or undue risk to property and can only be regulated to acceptable levels by discharge permit modification or termination.

[9-20-82, 12-1-95, 11-15-96; 20.6.2.5101 NMAC - Rn, 20 NMAC 6.2.V.5101, 1-15-01; A, 12-1-01; A, 9-15-02; A, 8-1-14; A, 8-31-15]

20.6.2.5102 PRE-CONSTRUCTION REQUIREMENTS FOR CLASS I WELLS AND CLASS III WELLS:

A. Discharge permit requirement for Class I wells.

(1) Prior to construction of a Class I well or conversion of an existing well to a Class I well, an approved discharge permit is required that incorporates the requirements of 20.6.2.5000 through 20.6.2.5399 NMAC, except Subsection C of 20.6.2.5210 NMAC. As a condition of discharge permit issuance, the operation of the Class I well under the discharge permit will not be authorized until the secretary has:

(a) reviewed the information submitted for his consideration pursuant to Subsection C of 20.6.2.5210 NMAC; and

(b) determined that the information submitted demonstrates that the operation will be in compliance with this part and the discharge permit.

(2) If conditions encountered during construction represent a substantial change which could adversely impact ground water quality from those anticipated in the discharge permit, the secretary shall require a discharge permit modification or may terminate the discharge permit pursuant to Subsection I of 20.6.2.5101 NMAC, and the secretary shall publish public notice and allow for comments and hearing in accordance with 20.6.2.3108 NMAC.

B. Notification requirement for Class III wells.

(1) The discharger shall notify the secretary in writing prior to the commencement of drilling or construction of wells which are expected to be used for in situ extraction, unless the discharger has previously received a discharge permit or project discharge permit for the Class III well operation.

(a) Any person proposing to drill or construct a new Class III well or well field, or convert an existing well to a Class III well, shall file plans, specifications and pertinent documents regarding such construction or conversion, with the ground water quality bureau of the environment department.

(b) Plans, specifications, and pertinent documents required by this section, if pertaining to geothermal installations, carbon dioxide facilities, or facilities for the exploration, production, refinement or pipeline transmission of oil and natural gas, shall be filed instead with the oil conservation division.

(c) Plans, specifications and pertinent documents required to be filed under this section must be filed 90 days prior to the planned commencement of construction or conversion.

(d) The following plans, specifications and pertinent documents shall be provided with the notification:

(i) information required in Subsection C of 20.6.2.3106 NMAC;

(ii) a map showing the Class III wells which are to be constructed; the map must also show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, that are within the expected area of review (20.6.2.5202 NMAC) of the Class III well or well field perimeter;

(iii) maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within one mile of the site, the position of such ground water within this area relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(iv) maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(v) the proposed formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation;

(vi) the proposed stimulation program;

(vii) the proposed injection procedure;

(viii) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(ix) proposed construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(x) information, as described in Paragraph (17) of Subsection B of 20.6.2.5210 NMAC, showing the ability of the discharger to undertake measures necessary to prevent groundwater contamination; and

(xi) a plugging and abandonment plan showing that the requirements of Subsections B, C and D of 20.6.2.5209 NMAC will be met.

(2) Prior to construction, the discharger shall have received written notice from the secretary that the information submitted under item 10 of Subparagraph (d) of Paragraph (1) of Subsection B of 20.6.2.5102 NMAC is acceptable. Within 30 days of submission of the above information the secretary shall notify the discharger that the information submitted is acceptable or unacceptable.

(3) Prior to construction, the secretary shall review said plans, specifications and pertinent documents and shall comment upon their adequacy of design for the intended purpose and their compliance with pertinent sections of this part. Review of plans, specifications and pertinent documents shall be based on the criteria contained in 20.6.2.5205, Subsection E of 20.6.2.5209, and Subparagraph (d) of Paragraph (1) of Subsection B of 20.6.2.5102 NMAC.

(4) Within 30 days of receipt, the secretary shall issue public notice, consistent with Subsection B of 20.6.2.3108 NMAC, that notification was submitted pursuant to Subsection B of 20.6.2.5102 NMAC. The secretary shall allow a period of at least 30 days during which comments may be submitted. The public notice shall include:

(a) name and address of the proposed discharger;

(b) location of the discharge;

(c) brief description of the proposed activities;

(d) statement of the public comment period; and

(e) address and telephone number at which interested persons may obtain further information.

(5) The secretary shall comment in writing upon the plans and specifications within 60 days of their receipt by the secretary.

(6) Within 30 days after completion, the discharger shall submit written notice to the secretary that the construction or conversion was completed in accordance with submitted plans and specifications, or shall submit as-built plans detailing changes from the originally submitted plans and specifications.

(7) In the event a discharge permit application is not submitted or approved, all wells which may cause groundwater contamination shall be plugged and abandoned by the applicant pursuant to the plugging and abandonment plan submitted in the notification; these measures shall be consistent with any comments made by the secretary in his review. If the wells are not to be permanently abandoned and the discharger demonstrates that plugging at this time is unnecessary to prevent groundwater contamination, plugging pursuant to the notification is not required. Financial responsibility established pursuant to 20.6.2.5000 through 20.6.2.5299 NMAC will remain in effect until the discharger permanently abandons and plugs the wells in accordance with the plugging and abandonment plan.
[9-20-82, 12-24-87, 12-1-95; 20.6.2.5102 NMAC - Rn, 20 NMAC 6.2.V.5102, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5103 DESIGNATED AQUIFERS FOR CLASS I WELLS AND CLASS III WELLS:

A. Any person may file a written petition with the secretary seeking commission consideration of certain aquifers or portions of aquifers as "designated aquifers". The purpose of aquifer designation is:

(1) for Class I wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS; or

(2) for Class III wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS, and not provide for restoration or complete restoration of that ground water pursuant to Paragraph (2) of Subsection C of 20.6.2.5101 NMAC.

B. The applicant shall identify (by narrative description, illustrations, maps or other means) and describe such aquifers, in geologic and geometric terms (such as vertical and lateral limits and gradient) which are clear and definite.

C. An aquifer or portion of an aquifer may be considered for aquifer designation under Subsection A of this section, if the applicant demonstrates that the following criteria are met:

(1) it is not currently used as a domestic or agricultural water supply; and

(2) there is no reasonable relationship between the economic and social costs of failure to designate and benefits to be obtained from its use as a domestic or agricultural water supply because:

(a) it is situated at a depth or location which makes recovery of water for drinking or agricultural purposes economically or technologically impractical at present and in the reasonably foreseeable future; or

(b) it is already so contaminated that it would be economically or technologically impractical to render that water fit for human consumption or agricultural use at present and in the reasonably foreseeable future.

D. The petition shall state the extent to which injection would add water contaminants to ground water and why the proposed aquifer designation should be approved. For Class III wells, the applicant shall state whether and to what extent restoration will be carried out.

E. The secretary shall either transmit the petition to the commission within 60 recommending that a public hearing be held, or refuse to transmit the petition and notify the applicant in writing citing reasons for such refusal.

F. If the secretary transmits the petition to the commission, the commission shall review the petition and determine to either grant or deny a public hearing on the petition. If the commission grants a public hearing, it shall issue a public notice, including the following information:

(1) name and address of the applicant;

(2) location, depth, TDS, areal extent, general description and common name or other identification of the aquifer for which designation is sought;

(3) nature of injection and extent to which the injection will add water contaminants to ground water; and

(4) address and telephone number at which interested persons may obtain further information.

G. If the secretary refuses to transmit the petition to the commission, then the applicant may appeal the secretary's disapproval of the proposed aquifer designation to the commission within 30 days, and address the issue of whether the proposed aquifer designation meets the criteria of Subsections A, B, C, and D of this section.

H. If the commission grants a public hearing, the hearing shall be held in accordance with the provisions of Section 74-6-6 NMSA 1978.

I. If the commission does not grant a public hearing on the petition, the aquifer designation shall not be approved.

J. After public hearing and consideration of all facts and circumstances included in Section 74-6-4(D) NMSA 1978, the commission may authorize the secretary to approve a proposed designated aquifer if the commission determines that the criteria of Subsections A, B, C, and D of this section are met.

K. Approval of a designated aquifer petition does not alleviate the applicant from complying with other sections of 20.6.2.5000 through 20.6.2.5399 NMAC, or of the responsibility for protection, pursuant to this part, of other nondesignated aquifers containing ground water having 10,000 mg/l or less TDS.

L. Persons other than the petitioner may add water contaminants as a result of injection into an aquifer designated for injection, provided the person receives a discharge permit pursuant to the requirements of 20.6.2.5000 through 20.6.2.5399 NMAC. Persons, other than the original petitioner or his designee, requesting addition of water contaminants as a result of injection into aquifers previously designated only for injection with partial restoration shall file a petition with the commission pursuant to the requirements of Subsections A, B, C, and D of this section.

[9-20-82, 12-1-95; 20.6.2.5103 NMAC - Rn, 20 NMAC 6.2.V.5103, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5104 WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I WELLS AND CLASS III WELLS:

A. Where a Class I well or a Class III well or well field, does not penetrate, or inject into or above, and which will not affect, ground water having 10,000 mg/l of less TDS, the secretary may:

(1) issue a discharge permit for a well or well field with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required by 20.6.2.5000 through 20.6.2.5399 NMAC; or

(2) for Class III wells only, issue a discharge permit pursuant to the requirements of 20.6.2.3000 through 20.6.2.3114 NMAC.

B. Authorization of a reduction in requirements under Subsection A of this section shall be granted only if injection will not result in an increased risk of movement of fluids into ground water having 10,000 mg/l or less TDS, except for fluid movement approved pursuant to 20.6.2.5103 NMAC.

[9-20-82, 12-1-95; 20.6.2.5104 NMAC - Rn& A, 20 NMAC 6.2.V.5104, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5105 - 20.6.2.5199: [RESERVED]

[12-1-95; 20.6.2.5105 - 20.6.2.5199 NMAC - Rn, 20 NMAC 6.2.V.5105-5199, 1-15-01]

20.6.2.5200 TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I WELLS AND CLASS III WELLS:

[12-1-95; 20.6.2.5200 NMAC - Rn, 20 NMAC 6.2.V.5200, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5201 PURPOSE: 20.6.2.5200 through 20.6.2.5210 NMAC provide the technical criteria and performance standards for Class I wells and Class III wells. (20.6.2.5300 through 20.6.2.5399 NMAC provide certain additional technical and performance standards for Class I hazardous waste injection wells.)

[9-20-82; 20.6.2.5201 NMAC - Rn, 20 NMAC 6.2.V.5201, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5202 AREA OF REVIEW:

A. The area of review is the area surrounding a Class I non-hazardous waste injection well or Class III well or the area within and surrounding a well field that is to be examined to identify possible fluid conduits, including the location of all known wells and fractures which may penetrate the injection zone.

B. The area of review for each Class I non-hazardous waste injection well, or each Class III well or well field shall be an area which extends:

(1) two and one half (2 1/2) miles from the well, or well field; or

(2) one-quarter (1/4) mile from a well or well field where the area of review is calculated to be zero pursuant to Paragraph (3) of Subsection B below, or where the well field production at all times exceeds injection to produce a net withdrawal; or

(3) a suitable distance, not less than one-quarter (1/4) mile, proposed by the discharger and approved by the secretary, based upon a mathematical calculation to determine the area of review; computations to determine the area of review may be based upon the parameters listed below and should be calculated for an injection time period equal to the expected life of the Class I non-hazardous waste injection well, or Class III well or well field; the following modified Theis equation illustrates one form which the mathematical model may take to compute the area of review; the discharger must demonstrate that any equation or simulation used to compute the area of review applies to the hydrogeologic conditions in the area of review.

$$r = \left(\frac{2.25KHt}{S10} \right)^{1/2}$$

Where:

$$x = \frac{4BKH\,(H_w - H_{bo})x\,S_pG_b}{2.3\,Q}$$

r = Radius of the area of review for a Class I non-hazardous waste injection well or Class III well (length)

K = Hydraulic conductivity of the injection zone (length/time)

H = Thickness of the injection zone (length)

t = Time of injection (time)

S = Storage coefficient (dimensionless)

Q = Injection rate (volume/time)

H_{bo} = Observed original hydrostatic head of injection zone (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS

H_w = Hydrostatic head of underground source of drinking water (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS

S_pG_b = Specific gravity of fluid in the injection zone (dimensionless)

B = 3.142 (dimensionless)

(4) The above equation is based on the following assumptions:

(a) the injection zone is homogenous and isotropic;

(b) the injection zone has infinite areal extent;

(c) the Class I non-hazardous waste injection well or Class III well penetrates the entire thickness of the injection zone;

(d) the well diameter is infinitesimal compared to "r" when injection time is longer than a few minutes; and

(e) the emplacement of fluid into the injection zone creates an instantaneous increase in pressure.

C. The secretary shall require submittal by the discharger of information regarding the area of review including the information to be considered by the secretary in Subsection B of Section 20.6.2.5210 NMAC.
[9-20-82, 12-1-95; 20.6.2.5202 NMAC - Rn, 20 NMAC 6.2.V.5202, 1-15-01; A, 12-1-01]

20.6.2.5203 CORRECTIVE ACTION FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Persons applying for approval of a Class I non-hazardous waste injection well, or a Class III well or well field shall identify the location of all known wells, drill holes, shafts, stopes and other conduits within the area of review which may penetrate the injection zone, in so far as is known or is reasonably available from the public records. For such wells or other conduits which are improperly sealed, completed, or abandoned, or otherwise provide a pathway for the migration of contaminants, the discharger shall address in the proposed discharge plan such steps or modifications (corrective action) as are necessary to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

B. Prior to operation, or continued operation of a well for which corrective action is required pursuant to Subsections A or D of Section 20.6.2.5203 NMAC, the discharger must demonstrate that:

(1) all required corrective action has been taken; or

(2) injection pressure is to be limited so that pressure in the injection zone does not cause fluid movement through any well or other conduit within the area of review into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC; this pressure limitation may be removed after all required corrective action has been taken.

C. In determining the adequacy of corrective action proposed in the discharge permit application, the following factors will be considered by the secretary:

(1) chemical nature and volume of the injected fluid;

(2) chemical nature of native fluids and by-products of injection;

(3) geology and hydrology;

(4) history of the injection and production operation;
(5) completion and plugging records;
(6) abandonment procedures in effect at the time a well, drill hole, or shaft was abandoned; and
(7) hydraulic connections with waters having 10,000 mg/l or less TDS

D. In the event that, after approval for a Class I non-hazardous waste injection well or Class III well has been granted, additional information is submitted or it is discovered that a well or other conduit within the applicable area of review might allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, the secretary may require action in accordance with Subsection I of Section 20.6.2.5101 and Subsection B Section 20.6.2.5203 NMAC.
[9-20-82, 12-1-95; 20.6.2.5203 NMAC - Rn, 20 NMAC 6.2.V.5203, 1-15-01; A, 12-1-01]

20.6.2.5204 MECHANICAL INTEGRITY FOR CLASS I WELLS AND CLASS III WELLS:

A. A Class I well or Class III well has mechanical integrity if there is no detectable leak in the casing, tubing or packer which the secretary considers to be significant at maximum operating temperature and pressure; and no detectable conduit for fluid movement out of the injection zone through the well bore or vertical channels adjacent to the well bore which the secretary considers to be significant.

B. Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that a Class I well or Class III well has mechanical integrity. The demonstration shall be made through use of the following tests:

(1) for evaluation of leaks:
(a) monitoring of annulus pressure (after an initial pressure test with liquid or gas before operation commences); or
(b) pressure test with liquid or gas;
(2) for determination of conduits for fluid movement:
(a) the results of a temperature or noise log; or
(b) where the nature of the casing used for Class III wells precludes use of these logs, cementing records and an appropriate monitoring program as the secretary may require which will demonstrate the presence of adequate cement to prevent such movement;
(3) other appropriate tests as the secretary may require.

C. The secretary may consider the use by the discharger of equivalent alternative test methods to determine mechanical integrity. The discharger shall submit information on the proposed test and all technical data supporting its use. The secretary may approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. For Class III wells this demonstration may be made by submission of adequate monitoring data after the initial mechanical integrity tests.

D. In conducting and evaluating the tests enumerated in this section or others to be allowed by the secretary, the discharger and the secretary shall apply methods and standards generally accepted in the affected industry. When the discharger reports the results of mechanical integrity tests to the secretary, he shall include a description of the test(s), the method(s) used, and the test results. In making an evaluation, the secretary's review shall include monitoring and other test data submitted since the previous evaluation.
[9-20-82, 12-1-95; 20.6.2.5204 NMAC - Rn, 20 NMAC 6.2.V.5204, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5205 CONSTRUCTION REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. General Construction Requirements Applicable to Class I non-hazardous waste injection wells and Class III wells.

(1) Construction of all Class I non-hazardous waste injection wells and all new Class III wells shall include casing and cementing. Prior to well injection, the discharger shall demonstrate that the construction and operation of:

(a) Class I non-hazardous waste injection wells will not cause or allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC;

(b) Class III wells will not cause or allow movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(2) The construction of each newly drilled well shall be designed for the proposed life expectancy of the well.

(3) In determining if the discharger has met the construction requirements of this section and has demonstrated adequate construction, the secretary shall consider the following factors:

(a) depth to the injection zone;

(b) injection pressure, external pressure, annular pressure, axial loading, and other stresses that may cause well failure;

(c) hole size;

(d) size and grade of all casing strings, including wall thickness, diameter, nominal weight, length, joint specification, and construction material;

(e) type and grade of cement;

(f) rate, temperature, and volume of injected fluid;

(g) chemical and physical characteristics of the injected fluid, including corrosiveness, density, and temperature;

(h) chemical and physical characteristics of the formation fluids including pressure and temperature;

(i) chemical and physical characteristics of the receiving formation and confining zones including lithology and stratigraphy, and fracture pressure; and

(j) depth, thickness and chemical characteristics of penetrated formations which may contain ground water.

(4) To demonstrate adequate construction, appropriate logs and other tests shall be conducted during the drilling and construction of new Class I non-hazardous waste injection wells or Class III wells or during work-over of existing wells in preparation for reactivation or for change to injection use. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the secretary for review prior to well injection. The logs and tests appropriate to each type of injection well shall be based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses.

(a) The discharger shall demonstrate through use of sufficiently frequent deviation checks, or another equivalent method, that a Class I non-hazardous waste injection well or Class III well drilled using a pilot hole then enlarged by reaming or another method, does not allow a vertical avenue for fluid migration in the form of diverging holes created during drilling.

(b) The secretary may require use by the discharger of the following logs to assist in characterizing the formations penetrated and to demonstrate the integrity of the confining zones and the lack of vertical avenues for fluid migration:

(i) for casing intended to protect ground water having 10,000 mg/l or less TDS: resistivity, spontaneous potential, and caliper logs before the casing is installed; and a cement bond, or temperature log after the casing is set and cemented.

(ii) for intermediate and long strings of casing intended to facilitate injection: resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed; and fracture finder or spectral logs; and a cement bond or temperature log after the casing is set and cemented.

(5) In addition to the requirements of Section 20.6.2.5102 NMAC, the discharger shall provide notice prior to commencement of drilling, cementing and casing, well logging, mechanical integrity tests, and any well work-over to allow opportunity for on-site inspection by the secretary or his representative.

B. Additional construction requirements for Class I non-hazardous waste injection wells.

(1) All Class I non-hazardous waste injection wells shall be sited in such a manner that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, ground water having 10,000 mg/l TDS or less except as approved pursuant to Section 20.6.2.5103 NMAC.

(2) All Class I non-hazardous waste injection wells shall be cased and cemented by circulating cement to the surface.

(3) All Class I non-hazardous waste injection wells, except those municipal wells injecting noncorrosive wastes, shall inject fluids through tubing with a packer set in the annulus immediately above the injection zone, or tubing with an approved fluid seal as an alternative. The tubing, packer, and fluid seal shall be designed for the expected length of service.

(a) The use of other alternatives to a packer may be allowed with the written approval of the secretary. To obtain approval, the operator shall submit a written request to the secretary which shall set forth the proposed alternative and all technical data supporting its use. The secretary may approve the request if the alternative method will reliably provide a comparable level of protection to ground water. The secretary may approve an alternative method solely for an individual well or for general use.

(b) In determining the adequacy of the specifications proposed by the discharger for tubing and packer, or a packer alternative, the secretary shall consider the following factors:

(i) depth of setting;

(ii) characteristics of injection fluid (chemical nature or characteristics, corrosiveness, and density);

(iii) injection pressure;

(iv) annular pressure;
(v) rate, temperature and volume of injected fluid; and
(vi) size of casing.

C. Additional construction requirements for Class III wells.

(1) Where injection is into a formation containing ground water having 10,000 mg/l or less TDS, monitoring wells shall be completed into the injection zone and into the first formation above the injection zone containing ground water having 10,000 mg/l or less TDS which could be affected by the extraction operation. If ground water having 10,000 mg/l or less TDS below the injection zone could be affected by the extraction operation, monitoring of such ground water may be required. These wells shall be of sufficient number, located and constructed so as to detect any excursion of injection fluids, process byproducts, or formation fluids outside the extraction area or injection zone. The requirement for monitoring wells in aquifers designated pursuant to Section 20.6.2.5103 NMAC may be waived by the secretary, provided that the absence of monitoring wells does not result in an increased risk of movement of fluids into protected ground waters having 10,000 mg/l or less TDS.

(2) Where injection is into a formation which does not contain ground water having 10,000 mg/l or less TDS, no monitoring wells are necessary in the injection zone. However, monitoring wells may be necessary in adjoining zones with ground water having 10,000 mg/l or less TDS that could be affected by the extraction operation.

(3) In an area that the secretary determines is subject to subsidence or collapse, the required monitoring wells may be required to be located outside the physical influence of that area.

(4) In determining the adequacy of monitoring well location, number, construction and frequency of monitoring proposed by the discharger, the secretary shall consider the following factors:

(a) the local geology and hydrology;
(b) the operating pressures and whether a negative pressure gradient to the monitor well is being maintained;
(c) the nature and volume of injected fluid, formation water, and process by-products; and
(d) the number and spacing of Class III wells in the well field.

[9-20-82, 12-1-95; 20.6.2.5205 NMAC - Rn, 20 NMAC 6.2.V.5205, 1-15-01; A, 12-1-01]

20.6.2.5206 OPERATING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. General operating requirements applicable to Class I non-hazardous waste injection wells and Class III wells.

(1) The maximum injection pressure at the wellhead shall not initiate new fractures or propagate existing fractures in the confining zone, or cause the movement of injection or formation fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(2) Injection between the outermost casing and the well bore is prohibited in a zone other than the authorized injection zone.

B. Additional operating requirements for Class I non-hazardous waste injection wells.

(1) Except during well stimulation, the maximum injection pressure shall not initiate new fractures or propagate existing fractures in the injection zone.

(2) Unless an alternative to a packer has been approved under Subparagraph (c) of Paragraph (3) of Subsection B of Section 20.6.2.5205 NMAC, the annulus between the tubing and the long string of casing shall be filled with a fluid approved by the secretary and a pressure, also approved by the secretary shall be maintained on the annulus.

C. Additional operating requirements for Class III wells: Initiation of new fractures or propagation of existing fractures in the injection zone will not be approved by the secretary as part of a discharge permit unless it is done during well stimulation and the discharger demonstrates:

(1) that such fracturing will not cause movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC; and

(2) that the provisions of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC for protection of ground water are met.

[9-20-82, 12-1-95; 20.6.2.5206 NMAC - Rn, 20 NMAC 6.2.V.5206, 1-15-01; A, 12-1-01]

20.6.2.5207 MONITORING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. The discharger shall demonstrate mechanical integrity for each Class I non-hazardous waste injection well or Class III well at least once every five years during the life of the well pursuant to Section 20.6.2.5204 NMAC.

B. Additional monitoring requirements for Class I non-hazardous waste injection wells.

(1) The discharger shall provide analysis of the injected fluids at least quarterly or, if necessary, more frequently to yield data representative of their characteristics.

(2) Continuous monitoring devices shall be used to provide a record of injection pressure, flow rate, flow volume, and pressure on the annulus between the tubing and the long string of casing.

(3) The discharger shall provide wells within the area of review as required by the discharge permit to be used by the discharger to monitor pressure in, and possible fluid movement into, ground water having 10,000 mg/l or less TDS except for such ground waters designated pursuant to Section 20.6.2.5103 NMAC. This Section does not require monitoring wells for Class I non-hazardous waste injection wells unless monitoring wells are necessary due to possible flow paths within the area of review.

C. Additional monitoring requirements for Class III wells.

(1) The discharger shall provide an analysis or description, whichever the secretary requires, of the injected fluids at least quarterly or, if necessary, more frequently to yield representative data.

(2) The discharger shall perform:

(a) appropriate monitoring of injected and produced fluid volumes by whichever of the following methods the secretary requires:

(i) recording injection pressure and either flow rate or volume every two weeks; or

(ii) metering and daily recording of fluid volumes;

(b) monitoring every two weeks, or more frequently as the secretary determines, of the monitor wells, required in Subsection C of Section 20.6.2.5205 NMAC for:

(i) water chemistry parameters used to detect any migration from the injection zone;

(ii) fluid levels adjacent to the injection zone; and

(c) other necessary monitoring as the secretary for good cause may require to detect movement of fluids from the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(3) With the approval of the secretary, all Class III wells may be monitored on a well field basis by manifold monitoring rather than on an individual well basis. Manifold monitoring to determine the quality, pressure, and flow rate of the injected fluid may be approved in cases of facilities consisting of more than one Class III well, operating with a common manifold, provided that the discharger demonstrates that manifold monitoring is comparable to individual well monitoring.

[9-20-82, 12-1-95; 20.6.2.5207 NMAC - Rn, 20 NMAC 6.2.V.5207, 1-15-01; A, 12-1-01]

20.6.2.5208 REPORTING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Reporting requirements for Class I non-hazardous waste injection wells.

(1) If a Class I non-hazardous waste injection well is found to be discharging or is suspected of discharging fluids into a zone or zones other than the permitted or authorized injection zone, the discharger shall within 24 hours notify the secretary of the circumstances and action taken. The discharger shall provide subsequent written reports as required by the secretary.

(2) The discharger shall provide reports quarterly to the secretary on:

(a) the physical, chemical and other relevant characteristics of injection fluids;

(b) monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and

(c) the results of monitoring prescribed under Subsection B of Section 20.6.2.5207 NMAC.

(3) The discharger shall report, no later than the first quarterly report after completion, the results of:

(a) periodic tests of mechanical integrity as required in Sections 20.6.2.5204 and 20.6.2.5207 NMAC;

(b) any other test of the Class I non-hazardous waste injection well conducted by the discharger if required by the secretary;

(c) any well work-over; and

(d) any changes within the area of review which might impact subsurface conditions.

B. Reporting requirements for Class III wells.

(1) The discharger shall notify the secretary within 48 hours of the detection or suspected detection of a leachate excursion, and provide subsequent reports as required by the secretary.

(2) The discharger shall provide to the secretary:

(a) reports on required monitoring quarterly, or more frequently as required by the secretary; and

(b) results of mechanical integrity testing as required in Sections 20.6.2.5204 and 20.6.2.5207 NMAC and any other periodic tests required by the secretary; these results are to be reported no later than the first regular report after the completion of the test.

(3) Where manifold monitoring is permitted, monitoring results may be reported on a well field basis, rather than individual well basis.

C. Report signatory requirements.

(1) All reports submitted pursuant to this sction shall be signed and certified as provided in Subsection G of Section 20.6.2.5101 NMAC, or by a duly authorized representative.

(2) For a person to be a duly authorized representative, authorization must:

(a) be made in writing by a signatory described in Paragraph (1) of Subsection G of Section 20.6.2.5101 NMAC;

(b) specify either an individual or a position having responsibility for the overall operation of that regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, or position of equivalent responsibility; and

(c) have been submitted to the secretary.

[9-20-82, 12-1-95; 20.6.2.5208 NMAC - Rn, 20 NMAC 6.2.V.5208, 1-15-01; A, 12-1-01]

20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I WELLS AND CLASS III WELLS:

A. The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I well or a Class III well that meets the requirements of Subsection C of 20.6.2.3109, Subsection C of 20.6.2.5101, and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

B. Prior to abandonment of a well used in a Class I well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

C. Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

D. Placement of the plugs shall be accomplished by one of the following:

(1) the balance method; or

(2) the dump bailer method; or

(3) the two-plug method; or

(4) an equivalent method with the approval of the secretary.

E. The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan:

(1) the type and number of plugs to be used;

(2) the placement of each plug, including the elevation of the top and bottom;

(3) the type, grade and quantity of cementing slurry to be used;

(4) the method of placement of the plugs;

(5) the procedure to be used to plug and abandon the well; and

(6) such other factors that may affect the adequacy of the plan.

F. The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

[9-20-82, 12-1-95; 20.6.2.5209 NMAC - Rn, 20 NMAC 6.2.V.5209, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5210 INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I WELLS AND CLASS III WELLS:

A. This section sets forth the information to be considered by the secretary in authorizing construction and use of a Class I well or Class III well or well field. Certain maps, cross-sections, tabulations of all wells within the area of review, and other data may be included in the discharge permit application submittal by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

B. Prior to the issuance of a discharge permit or project discharge permit allowing construction of a new Class I well, operation of an existing Class I well, or operation of a new or existing Class III well or well field, or conversion of any well to injection use, the secretary shall consider the following:

(1) information required in Subsection C of 20.6.2.3106 NMAC;

(2) a map showing the Class I well, or Class III well or well fields, for which approval is sought and the applicable area of review; within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

(3) a tabulation of data on all wells within the area of review which may penetrate into the proposed injection zone; such data shall include, as available, a description of each well's type, the distance and direction to the injection well or well field, construction, date drilled, location, depth, record of plugging or completion, and any additional information the secretary may require;

(4) for wells within the area of review which penetrate the injection zone, but are not properly completed or plugged, the corrective action proposed to be taken under 20.6.2.5203 NMAC;

(5) maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within the area of review, the position of such ground water within the area of review relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(6) maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(7) generalized maps and cross-sections illustrating the regional geologic setting;

(8) proposed operating data, including:

(a) average and maximum daily flow rate and volume of the fluid to be injected;

(b) average and maximum injection pressure;

(c) source of injection fluids and an analysis or description, whichever the secretary requires, of their chemical, physical, radiological and biological characteristics;

(9) results of the formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation, provided that the secretary may issue a conditional approval of a discharge permit if he finds that further formation testing is necessary for final approval;

(10) expected pressure changes, native fluid displacement, and direction of movement of the injected fluid;

(11) proposed stimulation program;

(12) proposed or actual injection procedure;

(13) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(14) construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(15) contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to 20.6.2.5103 NMAC;

(16) plans, including maps, for meeting the monitoring requirements of 20.6.2.5207 NMAC; and

(17) the ability of the discharger to undertake measures necessary to prevent contamination of ground water having 10,000 mg/l or less TDS after the cessation of operation, including the proper closing, plugging and abandonment of a well, ground water restoration if applicable, and any post-operational monitoring as may be needed; methods by which the discharger shall demonstrate the ability to undertake these measures shall include submission of a surety bond or other adequate assurances, such as financial statements or other materials acceptable to the secretary, such as: (1) a surety bond; (2) a trust fund with a New Mexico bank in the name of the state of New Mexico, with the state as beneficiary; (3) a non-renewable letter of credit made out to the state of New Mexico; (4) liability insurance specifically covering the contingencies listed in this paragraph; or (5) a performance bond, generally in conjunction with another type of financial assurance; such bond or materials shall be approved and executed prior to discharge permit issuance and shall become effective upon commencement of construction; if an adequate bond is posted by the discharger to a federal or another state agency, and this bond covers all of the measures referred to above, the secretary shall consider this bond as satisfying the bonding requirements of 20.6.2.5000 through 20.6.2.5299 NMAC wholly or in part, depending upon the extent to which such bond is adequate to ensure that the discharger will fully perform the measures required hereinabove.

C. Prior to the secretary's approval that allows the operation of a new or existing Class I well or Class III well or well field, the secretary shall consider the following:

(1) update of pertinent information required under Subsection B of 20.6.2.5210 NMAC;

(2) all available logging and testing program data on the well;

(3) the demonstration of mechanical integrity pursuant to 20.6.2.5204 NMAC;

(4) the anticipated maximum pressure and flow rate at which the permittee will operate;

(5) the results of the formation testing program;

(6) the physical, chemical, and biological interactions between the injected fluids and fluids in the injection zone, and minerals in both the injection zone and the confining zone; and

(7) the status of corrective action on defective wells in the area of review.

[9-20-82, 12-24-87, 12-1-95; 20.6.2.5210 NMAC - Rn, 20 NMAC 6.2.V.5210, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5211 - 20.6.2.5299: [RESERVED]

[12-1-95; 20.6.2.5211 - 20.6.2.5299 NMAC - Rn, 20 NMAC 6.2.V.5211-5299, 1-15-01]

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in 20.6.2.5300 through 20.6.2.5399 NMAC, Class I hazardous waste wells are subject to the minimum permit requirements for all Class I wells in 20.6.2.5000 through 20.6.2.5299 NMAC, in addition to the requirements of 20.6.2.5300 through 20.6.2.5399 NMAC. To the extent any requirement in 20.6.2.5300 through 20.6.2.5399 NMAC conflicts with a requirement of 20.6.2.5000 through 20.6.2.5299 NMAC, Class I hazardous waste injection wells must comply with 20.6.2.5300 through 20.6.2.5399 NMAC.

B. Class I hazardous waste injection wells are only authorized for use by petroleum refineries for the waste generated by the refinery ("generator").

C. The New Mexico energy, minerals and natural resources department, oil conservation division will administer and oversee all permitting of Class I hazardous waste wells pursuant to 20.6.2.5300 through 20.6.2.5399 NMAC.

[20.6.2.5300 NMAC - N, 8-31-15]

20.6.2.5301 DEFINITIONS: As used in 20.6.2.5300 through 20.6.2.5399 NMAC:

A. "**cone of influence**" means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into groundwater of the state of New Mexico;

B. "**director**" means the director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

C. "**existing well**" means a Class I hazardous waste injection well which has become a Class I hazardous waste injection well as a result of a change in the definition of the injected waste which would render the waste hazardous under 20.4.1.200 NMAC (incorporating 40 C.F.R. Section 261.3);

D. "**groundwater of the state of New Mexico**" means, consistent with 20.6.2.5001 NMAC, an aquifer that contains ground water having a TDS concentration of 10,000 mg/l or less;

E. "**injection interval**" means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced;

F. "**new well**" means any Class I hazardous waste injection well which is not an existing well;

G. "**transmissive fault or fracture**" is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

[20.6.2.5301 NMAC - N, 8-31-15]

20.6.2.5302 FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of 20.6.2.3114 NMAC.

A. *Filing Fee.* Every facility submitting a discharge permit application for approval of a Class I hazardous waste injection well shall pay a filing fee of $100 to the water quality management fund at the time the permit application is submitted. The filing fee is nonrefundable.

B. *Permit fee.*

(1) Every facility submitting a discharge permit application for approval of a Class I hazardous waste injection well shall pay a permit fee of $30,000 to the water quality management fund. The permit fee may be paid in a single payment at the time of permit approval or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit approval. Subsequent installments shall be remitted yearly thereafter. The permit or permit application review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) Facilities applying for permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. *Annual administration fee.* Every facility that receives a Class I hazardous waste injection well permit shall pay an annual administrative fee of $20,000 to the water quality management fund. The initial administrative fee shall be remitted one year after commencement of disposal operations pursuant to the permit. Subsequent administrative fees shall be remitted annually thereafter.

D. *Renewal fee.*

(1) Every facility submitting a discharge permit application for renewal of a Class I hazardous waste injection well shall pay a renewal fee of $10,000 to the water quality management fund. The renewal fee may be paid in a single payment at the time of permit renewal or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit renewal. Subsequent installments shall be remitted yearly thereafter. The permit or permit renewal review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) The director may waive or reduce fees for discharge permit renewals which require little or no cost for investigation or issuance.

E. *Modification fees.*

(1) Every facility submitting an application for a discharge permit modification of a Class I hazardous waste injection well will be assessed a filing fee plus a modification fee of $10,000 to the water quality management fund.

(2) Every facility submitting an application for other changes to a Class I hazardous waste injection well discharge permit will be assessed a filing fee plus a minor modification fee of $1,000 to the water quality management fund.

(3) Applications for both renewal and modification shall pay a filing fee plus renewal fee.

(4) If the director requires a discharge permit change as a component of an enforcement action, the facility shall pay the applicable modification fee. If the director requires a discharge permit change outside the context of an enforcement action, the facility shall not be assessed a fee.

(5) The director may waive or reduce fees for discharge permit changes which require little or no cost for investigation or issuance.

F. *Financial assurance fees.*

(1) Facilities with approved Class I hazardous waste injection well permits shall pay the financial assurance fees specified in Table 2 of 20.6.2.3114 NMAC.

(2) Facilities relying on the corporate guarantee for financial assurance shall pay an additional fee of $5,000 to the water quality management fund.

[20.6.2.5302 NMAC - N, 8-31-15]

20.6.2.5303 CONVERSION OF EXISTING INJECTION WELLS: An existing Class I non-hazardous waste injection well may be converted to a Class I hazardous waste injection well provided the well meets the modeling, design, compatibility, and other requirements set forth in 20.6.2.5300 through 20.6.2.5399 NMAC and the permittee receives a Class I hazardous waste permit pursuant to those sections.

[20.6.2.5303 NMAC - N, 8-31-15]

20.6.2.5304 - 20.6.2.5309: [RESERVED]

20.6.2.5310 REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

A. *Applicability.* The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also Subparagraph (b) of Paragraph (3) of Subsection A of 20.6.2.5004 NMAC.)

B. *Authorization.* The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for authorization to inject as specified in 20.6.2.5102 NMAC within six months after the approval or promulgation of the state UIC program.

C. *Requirements.* In addition to complying with the applicable requirements of this part, the owner or operator of each facility meeting the requirements of Subsection B of this section, shall comply with the following.

(1) *Notification.* The owner or operator shall comply with the notification requirements of 42 U.S.C. Section 6930.

(2) *Identification number.* The owner or operator shall comply with the requirements of 20.4.1.500 NMAC (incorporating 40 CFR Section 264.11).

(3) *Manifest system.* The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in 20.4.1.500 NMAC (incorporating 40 CFR Section 264.71).

(4) *Manifest discrepancies.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.72).

(5) *Operating record.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Sections 264.73(a), (b)(1), and (b)(2)).

(6) *Annual report.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(7) *Unmanifested waste report.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of 20.4.1.500 NMAC (incorporating 40 CFR Section 264.16).

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in 20.6.2.5209 NMAC.

[20.6.2.5310 NMAC - N, 8-31-15]

20.6.2.5311 - 20.6.2.5319: [RESERVED]

20.6.2.5320 ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS): Except as otherwise provided, the regulations of the United States environmental protection agency set forth in 40 CFR Part 144, Subpart F are hereby incorporated by reference.

[20.6.2.5320 NMAC - N, 8-31-15]

20.6.2.5321 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS: Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following term defined in 40 CFR Section 144.61 has the meaning set forth herein, in lieu of the meaning set forth in 40 CFR Section 144.61: "plugging and abandonment plan" means the plan for plugging and abandonment prepared in accordance with the requirements of 20.6.2.5341 NMAC.

B. The following terms not defined in 40 CFR Part 144, Subsection F have the meanings set forth herein when the terms are used in this part:

(1) "administrator," "regional administrator" and other similar variations means the director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

(2) "United States environmental protection agency" or "EPA" means New Mexico energy, minerals and natural resources department, oil conservation division or OCD, except when used in 40 CFR Section 144.70 (f).

C. The following provisions of 40 CFR Part 144, Subpart F are modified in 20.6.2.5321 NMAC:

(1) cross references to 40 CFR Part 144 shall be replaced by cross references to 20.6.2.5300 through 20.6.2.5399 NMAC;

(2) the cross reference to Sections 144.28 and 144.51 in Section 144.62(a) shall be replaced by a cross reference to 20.6.2.5341 NMAC;

(3) the cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H shall be modified to include cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H and 20.4.1.500 and 20.4.1.600 NMAC;

(4) references to EPA identification numbers in financial assurance documents shall be replaced by references to API well numbers (US well numbers);

(5) the first sentence of 40 CFR Section 144.63(f)(1) shall be replaced with the following sentence: "An owner or operator may satisfy the requirements of this section by obtaining a guarantee from a corporate parent that meets the requirements of 40 CFR Section 144.63(f)(10), including the guarantor meeting the requirements for the owner or operator under the financial test specified in this paragraph.";

(6) trust agreements prepared in accordance with 40 CFR Section 144.70(a) must state that they will be administered, construed, and enforced according to the laws of New Mexico;

(7) surety companies issuing bonds prepared in accordance with 40 CFR Section 144, Subpart F must be registered with the New Mexico office of superintendent of insurance;

D. The following provisions of 40 CFR Part 144, Subpart F are omitted from 20.6.2.5320 NMAC:

(1) Section 144.65;

(2) Section 144.66;

(3) the third sentence in 40 CFR Section 144.63(h).

[20.6.2.5321 NMAC - N, 8-31-15]

20.6.2.5322 - 20.6.2.5340 [RESERVED]

20.6.2.5341 CONDITIONS APPLICABLE TO ALL PERMITS: The following conditions apply to all Class I hazardous permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

A. *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the New Mexico Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that

the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in a variance issued under 20.6.2.1210 NMAC.

B. *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal pursuant to Subsection F of 20.6.2.3106 NMAC.

C. *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F. *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

H. *Duty to provide information.* The permittee shall furnish to the director, within a time specified, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the director, upon request, copies of records required to be kept by this permit.

I. *Duty to provide notice.* Public notice, when required, shall be provided as set forth in 20.6.2.3108 NMAC except that the following notice shall be provided in lieu of the notice required by Paragraph (2) of Subsection B of 20.6.2.3108 NMAC: a written notice must be sent by certified mail, return receipt requested, to all surface and mineral owners of record within a ½ mile radius of the proposed well or wells.

J. *Inspection and entry.* The permittee shall allow the director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the 20.6.2.5300 through 20.6.2.5399 NMAC, any substances or parameters at any location.

K. *Monitoring and records.*

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(a) calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, or application; this period may be extended by request of the director at any time; and

(b) the nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under 20.6.2.5351 through 20.6.2.5363 NMAC; the director may require the owner or operator to deliver the records to the director at the conclusion of the retention period.

(3) Records of monitoring information shall include:

(a) the date, exact place, and time of sampling or measurements;

(b) the individual(s) who performed the sampling or measurements;

(c) the date(s) analyses were performed;

(d) the individual(s) who performed the analyses;

(e) the analytical techniques or methods used; and

(f) the results of such analyses.

L. *Signatory requirement.* All applications, reports, or information submitted to the director shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC.)

M. *Reporting requirements.*

(1) *Planned changes.* The permittee shall give notice to the director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(4) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(5) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(a) any monitoring or other information which indicates that any contaminant may cause an endangerment to groundwater of the state of New Mexico; or

(b) any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between groundwater of the state of New Mexico; any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances; a written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances; the written submission shall contain a description of the noncompliance and its cause; the area affected by the noncompliance, including any groundwater of the state of New Mexico; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; the date and time the permittee became aware of the noncompliance; and steps taken or planned to reduce, remediate, eliminate, and prevent reoccurrence of the noncompliance.

(6) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under Paragraphs (3), (4), and (5) of Subsection M of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph (5) of Subsection M of this section.

(7) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the director, it shall promptly submit such facts or information.

N. *Requirements prior to commencing injection.* A new injection well may not commence injection until construction is complete; and

(1) the permittee has submitted notice of completion of construction to the director; and

(2) the director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or the permittee has not received notice from the director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in Paragraph (1) of Subsection N of this section, in which case prior inspection or review is waived and the permittee may commence injection; the director shall include in his notice a reasonable time period in which he shall inspect the well.

O. The permittee shall notify the director at such times as the permit requires before conversion or abandonment of the well.

P. The permittee shall meet the requirements of 20.6.2.5209 NMAC.

Q. *Plugging and abandonment report.* Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the director. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) a statement that the well was plugged in accordance with the plan previously submitted to the director; or

(2) where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the director, specifying the differences.

R. *Duty to establish and maintain mechanical integrity.*

(1) The permittee shall meet the requirements of 20.6.2.5204 NMAC.

(2) When the director determines that a Class I hazardous well lacks mechanical integrity pursuant to 20.6.2.5204 NMAC, the director shall give written notice of the director's determination to the owner or operator. Unless the director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the director's determination. The director may allow plugging of the well pursuant to the requirements of 20.6.2.5209 NMAC or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between groundwater of the state of New Mexico caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the director that the owner or operator has demonstrated mechanical integrity pursuant to 20.6.2.5204 and 20.6.2.5358 NMAC.

(3) The director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Subsection A of 20.6.2.5204 NMAC to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between groundwater of the state of New Mexico.

S. *Transfer of a permit.* The operator shall not transfer a permit without the director's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25% or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the director denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after receipt of the notice. Until the director approves the transfer and the required financial assurance is in place, the director shall not release the transferor's financial assurance.

[20.6.2.5341 NMAC - N, 8-31-15]

20.6.2.5342 ESTABLISHING PERMIT CONDITIONS:

A. In addition to conditions required in 20.6.2.5341 NMAC, the director shall establish conditions, as required on a case-by-case basis under Subsection H of 20.6.2.3109 NMAC, Subsection A of 20.6.2.5343 NMAC, and 20.6.2.5344 NMAC. Permits for owners or operators of hazardous waste injection wells shall also include conditions meeting the requirements of 20.6.2.5310 NMAC, Paragraphs (1) and (2) of Subsection A of this section, and 20.6.2.5351 through 20.6.2.5363 NMAC.

(1) *Financial responsibility.*

(a) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the director until:

(i) the well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Subsection P of 20.6.2.5341 NMAC, and 20.6.2.5209 NMAC, and submitted a plugging and abandonment report pursuant to Subsection Q of 20.6.2.5341 NMAC; or

(ii) the well has been converted in compliance with the requirements of Subsection O of 20.6.2.5341 NMAC; or

(iii) the transferor of a permit has received notice from the director that the transfer has been approved and that the transferee's required financial assurance is in place.

(b) The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of 20.6.2.5320 NMAC.

(2) *Additional conditions.* The director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into groundwater of the state of New Mexico.

B. *Applicable requirements.*

(1) In addition to conditions required in all permits the director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of this part.

(2) An applicable requirement is a state statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit.

(3) New or renewed permits, and to the extent allowed under 20.6.2.3109 NMAC modified or terminated permits, shall incorporate each of the applicable requirements referenced in 20.6.2.5342 NMAC.

C. *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

[20.6.2.5342 NMAC - N, 8-31-15]

20.6.2.5343 SCHEDULE OF COMPLIANCE:

A. *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with this part.

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit.

(2) *Interim dates.* Except as provided in Subparagraph (b) of Paragraph (1) of Subsection B of this section, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(a) The time between interim dates shall not exceed one year.

(b) If the time necessary for completion of any interim requirement is more than one year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if Paragraph (1) of Subsection A of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

B. *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows.

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(a) the permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(b) the permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the director may issue or modify a permit to contain two schedules as follows:

(a) both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(b) one schedule shall lead to timely compliance with applicable requirements;

(c) the second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(d) each permit containing two schedules shall include a requirement that after the permittee has made a final decision under Subparagraph (a) of Paragraph (3) of Subsection B of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the director, such as a resolution of the board of directors of a corporation.

[20.6.2.5343 NMAC - N, 8-31-15]

20.6.2.5344 REQUIERMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS: All permits shall specify:

A. requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

B. required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

C. applicable reporting requirements based upon the impact of the regulated activity and as specified in 20.6.2.5359 NMAC; reporting shall be no less frequent than specified in the above regulations.

[20.6.2.5344 NMAC - N, 8-31-15]

20.6.2.5345 - 20.6.2.5350: [RESERVED]

20.6.2.5351 APPLICABILITY: 20.6.2.5351 through 20.6.2.5363 NMAC establish criteria and standards for underground injection control programs to regulate Class I hazardous waste injection wells. Unless otherwise noted, these sections supplement the requirements of 20.6.2.5000 through 20.6.2.5299 NMAC and apply instead of any inconsistent requirements for Class I non-hazardous waste injection wells.

[20.6.2.5351 NMAC - N, 8-31-15]

20.6.2.5352 MINIMUM CRITERIA FOR SITING:

A. All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore groundwater of the state of New Mexico.

B. The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The director shall determine geologic suitability based upon:

(1) an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

(3) a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

C. Class I hazardous waste injection wells shall be sited such that:

(1) the injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into groundwater of the state of New Mexico; and

(2) the confining zone:

(a) is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into groundwater of the state of New Mexico; and

(b) contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

D. The owner or operator shall demonstrate to the satisfaction of the director that:

(1) the confining zone is separated from the base of the lowermost groundwater of the state of New Mexico by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for groundwater of the state of New Mexico in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost groundwater of the state of New Mexico, considering density effects, injection pressures and any significant pumping in the overlying groundwater of the state of New Mexico; or

(3) there is no groundwater of the state of New Mexico present.

(4) The director may approve a site which does not meet the requirements in Paragraphs (1), (2), or (3) of Subsections D of this section if the owner or operator can demonstrate to the director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of groundwater of the state of New Mexico.

[20.6.2.5352 NMAC - N, 8-31-15]

20.6.2.5353 AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of 20.6.2.5202 NMAC. The area of review for Class I hazardous waste injection wells shall be a two-mile radius around the well bore. The director may specify a larger area of review based on the calculated cone of influence of the well.

[20.6.2.5353 NMAC - N, 8-31-15]

20.6.2.5354 CORRECTIVE ACTION FOR WELLS IN THE AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of 20.6.2.5203 NMAC.

A. The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the director outlining the protocol used to:

(1) identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) determine whether wells are adequately completed or plugged.

B. The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in Subsection A of 20.6.2.5360 NMAC:

(1) a tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) a description of each well or type of well and any records of its plugging or completion.

C. For wells that the director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modification as are necessary to prevent movement of fluids into or between groundwater of the state of New Mexico. Where the plan is adequate, the director shall incorporate it into the permit as a condition. Where the director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in Subsection E of this section), the director shall:

(1) require the applicant to revise the plan;

(2) prescribe a plan for corrective action as a condition of the permit; or

(3) deny the application.

D. Requirements.

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any

corrective action accepted or prescribed under Subsection C of this section. Any such compliance schedule shall provide for compliance no later than two years following issuance of the permit and shall require observance of appropriate pressure limitations under Paragraph (3) of Subsection D until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between groundwater of the state of New Mexico. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

E. In determining the adequacy of corrective action proposed by the applicant under Subsection C of this section and in determining the additional steps needed to prevent fluid movement into and between groundwater of the state of New Mexico, the following criteria and factors shall be considered by the director:

(1) nature and volume of injected fluid;

(2) nature of native fluids or byproducts of injection;

(3) geology;

(4) hydrology;

(5) history of the injection operation;

(6) completion and plugging records;

(7) closure procedures in effect at the time the well was closed;

(8) hydraulic connections with groundwater of the state of New Mexico;

(9) reliability of the procedures used to identify abandoned wells; and

(10) any other factors which might affect the movement of fluids into or between groundwater of the state of New Mexico.

[20.6.2.5354 NMAC - N, 8-31-15]

20.6.2.5355 CONSTRUCTION REQUIREMENTS:

A. *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) prevent the movement of fluids into or between groundwater of the state of New Mexico or into any unauthorized zones;

(2) permit the use of appropriate testing devices and workover tools; and

(3) permit continuous monitoring of injection tubing and long string casing as required pursuant to Subsection F of 20.6.2.5357 NMAC.

B. *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American petroleum institute, ASTM, or comparable standards acceptable to the director.

C. *Casing and cementing of new wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between groundwater of the state of New Mexico, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the director shall consider the following information as required by 20.6.2.5360 NMAC:

(a) depth to the injection zone;

(b) injection pressure, external pressure, internal pressure and axial loading;

(c) hole size;

(d) size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification and construction material);

(e) corrosiveness of injected fluid, formation fluids and temperature;

(f) lithology of injection and confining zones;

(g) type or grade of cement; and

(h) quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains groundwater of the state of New Mexico and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The director may require more than 120% when the geology or other circumstances warrant it.

(3) At least one long string casing, using a sufficient number of centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(a) of sufficient quantity and quality to withstand the maximum operating pressure; and

(b) in a quantity no less than 120% of the calculated volume necessary to fill the annular space; the director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(a) the maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(b) the maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

D. *Tubing and packer.*

(1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(a) depth of setting;

(b) characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(c) injection pressure;

(d) annular pressure;

(e) rate (intermittent or continuous), temperature and volume of injected fluid;

(f) size of casing; and

(g) tubing tensile, burst, and collapse strengths.

(3) The director may approve the use of a fluid seal if he determines that the following conditions are met:

(a) the operator demonstrates that the seal will provide a level of protection comparable to a packer;

(b) the operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(c) the permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(d) the design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(e) a secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

[20.6.2.5355 NMAC - N, 8-31-15]

20.6.2.5356 LOGGING, SAMPLING, AND TESTING PRIOR TO NEW WELL OPERATION:

A. During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in 20.6.2.5355 NMAC, and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the director. At a minimum, such logs and tests shall include:

(1) deviation checks during drilling on all holes constructed by drilling pilot holes which are enlarged by reaming or another method; such checks shall be at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(2) such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise

from time to time as the construction of the well progresses; at a minimum, the following logs shall be required in the following situations:

(a) upon installation of the surface casing:

(i) resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(ii) a cement bond and variable density log, and a temperature log after the casing is set and cemented;

(b) upon installation of the long string casing:

(i) resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(ii) a cement bond and variable density log, and a temperature log after the casing is set and cemented;

(c) the director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) a mechanical integrity test consisting of:

(a) a pressure test with liquid or gas;

(b) a radioactive tracer survey;

(c) a temperature or noise log;

(d) a casing inspection log, if required by the director; and

(e) any other test required by the director.

B. Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The director may require the owner or operator to core other formations in the borehole.

C. The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

D. At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) fracture pressure;

(2) other physical and chemical characteristics of the injection and confining zones; and

(3) physical and chemical characteristics of the formation fluids in the injection zone.

E. Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(1) a pump test; or

(2) injectivity tests.

F. The director shall have the opportunity to witness all logging and testing required by 20.6.2.5351 through 20.6.2.5363 NMAC. The owner or operator shall submit a schedule of such activities to the director 30 days prior to conducting the first test.

[20.6.2.5356 NMAC - N, 8-31-15]

20.6.2.5357 OPERATING REQUIREMENTS:

A. Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into groundwater of the state of New Mexico.

B. Injection between the outermost casing protecting groundwater of the state of New Mexico and the well bore is prohibited.

C. The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

D. The owner or operator shall maintain mechanical integrity of the injection well at all times.

E. Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) conditions limiting the temperature, pH or acidity of the injected waste; and

(2) procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

F. The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the director exceed a range or gradient specified in the permit; or

(2) automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the director exceed a rate or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

G. If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under Subsection F of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) cease injection of waste fluids unless authorized by the director to continue or resume injection;

(2) take all necessary steps to determine the presence or absence of a leak; and

(3) notify the director within 24 hours after the alarm or shutdown.

H. If a loss of mechanical integrity is discovered pursuant to Subsection G of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) immediately cease injection of waste fluids;

(2) take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(3) notify the director within 24 hours after loss of mechanical integrity is discovered;

(4) notify the director when injection can be expected to resume; and

(5) restore and demonstrate mechanical integrity to the satisfaction of the director prior to resuming injection of waste fluids.

I. Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(1) the owner or operator shall immediately case injection of waste fluids, and:

(a) notify the director within 24 hours of obtaining such evidence;

(b) take all necessary steps to identify and characterize the extent of any release;

(c) comply with any remediation plan specified by the director;

(d) implement any remediation plan approved by the director; and

(e) where such release is into groundwater of the state of New Mexico currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger groundwater of the state of New Mexico.

J. The owner or operator shall notify the director and obtain his approval prior to conducting any well workover.

[20.6.2.5357 NMAC - N, 8-31-15]

20.6.2.5358 TESTING AND MONITORING REQUIREMENTS: Testing and monitoring requirements shall at a minimum include.

A. Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(a) the parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(b) the test methods that will be used to test for these parameters; and

(c) the sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

B. Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in 20.6.2.5352 NMAC.

C. Compatibility of well materials.

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under Subsection B of 20.6.2.5355 NMAC.

(2) The director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(a) placing coupons of the well construction materials in contact with the waste stream; or

(b) routing the waste stream through a loop constructed with the material used in the well; or

(c) using an alternative method approved by the director.

(3) If a corrosion monitoring program is required:

(a) the test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation; and

(b) the owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in Subsection B of 20.6.2.5355 NMAC.

D. Periodic mechanical integrity testing. In fulfilling the requirements of 20.6.2.5204 NMAC, the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

(1) the long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) the bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) an approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole; the director may require such tests whenever the well is worked over;

(4) casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years; the director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) any other test approved by the director in accordance with the procedures in 40 CFR Section 146.8(d) may also be used.

E. Ambient monitoring.

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the director shall require the owner or operator to develop a monitoring program. At a minimum, the director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the director may also require:

(a) continuous monitoring for pressure changes in the first aquifer overlying the confining zone; when such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the director;

(b) the use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the director, or to provide other site specific data;

(c) periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(d) periodic monitoring of the ground water quality in the lowermost groundwater of the state of New Mexico; and

(e) any additional monitoring necessary to determine whether fluids are moving into or between groundwater of the state of New Mexico.

F. The director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.
[20.6.2.5358 NMAC - N, 8-31-15]

20.6.2.5359 REPORTING REQUIREMENTS: Reporting requirements shall, at a minimum, include:

A. quarterly reports to the director containing:

(1) the maximum injection pressure;

(2) a description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) a description of any event which triggers an alarm or shutdown device required pursuant to Subsection F of 20.6.2.5357 NMAC and the response taken;

(4) the total volume of fluid injected;

(5) any change in the annular fluid volume;

(6) the physical, chemical and other relevant characteristics of injected fluids; and

(7) the results of monitoring prescribed under 20.6.2.5358 NMAC;

B. reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

(1) periodic tests of mechanical integrity;

(2) any other test of the injection well conducted by the permittee if required by the director; and

(3) any well workover.

[20.6.2.5359 NMAC - N, 8-31-15]

20.6.2.5360 INFORMATION TO BE EVALUATED BY THE DIRECTOR: This section sets forth the information which must be evaluated by the director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved.

A. Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the director shall review the following to assure that the requirements of 20.6.2.5000 through 20.6.2.5399 NMAC are met:

(1) information required in 20.6.2.5102 NMAC;

(2) a map showing the injection well for which a permit is sought and the applicable area of review; within the area of review, the map must show the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads; the map should also show faults, if known or suspected;

(3) a tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone; such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging or completion and any additional information the director may require;

(4) the protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) maps and cross-sections indicating the general vertical and lateral limits of all groundwater of the state of New Mexico within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each groundwater of the state of New Mexico which may be affected by the proposed injection;

(6) maps and cross-sections detailing the geologic structure of the local area;

(7) maps and cross-sections illustrating the regional geologic setting;

(8) proposed operating data:

(a) average and maximum daily rate and volume of the fluid to be injected; and

(b) average and maximum injection pressure;

(9) proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) proposed stimulation program;

(11) proposed injection procedure;

(12) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any groundwater of the state of New Mexico;

(14) plans (including maps) for meeting monitoring requirements of 20.6.2.5358 NMAC;

(15) for wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under 20.6.2.5354 NMAC;

(16) construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) a demonstration pursuant to 20.6.2.5320 NMAC, that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

B. Prior to the director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the director shall review the following information, which shall be included in the completion report:

(1) all available logging and testing program data on the well;

(2) a demonstration of mechanical integrity pursuant to 20.6.2.5358 NMAC;

(3) the anticipated maximum pressure and flow rate at which the permittee will operate;

(4) the results of the injection zone and confining zone testing program as required in Paragraph (9) of Subsection A of 20.6.2.5360 NMAC;

(5) the actual injection procedure;

(6) the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

(7) the calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Paragraphs (2) and (3) of Subsection A of 20.6.2.5360 NMAC;

(8) the status of corrective action on wells identified in Paragraph (15) of Subsection A of 20.6.2.5360 NMAC; and

(9) evidence that the permittee has obtained an exemption under 40 C.F.R. Part 148, Subpart C for the hazardous wastes permitted for disposal through underground injection.

C. Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the director shall review the information required in Paragraph (4) of Subsection A of 20.6.2.5361 NMAC and Subsection A of 20.6.2.5362 NMAC.

D. Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

(1) the generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

[20.6.2.5360 NMAC - N, 8-31-15]

20.6.2.5361 CLOSURE:

A. *Closure plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of Subsection D of this section and is acceptable to the director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the director no later than the date on which notice of closure is required to be submitted to the director under Subsection B of this section.

(3) The plan shall assure financial responsibility as required in Paragraph (1) of Subsection A of 20.6.2.5342 NMAC.

(4) The plan shall include the following information:

(a) the type and number of plugs to be used;

(b) the placement of each plug including the elevation of the top and bottom of each plug;

(c) the type and grade and quantity of material to be used in plugging;

(d) the method of placement of the plugs;

(e) any proposed test or measure to be made;

(f) the amount, size, and location (by depth) of casing and any other materials to be left in the well;

(g) the method and location where casing is to be parted, if applicable;

(h) the procedure to be used to meet the requirements of Paragraph (5) of Subsection D of this section;

(i) the estimated cost of closure; and

(j) any proposed test or measure to be made.

(5) The director may modify a closure plan following the procedures of 20.6.2.3109 NMAC.

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(a) has received authorization from the director; and

(b) has described actions or procedures, satisfactory to the director, that the owner or operator will take to ensure that the well will not endanger groundwater of the state of New Mexico during the period of temporary disuse; these actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the director.

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the director 30 days prior to resuming operation of the well.

B. *Notice of intent to close.* The owner or operator shall notify the director at least 60 days before closure of a well. At the discretion of the director, a shorter notice period may be allowed.

C. *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

(1) a statement that the well was closed in accordance with the closure plan previously submitted and approved by the director; or

(2) where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

D. *Standards for well closure.*

(1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the director. The director shall analyze the pressure decay and the transient pressure observations conducted pursuant to Paragraph (1) of Subsection E of 20.6.2.5358 NMAC and determine whether the injection activity has conformed with predicted values.

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(a) pressure tests with liquid or gas;

(b) radioactive tracer surveys;

(c) noise, temperature, pipe evaluation, or cement bond logs; and

(d) any other test required by the director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between groundwater of the state of New Mexico.

(5) Placement of the cement plugs shall be accomplished by one of the following:

(a) the balance method;

(b) the dump bailer method;

(c) the two-plug method; or

(d) an alternate method, approved by the director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the director, prior to the placement of the cement plug(s).

[20.6.2.5361 NMAC - N, 8-31-15]

20.6.2.5362 POST-CLOSURE CARE:

A. The owner or operator of a Class I hazardous waste well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of Subsection B of this section and is acceptable to the director.

The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under Subsection C of 20.6.2.5361 NMAC.

(3) The plan shall assure financial responsibility as required in 20.6.2.5363 NMAC.

(4) The plan shall include the following information:

(a) the pressure in the injection zone before injection began;

(b) the anticipated pressure in the injection zone at the time of closure;

(c) the predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the state of New Mexico;

(d) predicted position of the waste front at closure;

(e) the status of any cleanups required under 20.6.2.5354 NMAC; and

(f) the estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the director may modify the post-closure plan after submission of the closure report following the procedures in 20.6.2.3109 NMAC.

B. The owner or operator shall:

(1) continue and complete any cleanup action required under 20.6.2.5354 NMAC, if applicable;

(2) continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the state of New Mexico; the director may extend the period of post-closure monitoring if he determines that the well may endanger groundwater of the state of New Mexico;

(3) submit a survey plat to the local zoning authority designated by the director; the plat shall indicate the location of the well relative to permanently surveyed benchmarks; a copy of the plat shall be submitted to the director;

(4) provide appropriate notification and information to such state and local authorities as have cognizance over drilling activities to enable such state and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone;

(5) retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids; the director shall require the owner or operator to deliver the records to the director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the director for that purpose.

C. Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) the fact that land has been used to manage hazardous waste;

(2) the name of the state agency or local authority with which the plat was filed, as well as the address of the director;

(3) the type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

[20.6.2.5362 NMAC - N, 8-31-15]

20.6.2.5363 FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE: The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in 20.6.2.5320 NMAC. The amount of the funds available shall be no less than the amount identified in Subparagraph (f) of Paragraph (4) of Subsection A of 20.6.2.5362 NMAC. The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

[20.6.2.5363 NMAC - N, 8-31-15]

20.6.2.5364 - 20.6.2.5399: [RESERVED]

HISTORY of 20.6.2 NMAC:

Pre-NMAC History:
Material in this Part was derived from that previously filed with the commission of public records - state records center and archives:
WQC 67-2, Regulations Governing Water Pollution Control in New Mexico, filed 12-5-67, effective 1-4-68
WQC 72-1, Water Quality Control Commission Regulations, filed 8-4-72, effective 9-3-72
WQC 77-1, Amended Water Quality Control Commission Regulations, filed 1-18-77, effective 2-18-77
WQC 81-2, Water Quality Control Commission Regulations, filed 6-2-81, effective 7-2-81
WQC 82-1, Water Quality Control Commission Regulations, filed 8-19-82, effective 9-20-82

History of Repealed Material: [Reserved]

Other History:
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 10-27-95, effective 12-1-95
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 10-15-96, effective 11-15-96
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 11-30-00, effective 1-15-01
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 9-16-01, effective 12-1-01
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 8-1-02, effective 9-15-02

APPENDIX - C

RULE CHANGES

NMAC TRANSMITTAL FORM

HISTORICAL

ALD Use Only
Volume: **Issue:** **Publication Date:** / / **[Sequence #_____]**

1. Issuing Agency	2. Agency DFA Code
Water Quality Control Commission	667

3. Agency Address
1190 St. Francis Drive, P.O. Box 5469, Santa Fe, NM 87502

4. Contact Person

Name	Allison Marks	Phone #	(505) 476-3206
E-mail	AllisonR.Marks@state.nm.us		

5. Type of Rule Action

[ ] New [X] Amendment [ ] Repeal [ ] Repeal/Replace [ ] Renumber [ ] Emergency

6. Total number of pages:	33	7. Hearing date:	7/14/2015	8. Effective date:	8/31/2015

9. NMAC Number

Title	Chapter	Part
20	6	2

10. NMAC Name

Title	Chapter	Part
ENVIRONMENTAL PROTECTION	WATER QUALITY	GROUND AND SURFACE WATER PROTECTION

11. Amendment Description (*Amendment filing only*)	12. Amendment's NMAC Citation (*if applicable*)
Amend 16 sections and add 24 new sections	20.6.2 NMAC Sections 3106, 3107, 3109, 5001-5004, 5101-5104, 5200, 5201, 5204, 5209, 5210 & 5300-5363

13. Most recent filing date (ALD Use Only)
06 / 02 / 2014

14. Are there any materials incorporated by reference?

No [X] Yes [ ]

Please list attachments and Internet site(s) if applicable

Reference / Internet site
1.
2.
3.

15. If materials are attached, has copyright permission been received?

No [ ] Yes [ ] Public domain [ ]

16. Legal citation(s) that allows the *Issuing Agency* to regulate and the *Issuing Authority* to promulgate regulations on this subject (*provide all that apply*).
Sections 74-6-2(K), 74-6-4(E), 74-6-4(K), 74-6-8 NMSA 1978

17. Signature & Title of Issuing Authority (*Delegation authority letter MUST be on file with ALD*)

Check if delegated authority [ ]

Name: Ryan Flynn

Title: Chair, Water Quality Control Commission

Signature [Black Ink Only] Date Signed 7/31/15

1.24.10 NMAC

This is an amendment to 20.6.2 NMAC, amending Sections 3106, 3107, 3109, 5001-5004, 5101-5104, 5200, 5201, 5204, 5209, 5210 and adding Sections 5300-5363, effective 08/31/2015.

20.6.2.3106 APPLICATION FOR DISCHARGE PERMITS AND RENEWALS:

A. Any person who, before or on June 18, 1977, is discharging any of the water contaminants listed in [~~Section~~] 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall, within 120 days of receipt of written notice from the secretary that a discharge permit is required, or such longer time as the secretary shall for good cause allow, submit a discharge plan to the secretary for approval; such person may discharge without a discharge permit until 240 days after written notification by the secretary that a discharge permit is required or such longer time as the secretary shall for good cause allow.

B. Any person who intends to begin, after June 18, 1977, discharging any of the water contaminants listed in [~~Section~~] 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall notify the secretary giving the information enumerated in Subsection B of [~~Section~~] 20.6.2.1201 NMAC; the secretary shall, within 60 days, notify such person if a discharge permit is required; upon submission, the secretary shall review the discharge plan pursuant to [~~Sections~~] 20.6.2.3108 and 20.6.2.3109 NMAC. For good cause shown the secretary may allow such person to discharge without a discharge permit for a period not to exceed 120 days.

C. A proposed discharge plan shall set forth in detail the methods or techniques the discharger proposes to use or processes expected to naturally occur which will ensure compliance with this part. At least the following information shall be included in the plan:

(1) quantity, quality and flow characteristics of the discharge;

(2) location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;

(3) depth to and TDS concentration of the ground water most likely to be affected by the discharge;

(4) flooding potential of the site;

(5) location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;

(6) depth to and lithological description of rock at base of alluvium below the discharge site if such information is available;

(7) any additional information that may be necessary to demonstrate that the discharge permit will not result in concentrations in excess of the standards of [~~Section~~] 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use; detailed information on site geologic and hydrologic conditions may be required for a technical evaluation of the applicant's proposed discharge plan; and

(8) additional detailed information required for a technical evaluation of underground injection control wells as provided in [~~Sections~~] 20.6.2.5000 through [~~20.6.2. 5299~~] 20.6.2.5399 NMAC.

D. An applicant for a discharge permit shall pay fees as specified in [~~Section~~] 20.6.2.3114 and 20.6.2.5302 NMAC.

E. An applicant for a permit to dispose of or use septage or sludge, or within a source category designated by the commission, may be required by the secretary to file a disclosure statement as specified in 74-6-5.1 of the Water Quality Act.

F. If the holder of a discharge permit submits an application for discharge permit renewal at least 120 days before the discharge permit expires, and the discharger is not in violation of the discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge permit continued under this provision remains fully effective and enforceable. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [2-18-77, 6-26-80, 7-2-81, 9-20-82, 8-17-91, 12-1-95; 20.6.2.3106 NMAC - Rn, 20 NMAC 6.2.III.3106, 1-15-01; A, 12-1-01; A, 9-15-02; A, 8-31-15]

20.6.2.3107 MONITORING, REPORTING, AND OTHER REQUIREMENTS:

A. Each discharge plan shall provide for the following as the secretary may require:

(1) the installation, use, and maintenance of effluent monitoring devices;

(2) the installation, use, and maintenance of monitoring devices for the ground water most likely to be affected by the discharge;

(3) monitoring in the vadose zone;

(4) continuation of monitoring after cessation of operations;

(5) periodic submission to the secretary of results obtained pursuant to any monitoring requirements in the discharge permit and the methods used to obtain these results;

(6) periodic reporting to the secretary of any other information that may be required as set forth in the discharge permit;

(7) the discharger to retain for a period of at least five years any monitoring data required in the discharge permit;

(8) a system of monitoring and reporting to verify that the permit is achieving the expected results;

(9) procedures for detecting failure of the discharge system;

(10) contingency plans to cope with failure of the discharge permit or system;

(11) a closure plan to prevent the exceedance of standards of [~~Section~~] 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation which includes: a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent [~~and/or~~] or abate such contamination; the obligation to implement the closure plan as well as the requirements of the closure plan, if any is required, survives the termination or expiration of the permit; a closure plan for any underground injection control well must also incorporate the applicable requirements of [~~Sections~~] 20.6.2.5005, [~~and~~] 20.6.2.5209, and 20.6.2.5361 NMAC.

B. Sampling and analytical techniques shall conform with the following references unless otherwise specified by the secretary:

(1) standard methods for the examination of water and wastewater, latest edition, American public health association; or

(2) methods for chemical analysis of water and waste, and other publications of the analytical quality laboratory, EPA; or

(3) techniques of water resource investigations of the U.S. geological survey; or

(4) annual book of ASTM standards; Part 31; water, latest edition, American society for testing and materials; or

(5) federal register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or

(6) national handbook of recommended methods for water-data acquisition, latest edition, prepared cooperatively by agencies of the United States government under the sponsorship of the U.S. geological survey.

C. The discharger shall notify the secretary of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants.

D. Any discharger of effluent or leachate shall allow any authorized representative of the secretary to:

(1) inspect and copy records required by a discharge permit;

(2) inspect any treatment works, monitoring and analytical equipment;

(3) sample any effluent before or after discharge;

(4) use monitoring systems and wells installed pursuant to a discharge permit requirement in order to collect samples from ground water or the vadose zone.

E. Each discharge permit for an underground injection control well shall incorporate the applicable requirements of [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

[2-18-77, 9-20-82, 11-17-83, 12-1-95; 20.6.2.3107 NMAC - Rn, 20 NMAC 6.2.III.3107, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.3109 SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENT FOR ABATEMENT PLANS:

A. The department shall evaluate the application for a discharge permit, modification or renewal based on information contained in the department's administrative record. The department may request from the discharger, either before or after the issuance of any public notice, additional information necessary for the evaluation of the application. The administrative record shall consist of the application, any additional information required by the department, any information submitted by the discharger or the general public, other information considered by the department, the proposed approval or disapproval of an application for a discharge permit,

modification or renewal prepared pursuant to Subsection G of 20.6.2.3108 NMAC, and, if a public hearing is held, all of the documents filed with the hearing clerk, all exhibits offered into evidence at the hearing, the written transcript or tape recording of the hearing, any hearing officer report, and any post hearing submissions.

B. The secretary shall, within 30 days after the administrative record is complete and all required information is available, approve, approve with conditions or disapprove the proposed discharge permit, modification or renewal based on the administrative record. The secretary shall give written notice of the action taken to the applicant or permittee and any other person who participated in the permitting action who requests a copy in writing.

C. Provided that the other requirements of this part are met and the proposed discharge plan, modification or renewal demonstrates that neither a hazard to public health nor undue risk to property will result, the secretary shall approve the proposed discharge plan, modification or renewal if the following requirements are met:

(1) ground water that has a TDS concentration of 10,000 mg/l or less will not be affected by the discharge; or

(2) the person proposing to discharge demonstrates that approval of the proposed discharge plan, modification or renewal will not result in either concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use, except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(3) the proposed discharge plan conforms to either Subparagraph (a) or (b) below and Subparagraph (c) below:

(a) municipal, other domestic discharges, and discharges from sewerage systems handling only animal wastes: the effluent is entirely domestic, is entirely from a sewerage system handling only animal wastes or is from a municipality and conforms to the following:

(i) the discharge is from an impoundment or a leach field existing on February 18, 1977 which receives less than 10,000 gallons per day and the secretary has not found that the discharge may cause a hazard to public health; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment will not exceed 200 pounds per acre per year and that the effluent will meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop which is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(b) discharges from industrial, mining or manufacturing operations:

(i) the discharger has demonstrated that the amount of effluent that enters the subsurface from a surface impoundment will not exceed 0.5 acre-feet per acre per year; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment shall not exceed 200 pounds per acre per year and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop that is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(c) all discharges:

(i) the monitoring system proposed in the discharge plan includes adequate provision for sampling of effluent and adequate flow monitoring so that the amount being discharged onto or below the surface of the ground can be determined;

(ii) the monitoring data is reported to the secretary at a frequency determined by the secretary.

D. The secretary shall allow the following unless he determines that a hazard to public health may result:

(1) the weight of water contaminants in water diverted from any source may be discharged provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted; and provided further that contaminants

added as a result of the means of diversion shall not be considered to be part of the weight of water contaminants in the water diverted;

(2) the water contaminants leached from undisturbed natural materials may be discharged provided that:

(a) the contaminants were not leached as a product or incidentally pursuant to a solution mining operation; and

(b) the contaminants were not leached as a result of direct discharge into the vadose zone from municipal or industrial facilities used for the storage, disposal, or treatment of effluent;

(3) the water contaminants leached from undisturbed natural materials as a result of discharge into ground water from lakes used as a source of cooling water.

E. If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicates that this part is being or may be violated or that the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present, in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the water quality standards for interstate and intrastate streams in New Mexico are being or may be violated in surface water, due to the discharge, except as provided in Subsection D of 20.6.2.3109 NMAC.

(1) The secretary may require a discharge permit modification within the shortest reasonable time so as to achieve compliance with this part and to provide that any exceeding of standards in ground water at any place of withdrawal for present or reasonably foreseeable future use, or in surface water, due to the discharge except as provided in Subsection D of 20.6.2.3109 NMAC will be abated or prevented. If the secretary requires a discharge permit modification to abate water pollution:

(a) the abatement shall be consistent with the requirements and provisions of 20.6.2.4101, 20.6.2.4103, [~~Subsection~~] Subsections C and E of 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC; and

(b) the discharger may request of the secretary approval to carry out the abatement under 20.6.2.4000 through 20.6.2.4115 NMAC, in lieu of modifying the discharge permit; the discharger shall make the request in writing and shall include the reasons for the request.

(2) The secretary may terminate a discharge permit when a discharger fails to modify the permit in accordance with Paragraph (1) of Subsection E of 20.6.2.3109 NMAC.

(3) The secretary may require modification, or may terminate a discharge permit for a Class I [~~non-hazardous waste injection~~] well, a Class III well or other type of well specified in Subsection A of 20.6.2.5101 NMAC, pursuant to the requirements of Subsection I of 20.6.2.5101 NMAC.

F. If a discharge permit expires or is terminated for any reason and the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present in ground water, or that the water quality standards for interstate and intrastate streams in New Mexico are being or may be violated, the secretary may require the discharger to submit an abatement plan pursuant to 20.6.2.4104 and Subsection A of 20.6.2.4106 NMAC.

G. At the request of the discharger, a discharge permit may be modified in accordance with 20.6.2.3000 through 20.6.2.3114 NMAC.

H. The secretary shall not approve a proposed discharge plan, modification, or renewal for:

(1) any discharge for which the discharger has not provided a site and method for flow measurement and sampling;

(2) any discharge that will cause any stream standard to be violated;

(3) the discharge of any water contaminant which may result in a hazard to public health; or

(4) a period longer than five years, except that for new discharges, the term of the discharge permit approval shall commence on the date the discharge begins, but in no event shall the term of the approval exceed seven years from the date the permit was issued; for those permits expiring more than five years from the date of issuance, the discharger shall give prior written notification to the department of the date the discharge is to commence; the term of the permit shall not exceed five years from that date.

[2-18-77, 6-26-80, 9-20-82, 7-2-81, 3-3-86, 12-1-95, 11-15-96; 20.6.2.3109 NMAC - Rn, 20 NMAC 6.2.III.3109, 1-15-01; A, 12-1-01; A, 9-15-02; A, 7-16-06; A, 8-31-15]

20.6.2.5001 PURPOSE: The purpose of [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC controlling discharges from underground injection control wells is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because

of ground water inflow for uses designated in the New Mexico water quality standards. [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC include notification requirements, and requirements for discharges directly into the subsurface through underground injection control wells.
[20.6.2.5001 NMAC - N, 12-1-01; A, 8-31-15]

20.6.2.5002 UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

A. Underground injection control wells include the following.

(1) Any dug hole or well that is deeper than its largest surface dimension, where the principal function of the hole is emplacement of fluids.

(2) Any septic tank or cesspool used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste.

(3) Any subsurface distribution system, cesspool or other well which is used for the injection of wastes.

B. Underground injection control wells are classified as follows:

(1) Class I wells inject fluids beneath the lowermost formation that contains 10,000 milligrams per liter or less TDS. Class I hazardous or radioactive waste injection wells inject fluids containing any hazardous or radioactive waste as defined in 74-4-3 and 74-4A-4 NMSA 1978 or 20.4.1.200 NMAC (incorporating 40 C.F.R. Section 261.3), including any combination of these wastes. Class I non-hazardous waste injection wells inject non-hazardous and non-radioactive fluids, and they inject naturally-occurring radioactive material (NORM) as provided by [~~Section~~] 20.3.1.1407 NMAC.

(2) Class II wells inject fluids associated with oil and gas recovery;

(3) Class III wells inject fluids for extraction of minerals or other natural resources, including sulfur, uranium, metals, salts or potash by in situ extraction. This classification includes only in situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.

(4) Class IV wells inject fluids containing any radioactive or hazardous waste as defined in 74-4-3 and 74-4A-4 NMSA 1978, including any combination of these wastes, above or into a formation that contains 10,000 mg/l or less TDS.

(5) Class V wells inject a variety of fluids and are those wells not included in Class I, II, III or IV. Types of Class V wells include, but are not limited to, the following:

(a) domestic liquid waste injection wells:

(i) domestic liquid waste disposal wells used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC through subsurface fluid distribution systems or vertical wells;

(ii) septic system wells used to emplace liquid waste volumes greater than that regulated by 20.7.3 NMAC into the subsurface, which are comprised of a septic tank and subsurface fluid distribution system;

(iii) large capacity cesspools used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC, including drywells that sometimes have an open bottom [~~and/or~~] or perforated sides;

(b) industrial waste injection wells:

(i) air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling;

(ii) dry wells used for the injection of wastes into a subsurface formation;

(iii) geothermal energy injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electrical power;

(iv) stormwater drainage wells used to inject storm runoff from the surface into the subsurface;

(v) motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities;

(vi) car wash waste disposal wells used to inject fluids from motor vehicle washing activities;

(c) mining injection wells:

(i) stopes leaching wells used for solution mining of conventional mines;

(ii) brine injection wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;

(iii) backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether water injected is a radioactive waste or not;

(iv) injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale;

(d) ground water management injection wells:

(i) ground water remediation injection wells used to inject contaminated ground water that has been treated to ground water quality standards;

(ii) in situ ground water remediation wells used to inject a fluid that facilitates vadose zone or ground water remediation.

(iii) recharge wells used to replenish the water in an aquifer, including use to reclaim or improve the quality of existing ground water;

(iv) barrier wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality;

(v) subsidence control wells (not used for purposes of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

(vi) wells used in experimental technologies;

(e) agricultural injection wells - drainage wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality.

[20.6.2.5002 NMAC - N, 12-1-01; A, 8-1-14; A, 8-31-15]

20.6.2.5003 NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS: All operators of underground injection control wells, except those wells regulated under the Oil and Gas Act, the Geothermal Resources Conservation Act, and the Surface Mining Act, shall:

A. for existing underground injection control wells, submit to the secretary the information enumerated in Subsection C of [~~Section~~] 20.6.2.1201 NMAC of this part; provided, however, that if the information in Subsection C of [~~Section~~] 20.6.2.1201 NMAC has been previously submitted to the secretary and acknowledged by him, the information need not be resubmitted; and

B. operate and continue to operate in conformance with [~~Sections~~] 20.6.2.1 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC;

C. for new underground injection control wells, submit to the secretary the information enumerated in Subsection C of [~~Section~~] 20.6.2.1201 NMAC of this part at least 120 days prior to well construction.

[9-20-82, 12-1-95; 20.6.2.5300 NMAC - Rn, 20 NMAC 6.2.V.5300, 1-15-01; 20.6.2.5003 NMAC - Rn, 20.6.2.5300 NMAC, 12-1-01; A, 12-1-01; A, 9-15-02; A, 8-31-15]

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells.

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in 20.6.2.5300 through 20.6.2.5399 NMAC or this subsection.

(a) Class I [~~hazardous or~~] radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under [~~Section~~] 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Paragraph (1) of Subsection B [~~(1)~~] of [~~Section~~] 20.6.2.5002 NMAC.

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior

approval from the environmental protection agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" [~~(20 NMAC 7.1)~~] (20.7.10 NMAC), adopted by the environmental improvement board under the Environmental Improvement Act or the standard of [~~Section~~] 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with [~~Section~~] 20.6.2.5005 [~~NMAC~~] and [~~Section~~] 20.6.2.5209 NMAC.

[20.6.2.5004 NMAC - N, 12-1-01; A, 8-31-15]

20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Class I [~~non-hazardous waste injection~~] wells and Class III wells must meet the requirements of [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC in addition to other applicable requirements of the commission regulations. The secretary may also require that some Class IV and Class V wells comply with the requirements for Class I [~~non-hazardous waste injection~~] wells in [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC if the secretary determines that the additional requirements are necessary to prevent the movement of water contaminants from a specified injection zone into ground water having 10,000 mg/l or less TDS. No Class I [~~non-hazardous waste injection~~] well or Class III well may be approved which allows for movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to [~~Section~~] 20.6.2.5103 NMAC, or pursuant to a temporary designation as provided in Paragraph (2) of Subsection C of [~~Section~~] 20.6.2.5101 NMAC.

B. Operation of a Class I [~~non-hazardous waste injection~~] well or Class III well must be pursuant to a discharge permit meeting the requirements of [~~Sections~~] 20.6.2.3000 through 20.6.2.3999 NMAC and [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

C. Discharge permits for Class I [~~non-hazardous waste injection~~] wells, or Class III wells affecting ground water of 10,000 mg/l or less TDS submitted for secretary approval shall:

(1) receive an aquifer designation if required in [~~Section~~] 20.6.2.5103 NMAC prior to discharge permit issuance; or

(2) for Class III wells only, address the methods or techniques to be used to restore ground water so that upon final termination of operations including restoration efforts, ground water at any place of withdrawal for present or reasonably foreseeable future use will not contain either concentrations in excess of the standards of [~~Section~~] 20.6.2.3103 NMAC or any toxic pollutant; issuance of a discharge permit or project discharge permit for Class III wells that provides for restoration of ground water in accordance with the requirements of this subsection shall substitute for the aquifer designation provisions of [~~Section~~] 20.6.2.5103 NMAC; the approval shall constitute a temporary aquifer designation for a mineral bearing or producing aquifer, or portion thereof, to allow injection as provided for in the discharge permit; such temporary designation shall expire upon final termination of operations including restoration efforts.

D. The exemptions from the discharge permit requirement listed in [~~Section~~] 20.6.2.3105 NMAC do not apply to underground injection control wells except as provided below:

(1) wells regulated by the oil conservation division under the exclusive authority granted under Section 70-2-12 NMSA 1978 or under other sections of the "Oil and Gas Act";

(2) wells regulated by the oil conservation division under the "Geothermal Resources Act";

(3) wells regulated by the New Mexico coal surface mining bureau under the "Surface Mining Act";

(4) wells for the disposal of effluent from systems which are regulated under the "Liquid Waste Disposal and Treatment" regulations [~~(20 NMAC 7.3)~~] (20.7.3 NMAC) adopted by the environmental improvement board under the "Environmental Improvement Act".

E. Project permits for Class III wells.

(1) The secretary may consider a project discharge permit for Class III wells, if the wells are:

(a) within the same well field, facility site or similar unit;

(b) within the same aquifer and ore deposit;

(c) of similar construction;

(d) of the same purpose; and

(e) operated by a single owner or operator.

(2) A project discharge permit does not allow the discharger to commence injection in any individual operational area until the secretary approves an application for injection in that operational area (operational area approval).

(3) A project discharge permit shall:

(a) specify the approximate locations and number of wells for which operational area approvals are or will be sought with approximate time frames for operation and restoration (if restoration is required) of each area; and

(b) provide the information required under the following sections of this part, except for such additional site-specific information as needed to evaluate applications for individual operational area approvals: Subsection C of [~~Section~~] 20.6.2.3106, [~~Sections~~] 20.6.2.3107, 20.6.2.5204 through 20.6.2.5209, and Subsection B of [~~Section~~] 20.6.2.5210 NMAC.

(4) Applications for individual operational area approval shall include the following:

(a) site-specific information demonstrating that the requirements of this part are met; and

(b) information required under [~~Sections~~] 20.6.2.5202 through 20.6.2.5210 NMAC and not previously provided pursuant to Subparagraph (b) of Paragraph (3) of Subsection E of this section.

(5) Applications for project discharge permits and for operational area approval shall be processed in accordance with the same procedures provided for discharge permits under [~~Sections~~] 20.6.2.3000 through 20.6.2.3114 NMAC, allowing for public notice on the project discharge permit and on each application for operational area approval pursuant to [~~Section~~] 20.6.2.3108 NMAC with opportunity for public hearing prior to approval or disapproval.

(6) The discharger shall comply with additional requirements that may be imposed by the secretary pursuant to this part on wells in each new operational area.

F. If the holder of a discharge permit for a Class I [~~non-hazardous waste injection~~] well, or Class III well submits an application for discharge permit renewal at least 120 days before discharge permit expiration, and the discharger is in compliance with his discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

G. Discharge permit signatory requirements: No discharge permit for a Class I [~~non-hazardous waste injection~~] well or Class III well may be issued unless:

(1) the application for a discharge permit has been signed as follows:

(a) for a corporation: by a principal executive officer of at least the level of vice-president, or a representative who performs similar policy-making functions for the corporation who has authority to sign for the corporation; or

(b) for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(c) for a municipality, state, federal, or other public agency: by either a principal executive officer who has authority to sign for the agency, or a ranking elected official; and

(2) all reports required by Class I hazardous waste injection well permits and other information requested by the director pursuant to a Class I hazardous waste injection well permit shall be signed by a person described in Paragraph (1) of this subsection, or by a duly authorized representative of that person; a person is a duly authorized representative only if:

(a) the authorization is made in writing by a person described in Paragraph (1) of this subsection;

(b) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility; (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(c) the written authorization is submitted to the director.

(3) *Changes to authorization.* If an authorization under Paragraph (2) of this subsection is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Paragraph (2) of this subsection must be submitted to the director prior to or together with any reports, information, or applications to be signed by an authorized representative.

[~~(2)~~] (4) The signature [~~is~~] on an application, report or other information requested by the director must be directly preceded by the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

H. Transfer of Class I non-hazardous waste injection well and Class III well discharge permits.

(1) The transfer provisions of [~~Section~~] 20.6.2.3111 NMAC do not apply to a discharge permit for a Class I non-hazardous waste injection well or Class III well.

(2) A Class I non-hazardous waste injection well or Class III well discharge permit may be transferred if:

(a) the secretary receives written notice 30 days prior to the transfer date; and

(b) the secretary does not object prior to the proposed transfer date; the secretary may require modification of the discharge permit as a condition of transfer, and may require demonstration of adequate financial responsibility.

(3) The written notice required by Subparagraph [~~(b)~~] (a) of Paragraph (2) of Subsection [~~I~~] H above shall:

(a) have been signed by the discharger and the succeeding discharger, including an acknowledgement that the succeeding discharger shall be responsible for compliance with the discharge permit upon taking possession of the facility; and

(b) set a specific date for transfer of discharge permit responsibility, coverage and liability; and

(c) include information relating to the succeeding discharger's financial responsibility required by Paragraph (17) of Subsection B of [~~Section~~] 20.6.2.5210 NMAC.

I. Modification or termination of a discharge permit for a Class I [~~non-hazardous waste injection~~] well or Class III well: If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicate that this part are being or may be violated, the secretary may require modification or, if it is determined by the secretary that the modification may not be adequate, may terminate a discharge permit for a Class I [~~non-hazardous waste injection~~] well, or Class III well or well field, that was approved pursuant to the requirements of this under [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC for the following causes:

(1) noncompliance by the discharger with any condition of the discharge permit; or

(2) the discharger's failure in the discharge permit application or during the discharge permit review process to disclose fully all relevant facts, or the discharger's misrepresentation of any relevant facts at any time; or

(3) a determination that the permitted activity may cause a hazard to public health or undue risk to property and can only be regulated to acceptable levels by discharge permit modification or termination.

[9-20-82, 12-1-95, 11-15-96; 20.6.2.5101 NMAC - Rn, 20 NMAC 6.2.V.5101, 1-15-01; A, 12-1-01; A, 9-15-02; A, 8-1-14; A, 8-31-15]

20.6.2.5102 PRE-CONSTRUCTION REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Discharge permit requirement for Class I [~~non-hazardous waste injection~~] wells.

(1) Prior to construction of a Class I [~~non-hazardous waste injection~~] well or conversion of an existing well to a Class I [~~non-hazardous waste injection~~] well, an approved discharge permit is required that incorporates the requirements of [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC, except Subsection C of [~~Section~~] 20.6.2.5210 NMAC. As a condition of discharge permit issuance, the operation of the Class I [~~non-hazardous waste injection~~] well under the discharge permit will not be authorized until the secretary has:

(a) reviewed the information submitted for his consideration pursuant to Subsection C of [~~Section~~] 20.6.2.5210 NMAC; and

(b) determined that the information submitted demonstrates that the operation will be in compliance with this part and the discharge permit.

(2) If conditions encountered during construction represent a substantial change which could adversely impact ground water quality from those anticipated in the discharge permit, the secretary shall require a discharge permit modification or may terminate the discharge permit pursuant to Subsection I of [~~Section~~] 20.6.2.5101 NMAC, and the secretary shall publish public notice and allow for comments and hearing in accordance with [~~Section~~] 20.6.2.3108 NMAC.

B. Notification requirement for Class III wells.

(1) The discharger shall notify the secretary in writing prior to the commencement of drilling or construction of wells which are expected to be used for in situ extraction, unless the discharger has previously received a discharge permit or project discharge permit for the Class III well operation.

(a) Any person proposing to drill or construct a new Class III well or well field, or convert an existing well to a Class III well, shall file plans, specifications and pertinent documents regarding such construction or conversion, with the ground water quality bureau of the environment department.

(b) Plans, specifications, and pertinent documents required by this section, if pertaining to geothermal installations, carbon dioxide facilities, or facilities for the exploration, production, refinement or pipeline transmission of oil and natural gas, shall be filed instead with the oil conservation division.

(c) Plans, specifications and pertinent documents required to be filed under this section must be filed 90 days prior to the planned commencement of construction or conversion.

(d) The following plans, specifications and pertinent documents shall be provided with the notification:

(i) information required in Subsection C of [~~Section~~] 20.6.2.3106 NMAC;

(ii) a map showing the Class III wells which are to be constructed; the map must also show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, that are within the expected area of review ([~~Section~~] 20.6.2.5202 NMAC) of the Class III well or well field perimeter;

(iii) maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within one mile of the site, the position of such ground water within this area relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(iv) maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(v) the proposed formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation;

(vi) the proposed stimulation program;

(vii) the proposed injection procedure;

(viii) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(ix) proposed construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(x) information, as described in Paragraph (17) of Subsection B of [~~Section~~] 20.6.2.5210 NMAC, showing the ability of the discharger to undertake measures necessary to prevent groundwater contamination; and

(xi) a plugging and abandonment plan showing that the requirements of Subsections B, C and D of [~~Section~~] 20.6.2.5209 NMAC will be met.

(2) Prior to construction, the discharger shall have received written notice from the secretary that the information submitted under item 10 of Subparagraph (d) of Paragraph (1) of Subsection B of [~~Section~~] 20.6.2.5102 NMAC is acceptable. Within 30 days of submission of the above information the secretary shall notify the discharger that the information submitted is acceptable or unacceptable.

(3) Prior to construction, the secretary shall review said plans, specifications and pertinent documents and shall comment upon their adequacy of design for the intended purpose and their compliance with pertinent sections of this part. Review of plans, specifications and pertinent documents shall be based on the criteria

contained in [~~Section~~] 20.6.2.5205, Subsection E of [~~Section~~] 20.6.2.5209, and Subparagraph (d) of Paragraph (1) of Subsection B of [~~Section~~] 20.6.2.5102 NMAC.

(4) Within [~~thirty (30)~~] 30 days of receipt, the secretary shall issue public notice, consistent with Subsection B of [~~Section~~] 20.6.2.3108 NMAC, that notification was submitted pursuant to Subsection B of [~~Section~~] 20.6.2.5102 NMAC. The secretary shall allow a period of at least [~~thirty (30)~~] 30 days during which comments may be submitted. The public notice shall include:

(a) name and address of the proposed discharger;

(b) location of the discharge;

(c) brief description of the proposed activities;

(d) statement of the public comment period; and

(e) address and telephone number at which interested persons may obtain further information.

(5) The secretary shall comment in writing upon the plans and specifications within [~~sixty (60)~~] 60 days of their receipt by the secretary.

(6) Within [~~thirty (30)~~] 30 days after completion, the discharger shall submit written notice to the secretary that the construction or conversion was completed in accordance with submitted plans and specifications, or shall submit as-built plans detailing changes from the originally submitted plans and specifications.

(7) In the event a discharge permit application is not submitted or approved, all wells which may cause groundwater contamination shall be plugged and abandoned by the applicant pursuant to the plugging and abandonment plan submitted in the notification; these measures shall be consistent with any comments made by the secretary in his review. If the wells are not to be permanently abandoned and the discharger demonstrates that plugging at this time is unnecessary to prevent groundwater contamination, plugging pursuant to the notification is not required. Financial responsibility established pursuant to [~~Sections~~] 20.6.2.5000 through 20.6.2.5299 NMAC will remain in effect until the discharger permanently abandons and plugs the wells in accordance with the plugging and abandonment plan.

[9-20-82, 12-24-87, 12-1-95; 20.6.2.5102 NMAC - Rn, 20 NMAC 6.2.V.5102, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5103 DESIGNATED AQUIFERS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Any person may file a written petition with the secretary seeking commission consideration of certain aquifers or portions of aquifers as "designated aquifers". The purpose of aquifer designation is:

(1) for Class I [~~non-hazardous waste injection~~] wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS; or

(2) for Class III wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS, and not provide for restoration or complete restoration of that ground water pursuant to Paragraph (2) of Subsection C of [~~Section~~] 20.6.2.5101 NMAC.

B. The applicant shall identify (by narrative description, illustrations, maps or other means) and describe such aquifers, in geologic [~~and/or~~] and geometric terms (such as vertical and lateral limits and gradient) which are clear and definite.

C. An aquifer or portion of an aquifer may be considered for aquifer designation under Subsection A of this section, if the applicant demonstrates that the following criteria are met:

(1) it is not currently used as a domestic or agricultural water supply; and

(2) there is no reasonable relationship between the economic and social costs of failure to designate and benefits to be obtained from its use as a domestic or agricultural water supply because:

(a) it is situated at a depth or location which makes recovery of water for drinking or agricultural purposes economically or technologically impractical at present and in the reasonably foreseeable future; or

(b) it is already so contaminated that it would be economically or technologically impractical to render that water fit for human consumption or agricultural use at present and in the reasonably foreseeable future.

D. The petition shall state the extent to which injection would add water contaminants to ground water and why the proposed aquifer designation should be approved. For Class III wells, the applicant shall state whether and to what extent restoration will be carried out.

E. The secretary shall either transmit the petition to the commission within [~~sixty (60) days~~] 60 recommending that a public hearing be held, or refuse to transmit the petition and notify the applicant in writing citing reasons for such refusal.

F. If the secretary transmits the petition to the commission, the commission shall review the petition and determine to either grant or deny a public hearing on the petition. If the commission grants a public hearing, it shall issue a public notice, including the following information:

(1) name and address of the applicant;

(2) location, depth, TDS, areal extent, general description and common name or other identification of the aquifer for which designation is sought;

(3) nature of injection and extent to which the injection will add water contaminants to ground water; and

(4) address and telephone number at which interested persons may obtain further information.

G. If the secretary refuses to transmit the petition to the commission, then the applicant may appeal the secretary's disapproval of the proposed aquifer designation to the commission within [~~thirty (30)~~] 30 days, and address the issue of whether the proposed aquifer designation meets the criteria of Subsections A, B, C, and D of this section.

H. If the commission grants a public hearing, the hearing shall be held in accordance with the provisions of Section 74-6-6 NMSA 1978.

I. If the commission does not grant a public hearing on the petition, the aquifer designation shall not be approved.

J. After public hearing and consideration of all facts and circumstances included in Section 74-6-4(D) NMSA 1978, the commission may authorize the secretary to approve a proposed designated aquifer if the commission determines that the criteria of [~~Subsection~~] Subsections A, B, C, and D of this section are met.

K. Approval of a designated aquifer petition does not alleviate the applicant from complying with other sections of [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC, or of the responsibility for protection, pursuant to this part, of other nondesignated aquifers containing ground water having 10,000 mg/l or less TDS.

L. Persons other than the petitioner may add water contaminants as a result of injection into an aquifer designated for injection, provided the person receives a discharge permit pursuant to the requirements of [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC. Persons, other than the original petitioner or his designee, requesting addition of water contaminants as a result of injection into aquifers previously designated only for injection with partial restoration shall file a petition with the commission pursuant to the requirements of Subsections A, B, C, and D of this section.

[9-20-82, 12-1-95; 20.6.2.5103 NMAC - Rn, 20 NMAC 6.2.V.5103, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5104 WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Where a Class I [~~non-hazardous waste injection~~] well or a Class III well or well field, does not penetrate, or inject into or above, and which will not affect, ground water having 10,000 mg/l of less TDS, the secretary may:

(1) issue a discharge permit for a well or well field with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required by [~~Sections~~] 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC; or

(2) for Class III wells only, issue a discharge permit pursuant to the requirements of [~~Sections~~] 20.6.2.3000 through 20.6.2.3114 NMAC.

B. Authorization of a reduction in requirements under Subsection A of this section shall be granted only if injection will not result in an increased risk of movement of fluids into ground water having 10,000 mg/l or less TDS, except for fluid movement approved pursuant to [~~Section~~] 20.6.2.5103 NMAC.

[9-20-82, 12-1-95; 20.6.2.5104 NMAC - Rn & A, 20 NMAC 6.2.V.5104, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5200 TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

[12-1-95; 20.6.2.5200 NMAC - Rn, 20 NMAC 6.2.V.5200, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5201 PURPOSE: [~~Sections~~] 20.6.2.5200 through 20.6.2.5210 NMAC provide the technical criteria and performance standards for Class I [~~non-hazardous waste injection~~] wells and Class III wells. (20.6.2.5300 through 20.6.2.5399 NMAC provide certain additional technical and performance standards for Class I hazardous waste injection wells.)
[9-20-82; 20.6.2.5201 NMAC - Rn, 20 NMAC 6.2.V.5201, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5204 MECHANICAL INTEGRITY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. A Class I [~~non-hazardous waste injection~~] well or Class III well has mechanical integrity if there is no detectable leak in the casing, tubing or packer which the secretary considers to be significant at maximum operating temperature and pressure; and no detectable conduit for fluid movement out of the injection zone through the well bore or vertical channels adjacent to the well bore which the secretary considers to be significant.

B. Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that a Class I [~~non-hazardous waste injection~~] well or Class III well has mechanical integrity. The demonstration shall be made through use of the following tests:

(1) for evaluation of leaks:

(a) monitoring of annulus pressure (after an initial pressure test with liquid or gas before operation commences); or

(b) pressure test with liquid or gas;

(2) for determination of conduits for fluid movement:

(a) the results of a temperature or noise log; or

(b) where the nature of the casing used for Class III wells precludes use of these logs, cementing records and an appropriate monitoring program as the secretary may require which will demonstrate the presence of adequate cement to prevent such movement;

(3) other appropriate tests as the secretary may require.

C. The secretary may consider the use by the discharger of equivalent alternative test methods to determine mechanical integrity. The discharger shall submit information on the proposed test and all technical data supporting its use. The secretary may approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. For Class III wells this demonstration may be made by submission of adequate monitoring data after the initial mechanical integrity tests.

D. In conducting and evaluating the tests enumerated in this section or others to be allowed by the secretary, the discharger and the secretary shall apply methods and standards generally accepted in the affected industry. When the discharger reports the results of mechanical integrity tests to the secretary, he shall include a description of the test(s), the method(s) used, and the test results. In making an evaluation, the secretary's review shall include monitoring and other test data submitted since the previous evaluation.
[9-20-82, 12-1-95; 20.6.2.5204 NMAC - Rn, 20 NMAC 6.2.V.5204, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I [~~non-hazardous waste injection~~] well or a Class III well that meets the requirements of Subsection C of [~~Section~~] 20.6.2.3109, [~~and~~] Subsection C of [~~Section~~] 20.6.2.5101, [~~NMAC~~] and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

B. Prior to abandonment of a well used in a Class I [~~non-hazardous waste injection~~] well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

C. Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

D. Placement of the plugs shall be accomplished by one of the following:

(1) the balance method; or

(2) the dump bailer method; or

(3) the two-plug method; or

(4) an equivalent method with the approval of the secretary.

E. The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan:

(1) the type and number of plugs to be used;

(2) the placement of each plug, including the elevation of the top and bottom;

(3) the type, grade and quantity of cementing slurry to be used;

(4) the method of placement of the plugs;

(5) the procedure to be used to plug and abandon the well; and

(6) such other factors that may affect the adequacy of the plan.

F. The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

[9-20-82, 12-1-95; 20.6.2.5209 NMAC - Rn, 20 NMAC 6.2.V.5209, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5210 INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. This section sets forth the information to be considered by the secretary in authorizing construction and use of a Class I [~~non-hazardous waste injection~~] well or Class III well or well field. Certain maps, cross-sections, tabulations of all wells within the area of review, and other data may be included in the discharge permit application submittal by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

B. Prior to the issuance of a discharge permit or project discharge permit allowing construction of a new Class I [~~non-hazardous waste injection~~] well, operation of an existing Class I [~~non-hazardous waste injection~~] well, or operation of a new or existing Class III well or well field, or conversion of any well to injection use, the secretary shall consider the following:

(1) information required in Subsection C of [~~Section~~] 20.6.2.3106 NMAC;

(2) a map showing the Class I [~~non-hazardous waste injection~~] well, or Class III well or well fields, for which approval is sought and the applicable area of review; within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

(3) a tabulation of data on all wells within the area of review which may penetrate into the proposed injection zone; such data shall include, as available, a description of each well's type, the distance and direction to the injection well or well field, construction, date drilled, location, depth, record of plugging [~~and/or~~] or completion, and any additional information the secretary may require;

(4) for wells within the area of review which penetrate the injection zone, but are not properly completed or plugged, the corrective action proposed to be taken under [~~Section~~] 20.6.2.5203 NMAC;

(5) maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within the area of review, the position of such ground water within the area of review relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(6) maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(7) generalized maps and cross-sections illustrating the regional geologic setting;

(8) proposed operating data, including:

(a) average and maximum daily flow rate and volume of the fluid to be injected;

(b) average and maximum injection pressure;

(c) source of injection fluids and an analysis or description, whichever the secretary requires, of their chemical, physical, radiological and biological characteristics;

(9) results of the formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation, provided that the secretary may issue a conditional approval of a discharge permit if he finds that further formation testing is necessary for final approval;

(10) expected pressure changes, native fluid displacement, and direction of movement of the injected fluid;

(11) proposed stimulation program;

(12) proposed or actual injection procedure;

(13) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(14) construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(15) contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to [~~Section~~] 20.6.2.5103 NMAC;

(16) plans, including maps, for meeting the monitoring requirements of [~~Section~~] 20.6.2.5207 NMAC; and

(17) the ability of the discharger to undertake measures necessary to prevent contamination of ground water having 10,000 mg/l or less TDS after the cessation of operation, including the proper closing, plugging and abandonment of a well, ground water restoration if applicable, and any post-operational monitoring as may be needed; methods by which the discharger shall demonstrate the ability to undertake these measures shall include submission of a surety bond or other adequate assurances, such as financial statements or other materials acceptable to the secretary, such as: (1) a surety bond; (2) a trust fund with a New Mexico bank in the name of the state of New Mexico, with the state as beneficiary; (3) a non-renewable letter of credit made out to the state of New Mexico; (4) liability insurance specifically covering the contingencies listed in this paragraph; or (5) a performance bond, generally in conjunction with another type of financial assurance; such bond or materials shall be approved and executed prior to discharge permit issuance and shall become effective upon commencement of construction; if an adequate bond is posted by the discharger to a federal or another state agency, and this bond covers all of the measures referred to above, the secretary shall consider this bond as satisfying the bonding requirements of [~~Sections~~] 20.6.2.5000 through 20.6.2.5299 NMAC wholly or in part, depending upon the extent to which such bond is adequate to ensure that the discharger will fully perform the measures required hereinabove.

C. Prior to the secretary's approval that allows the operation of a new or existing Class I [~~non-hazardous waste injection~~] well or Class III well or well field, the secretary shall consider the following:

(1) update of pertinent information required under Subsection B of [~~Section~~] 20.6.2.5210 NMAC;

(2) all available logging and testing program data on the well;

(3) the demonstration of mechanical integrity pursuant to [~~Section~~] 20.6.2.5204 NMAC;

(4) the anticipated maximum pressure and flow rate at which the permittee will operate;

(5) the results of the formation testing program;

(6) the physical, chemical, and biological interactions between the injected fluids and fluids in the injection zone, and minerals in both the injection zone and the confining zone; and

(7) the status of corrective action on defective wells in the area of review.

[9-20-82, 12-24-87, 12-1-95; 20.6.2.5210 NMAC - Rn, 20 NMAC 6.2.V.5210, 1-15-01; A, 12-1-01; A, 8-31-15]

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in 20.6.2.5300 through 20.6.2.5399 NMAC, Class I hazardous waste wells are subject to the minimum permit requirements for all Class I wells in 20.6.2.5000 through 20.6.2.5299 NMAC, in addition to the requirements of 20.6.2.5300 through 20.6.2.5399 NMAC. To the extent any requirement in 20.6.2.5300 through 20.6.2.5399 NMAC conflicts with a requirement of 20.6.2.5000 through 20.6.2.5299 NMAC, Class I hazardous waste injection wells must comply with 20.6.2.5300 through 20.6.2.5399 NMAC.

B. Class I hazardous waste injection wells are only authorized for use by petroleum refineries for the waste generated by the refinery ("generator").

C. The New Mexico energy, minerals and natural resources department, oil conservation division will administer and oversee all permitting of Class I hazardous waste wells pursuant to 20.6.2.5300 through 20.6.2.5399 NMAC.

[20.6.2.5300 NMAC - N, 8-31-15]

20.6.2.5301 DEFINITIONS: As used in 20.6.2.5300 through 20.6.2.5399 NMAC:

A. "**cone of influence**" means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into groundwater of the state of New Mexico;

B. "**director**" means the director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

C. "**existing well**" means a Class I hazardous waste injection well which has become a Class I hazardous waste injection well as a result of a change in the definition of the injected waste which would render the waste hazardous under 20.4.1.200 NMAC (incorporating 40 C.F.R. Section 261.3);

D. "**groundwater of the state of New Mexico**" means, consistent with 20.6.2.5001 NMAC, an aquifer that contains ground water having a TDS concentration of 10,000 mg/l or less;

E. "**injection interval**" means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced;

F. "**new well**" means any Class I hazardous waste injection well which is not an existing well;

G. "**transmissive fault or fracture**" is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

[20.6.2.5301 NMAC - N, 8-31-15]

20.6.2.5302 FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of 20.6.2.3114 NMAC.

A. *Filing Fee.* Every facility submitting a discharge permit application for approval of a Class I hazardous waste injection well shall pay a filing fee of $100 to the water quality management fund at the time the permit application is submitted. The filing fee is nonrefundable.

B. *Permit fee.*

(1) Every facility submitting a discharge permit application for approval of a Class I hazardous waste injection well shall pay a permit fee of $30,000 to the water quality management fund. The permit fee may be paid in a single payment at the time of permit approval or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit approval. Subsequent installments shall be remitted yearly thereafter. The permit or permit application review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) Facilities applying for permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. *Annual administration fee.* Every facility that receives a Class I hazardous waste injection well permit shall pay an annual administrative fee of $20,000 to the water quality management fund. The initial administrative fee shall be remitted one year after commencement of disposal operations pursuant to the permit. Subsequent administrative fees shall be remitted annually thereafter.

D. *Renewal fee.*

(1) Every facility submitting a discharge permit application for renewal of a Class I hazardous waste injection well shall pay a renewal fee of $10,000 to the water quality management fund. The renewal fee may be paid in a single payment at the time of permit renewal or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit renewal. Subsequent installments shall be remitted yearly thereafter. The permit or permit renewal review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) The director may waive or reduce fees for discharge permit renewals which require little or no cost for investigation or issuance.

E. *Modification fees.*

(1) Every facility submitting an application for a discharge permit modification of a Class I hazardous waste injection well will be assessed a filing fee plus a modification fee of $10,000 to the water quality management fund.

(2) Every facility submitting an application for other changes to a Class I hazardous waste injection well discharge permit will be assessed a filing fee plus a minor modification fee of $1,000 to the water quality management fund.

(3) Applications for both renewal and modification shall pay a filing fee plus renewal fee.

(4) If the director requires a discharge permit change as a component of an enforcement action, the facility shall pay the applicable modification fee. If the director requires a discharge permit change outside the context of an enforcement action, the facility shall not be assessed a fee.

(5) The director may waive or reduce fees for discharge permit changes which require little or no cost for investigation or issuance.

F. *Financial assurance fees.*

(1) Facilities with approved Class I hazardous waste injection well permits shall pay the financial assurance fees specified in Table 2 of 20.6.2.3114 NMAC.

(2) Facilities relying on the corporate guarantee for financial assurance shall pay an additional fee of $5,000 to the water quality management fund.
[20.6.2.5302 NMAC - N, 8-31-15]

20.6.2.5303 CONVERSION OF EXISTING INJECTION WELLS: An existing Class I non-hazardous waste injection well may be converted to a Class I hazardous waste injection well provided the well meets the modeling, design, compatibility, and other requirements set forth in 20.6.2.5300 through 20.6.2.5399 NMAC and the permittee receives a Class I hazardous waste permit pursuant to those sections.
[20.6.2.5303 NMAC - N, 8-31-15]

20.6.2.5304 - 20.6.2.5309: [RESERVED]

20.6.2.5310 REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

A. *Applicability.* The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also Subparagraph (b) of Paragraph (3) of Subsection A of 20.6.2.5004 NMAC.)

B. *Authorization.* The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for authorization to inject as specified in 20.6.2.5102 NMAC within six months after the approval or promulgation of the state UIC program.

C. *Requirements.* In addition to complying with the applicable requirements of this part, the owner or operator of each facility meeting the requirements of Subsection B of this section, shall comply with the following.

(1) *Notification.* The owner or operator shall comply with the notification requirements of 42 U.S.C. Section 6930.

(2) *Identification number.* The owner or operator shall comply with the requirements of 20.4.1.500 NMAC (incorporating 40 CFR Section 264.11).

(3) *Manifest system.* The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in 20.4.1.500 NMAC (incorporating 40 CFR Section 264.71).

(4) *Manifest discrepancies.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.72).

(5) *Operating record.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Sections 264.73(a), (b)(1), and (b)(2)).

(6) *Annual report.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(7) *Unmanifested waste report.* The owner or operator shall comply with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of 20.4.1.500 NMAC (incorporating 40 CFR Section 264.16).

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in 20.6.2.5209 NMAC.
[20.6.2.5310 NMAC - N, 8-31-15]

20.6.2.5311 - 20.6.2.5319: [RESERVED]

20.6.2.5320 ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS): Except as otherwise provided, the regulations of the United States environmental protection agency set forth in 40 CFR Part 144, Subpart F are hereby incorporated by reference.
[20.6.2.5320 NMAC - N, 8-31-15]

20.6.2.5321 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS: Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following term defined in 40 CFR Section 144.61 has the meaning set forth herein, in lieu of the meaning set forth in 40 CFR Section 144.61: "plugging and abandonment plan" means the plan for plugging and abandonment prepared in accordance with the requirements of 20.6.2.5341 NMAC.

B. The following terms not defined in 40 CFR Part 144, Subsection F have the meanings set forth herein when the terms are used in this part:

(1) "administrator," "regional administrator" and other similar variations means the director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

(2) "United States environmental protection agency" or "EPA" means New Mexico energy, minerals and natural resources department, oil conservation division or OCD, except when used in 40 CFR Section 144.70(f).

C. The following provisions of 40 CFR Part 144, Subpart F are modified in 20.6.2.5321 NMAC:

(1) cross references to 40 CFR Part 144 shall be replaced by cross references to 20.6.2.5300 through 20.6.2.5399 NMAC;

(2) the cross reference to Sections 144.28 and 144.51 in Section 144.62(a) shall be replaced by a cross reference to 20.6.2.5341 NMAC;

(3) the cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H shall be modified to include cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H and 20.4.1.500 and 20.4.1.600 NMAC;

(4) references to EPA identification numbers in financial assurance documents shall be replaced by references to API well numbers (US well numbers);

(5) the first sentence of 40 CFR Section 144.63(f)(1) shall be replaced with the following sentence: "An owner or operator may satisfy the requirements of this section by obtaining a guarantee from a corporate parent that meets the requirements of 40 CFR Section 144.63(f)(10), including the guarantor meeting the requirements for the owner or operator under the financial test specified in this paragraph.";

(6) trust agreements prepared in accordance with 40 CFR Section 144.70(a) must state that they will be administered, construed, and enforced according to the laws of New Mexico;

(7) surety companies issuing bonds prepared in accordance with 40 CFR Section 144, Subpart F must be registered with the New Mexico office of superintendent of insurance;

D. The following provisions of 40 CFR Part 144, Subpart F are omitted from 20.6.2.5320 NMAC:

(1) Section 144.65;

(2) Section 144.66;

(3) the third sentence in 40 CFR Section 144.63(h).

[20.6.2.5321 NMAC - N, 8-31-15]

20.6.2.5322 - 20.6.2.5340 [RESERVED]

[20.6.2.5322 - 20.6.2.5340 NMAC - N, 8-31-15]

20.6.2.5341 CONDITIONS APPLICABLE TO ALL PERMITS: The following conditions apply to all Class I hazardous permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

A. *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the New Mexico Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in a variance issued under 20.6.2.1210 NMAC.

B. *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal pursuant to Subsection F of 20.6.2.3106 NMAC.

C. *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the

permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F. *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

H. *Duty to provide information.* The permittee shall furnish to the director, within a time specified, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the director, upon request, copies of records required to be kept by this permit.

I. *Duty to provide notice.* Public notice, when required, shall be provided as set forth in 20.6.2.3108 NMAC except that the following notice shall be provided in lieu of the notice required by Paragraph (2) of Subsection B of 20.6.2.3108 NMAC: a written notice must be sent by certified mail, return receipt requested, to all surface and mineral owners of record within a ½ mile radius of the proposed well or wells.

J. *Inspection and entry.* The permittee shall allow the director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the 20.6.2.5300 through 20.6.2.5399 NMAC, any substances or parameters at any location.

K. *Monitoring and records.*

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(a) calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, or application; this period may be extended by request of the director at any time; and

(b) the nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under 20.6.2.5351 through 20.6.2.5363 NMAC; the director may require the owner or operator to deliver the records to the director at the conclusion of the retention period.

(3) Records of monitoring information shall include:

(a) the date, exact place, and time of sampling or measurements;

(b) the individual(s) who performed the sampling or measurements;

(c) the date(s) analyses were performed;

(d) the individual(s) who performed the analyses;

(e) the analytical techniques or methods used; and

(f) the results of such analyses.

L. *Signatory requirement.* All applications, reports, or information submitted to the director shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC.)

M. *Reporting requirements.*

(1) *Planned changes.* The permittee shall give notice to the director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(4) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(5) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(a) any monitoring or other information which indicates that any contaminant may cause an endangerment to groundwater of the state of New Mexico; or

(b) any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between groundwater of the state of New Mexico; any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances; a written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances; the written submission shall contain a description of the noncompliance and its cause; the area affected by the noncompliance, including any groundwater of the state of New Mexico; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; the date and time the permittee became aware of the noncompliance; and steps taken or planned to reduce, remediate, eliminate, and prevent reoccurrence of the noncompliance.

(6) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under Paragraphs (3), (4), and (5) of Subsection M of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph (5) of Subsection M of this section.

(7) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the director, it shall promptly submit such facts or information.

N. *Requirements prior to commencing injection.* A new injection well may not commence injection until construction is complete; and

(1) the permittee has submitted notice of completion of construction to the director; and

(2) the director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or the permittee has not received notice from the director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in Paragraph (1) of Subsection N of this section, in which case prior inspection or review is waived and the permittee may commence injection; the director shall include in his notice a reasonable time period in which he shall inspect the well.

O. The permittee shall notify the director at such times as the permit requires before conversion or abandonment of the well.

P. The permittee shall meet the requirements of 20.6.2.5209 NMAC.

Q. *Plugging and abandonment report.* Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the director. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) a statement that the well was plugged in accordance with the plan previously submitted to the director; or

(2) where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the director, specifying the differences.

R. *Duty to establish and maintain mechanical integrity.*

(1) The permittee shall meet the requirements of 20.6.2.5204 NMAC.

(2) When the director determines that a Class I hazardous well lacks mechanical integrity pursuant to 20.6.2.5204 NMAC, the director shall give written notice of the director's determination to the owner or operator. Unless the director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the director's determination. The director may allow plugging of the well pursuant to the requirements of 20.6.2.5209 NMAC or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between groundwater of the state of New Mexico caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the director that the owner or operator has demonstrated mechanical integrity pursuant to 20.6.2.5204 and 20.6.2.5358 NMAC.

(3) The director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Subsection A of 20.6.2.5204 NMAC to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between groundwater of the state of New Mexico.

S. *Transfer of a permit.* The operator shall not transfer a permit without the director's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25% or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the director denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after receipt of the notice. Until the director approves the transfer and the required financial assurance is in place, the director shall not release the transferor's financial assurance.

[20.6.2.5341 NMAC - N, 8-31-15]

20.6.2.5342 ESTABLISHING PERMIT CONDITIONS:

A. In addition to conditions required in 20.6.2.5341 NMAC, the director shall establish conditions, as required on a case-by-case basis under Subsection H of 20.6.2.3109 NMAC, Subsection A of 20.6.2.5343 NMAC, and 20.6.2.5344 NMAC. Permits for owners or operators of hazardous waste injection wells shall also include conditions meeting the requirements of 20.6.2.5310 NMAC, Paragraphs (1) and (2) of Subsection A of this section, and 20.6.2.5351 through 20.6.2.5363 NMAC.

(1) *Financial responsibility.*

(a) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the director until:

(i) the well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Subsection P of 20.6.2.5341 NMAC, and 20.6.2.5209 NMAC, and submitted a plugging and abandonment report pursuant to Subsection Q of 20.6.2.5341 NMAC; or

(ii) the well has been converted in compliance with the requirements of Subsection O of 20.6.2.5341 NMAC; or

(iii) the transferor of a permit has received notice from the director that the transfer has been approved and that the transferee's required financial assurance is in place.

(b) The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of 20.6.2.5320 NMAC.

(2) *Additional conditions.* The director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into groundwater of the state of New Mexico.

B. *Applicable requirements.*

(1) In addition to conditions required in all permits the director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of this part.

(2) An applicable requirement is a state statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit.

(3) New or renewed permits, and to the extent allowed under 20.6.2.3109 NMAC modified or terminated permits, shall incorporate each of the applicable requirements referenced in 20.6.2.5342 NMAC.

C. *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

[20.6.2.5342 NMAC - N, 8-31-15]

20.6.2.5343 SCHEDULE OF COMPLIANCE:

A. *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with this part.

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit.

(2) *Interim dates.* Except as provided in Subparagraph (b) of Paragraph (1) of Subsection B of this section, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(a) The time between interim dates shall not exceed one year.

(b) If the time necessary for completion of any interim requirement is more than one year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if Paragraph (1) of Subsection A of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

B. *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows.

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(a) the permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(b) the permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the director may issue or modify a permit to contain two schedules as follows:

(a) both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(b) one schedule shall lead to timely compliance with applicable requirements;

(c) the second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(d) each permit containing two schedules shall include a requirement that after the permittee has made a final decision under Subparagraph (a) of Paragraph (3) of Subsection B of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the director, such as a resolution of the board of directors of a corporation.

[20.6.2.5343 NMAC - N, 8-31-15]

20.6.2.5344 REQUIERMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS: All permits shall specify:

A. requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

B. required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

C. applicable reporting requirements based upon the impact of the regulated activity and as specified in 20.6.2.5359 NMAC; reporting shall be no less frequent than specified in the above regulations.

[20.6.2.5344 NMAC - N, 8-31-15]

20.6.2.5345 - 20.6.2.5350: [RESERVED]

20.6.2.5351 APPLICABILITY: 20.6.2.5351 through 20.6.2.5363 NMAC establish criteria and standards for underground injection control programs to regulate Class I hazardous waste injection wells. Unless otherwise noted, these sections supplement the requirements of 20.6.2.5000 through 20.6.2.5299 NMAC and apply instead of any inconsistent requirements for Class I non-hazardous waste injection wells.

[20.6.2.5351 NMAC - N, 8-31-15]

20.6.2.5352 MINIMUM CRITERIA FOR SITING:

A. All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore groundwater of the state of New Mexico.

B. The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The director shall determine geologic suitability based upon:

(1) an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

(3) a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

C. Class I hazardous waste injection wells shall be sited such that:

(1) the injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into groundwater of the state of New Mexico; and

(2) the confining zone:

(a) is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into groundwater of the state of New Mexico; and

(b) contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

D. The owner or operator shall demonstrate to the satisfaction of the director that:

(1) the confining zone is separated from the base of the lowermost groundwater of the state of New Mexico by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for groundwater of the state of New Mexico in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost groundwater of the state of New Mexico, considering density effects, injection pressures and any significant pumping in the overlying groundwater of the state of New Mexico; or

(3) there is no groundwater of the state of New Mexico present.

(4) The director may approve a site which does not meet the requirements in Paragraphs (1), (2), or (3) of Subsections D of this section if the owner or operator can demonstrate to the director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of groundwater of the state of New Mexico.

[20.6.2.5352 NMAC - N, 8-31-15]

20.6.2.5353 AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of 20.6.2.5202 NMAC. The area of review for Class I hazardous waste injection wells shall be a two-mile radius around the well bore. The director may specify a larger area of review based on the calculated cone of influence of the well.

[20.6.2.5353 NMAC - N, 8-31-15]

20.6.2.5354 CORRECTIVE ACTION FOR WELLS IN THE AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of 20.6.2.5203 NMAC.

A. The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the director outlining the protocol used to:

(1) identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) determine whether wells are adequately completed or plugged.

B. The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in Subsection A of 20.6.2.5360 NMAC:

(1) a tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) a description of each well or type of well and any records of its plugging or completion.

C. For wells that the director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such

steps or modification as are necessary to prevent movement of fluids into or between groundwater of the state of New Mexico. Where the plan is adequate, the director shall incorporate it into the permit as a condition. Where the director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in Subsection E of this section), the director shall:

(1) require the applicant to revise the plan;

(2) prescribe a plan for corrective action as a condition of the permit; or

(3) deny the application.

D. Requirements.

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under Subsection C of this section. Any such compliance schedule shall provide for compliance no later than two years following issuance of the permit and shall require observance of appropriate pressure limitations under Paragraph (3) of Subsection D until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between groundwater of the state of New Mexico. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

E. In determining the adequacy of corrective action proposed by the applicant under Subsection C of this section and in determining the additional steps needed to prevent fluid movement into and between groundwater of the state of New Mexico, the following criteria and factors shall be considered by the director:

(1) nature and volume of injected fluid;

(2) nature of native fluids or byproducts of injection;

(3) geology;

(4) hydrology;

(5) history of the injection operation;

(6) completion and plugging records;

(7) closure procedures in effect at the time the well was closed;

(8) hydraulic connections with groundwater of the state of New Mexico;

(9) reliability of the procedures used to identify abandoned wells; and

(10) any other factors which might affect the movement of fluids into or between groundwater of the state of New Mexico.

[20.6.2.5354 NMAC - N, 8-31-15]

20.6.2.5355 CONSTRUCTION REQUIREMENTS:

A. *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) prevent the movement of fluids into or between groundwater of the state of New Mexico or into any unauthorized zones;

(2) permit the use of appropriate testing devices and workover tools; and

(3) permit continuous monitoring of injection tubing and long string casing as required pursuant to Subsection F of 20.6.2.5357 NMAC.

B. *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American petroleum institute, ASTM, or comparable standards acceptable to the director.

C. *Casing and cementing of new wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between groundwater of the state of New Mexico, and to

prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the director shall consider the following information as required by 20.6.2.5360 NMAC:

(a) depth to the injection zone;

(b) injection pressure, external pressure, internal pressure and axial loading;

(c) hole size;

(d) size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification and construction material);

(e) corrosiveness of injected fluid, formation fluids and temperature;

(f) lithology of injection and confining zones;

(g) type or grade of cement; and

(h) quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains groundwater of the state of New Mexico and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The director may require more than 120% when the geology or other circumstances warrant it.

(3) At least one long string casing, using a sufficient number of centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(a) of sufficient quantity and quality to withstand the maximum operating pressure; and

(b) in a quantity no less than 120% of the calculated volume necessary to fill the annular space; the director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(a) the maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(b) the maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

D. *Tubing and packer.*

(1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(a) depth of setting;

(b) characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(c) injection pressure;

(d) annular pressure;

(e) rate (intermittent or continuous), temperature and volume of injected fluid;

(f) size of casing; and

(g) tubing tensile, burst, and collapse strengths.

(3) The director may approve the use of a fluid seal if he determines that the following conditions are met:

(a) the operator demonstrates that the seal will provide a level of protection comparable to a packer;

(b) the operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(c) the permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(d) the design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(e) a secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

[20.6.2.5355 NMAC - N, 8-31-15]

20.6.2.5356 LOGGING, SAMPLING, AND TESTING PRIOR TO NEW WELL OPERATION:

A. During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in 20.6.2.5355 NMAC, and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the director. At a minimum, such logs and tests shall include:

(1) deviation checks during drilling on all holes constructed by drilling pilot holes which are enlarged by reaming or another method; such checks shall be at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(2) such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses; at a minimum, the following logs shall be required in the following situations:

(a) upon installation of the surface casing:

(i) resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(ii) a cement bond and variable density log, and a temperature log after the casing is set and cemented;

(b) upon installation of the long string casing:

(i) resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(ii) a cement bond and variable density log, and a temperature log after the casing is set and cemented;

(c) the director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) a mechanical integrity test consisting of:

(a) a pressure test with liquid or gas;

(b) a radioactive tracer survey;

(c) a temperature or noise log;

(d) a casing inspection log, if required by the director; and

(e) any other test required by the director.

B. Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The director may require the owner or operator to core other formations in the borehole.

C. The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

D. At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) fracture pressure;

(2) other physical and chemical characteristics of the injection and confining zones; and

(3) physical and chemical characteristics of the formation fluids in the injection zone.

E. Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(1) a pump test; or

(2) injectivity tests.

F. The director shall have the opportunity to witness all logging and testing required by 20.6.2.5351 through 20.6.2.5363 NMAC. The owner or operator shall submit a schedule of such activities to the director 30 days prior to conducting the first test.

[20.6.2.5356 NMAC - N, 8-31-15]

20.6.2.5357 OPERATING REQUIREMENTS:

A. Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into groundwater of the state of New Mexico.

B. Injection between the outermost casing protecting groundwater of the state of New Mexico and the well bore is prohibited.

C. The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

D. The owner or operator shall maintain mechanical integrity of the injection well at all times.

E. Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) conditions limiting the temperature, pH or acidity of the injected waste; and

(2) procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

F. The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the director exceed a range or gradient specified in the permit; or

(2) automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the director exceed a rate or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

G. If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under Subsection F of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) cease injection of waste fluids unless authorized by the director to continue or resume injection;

(2) take all necessary steps to determine the presence or absence of a leak; and

(3) notify the director within 24 hours after the alarm or shutdown.

H. If a loss of mechanical integrity is discovered pursuant to Subsection G of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) immediately cease injection of waste fluids;

(2) take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(3) notify the director within 24 hours after loss of mechanical integrity is discovered;

(4) notify the director when injection can be expected to resume; and

(5) restore and demonstrate mechanical integrity to the satisfaction of the director prior to resuming injection of waste fluids.

I. Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(1) the owner or operator shall immediately case injection of waste fluids, and:

(a) notify the director within 24 hours of obtaining such evidence;

(b) take all necessary steps to identify and characterize the extent of any release;

(c) comply with any remediation plan specified by the director;

(d) implement any remediation plan approved by the director; and

(e) where such release is into groundwater of the state of New Mexico currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger groundwater of the state of New Mexico.

J. The owner or operator shall notify the director and obtain his approval prior to conducting any well workover.

[20.6.2.5357 NMAC - N, 8-31-15]

20.6.2.5358 TESTING AND MONITORING REQUIREMENTS: Testing and monitoring requirements shall at a minimum include.

A. Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(a) the parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(b) the test methods that will be used to test for these parameters; and

(c) the sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

B. Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in 20.6.2.5352 NMAC.

C. Compatibility of well materials.

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under Subsection B of 20.6.2.5355 NMAC.

(2) The director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(a) placing coupons of the well construction materials in contact with the waste stream; or

(b) routing the waste stream through a loop constructed with the material used in the well; or

(c) using an alternative method approved by the director.

(3) If a corrosion monitoring program is required:

(a) the test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation; and

(b) the owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in Subsection B of 20.6.2.5355 NMAC.

D. Periodic mechanical integrity testing. In fulfilling the requirements of 20.6.2.5204 NMAC, the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

(1) the long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) the bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) an approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole; the director may require such tests whenever the well is worked over;

(4) casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years; the director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) any other test approved by the director in accordance with the procedures in 40 CFR Section 146.8(d) may also be used.

E. Ambient monitoring.

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the director shall require the owner or operator to develop a monitoring program. At a minimum, the director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the director may also require:

(a) continuous monitoring for pressure changes in the first aquifer overlying the confining zone; when such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the director;

(b) the use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the director, or to provide other site specific data;

(c) periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(d) periodic monitoring of the ground water quality in the lowermost groundwater of the state of New Mexico; and

(e) any additional monitoring necessary to determine whether fluids are moving into or between groundwater of the state of New Mexico.

F. The director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

[20.6.2.5358 NMAC - N, 8-31-15]

20.6.2.5359 REPORTING REQUIREMENTS: Reporting requirements shall, at a minimum, include:

A. quarterly reports to the director containing:

(1) the maximum injection pressure;

(2) a description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) a description of any event which triggers an alarm or shutdown device required pursuant to Subsection F of 20.6.2.5357 NMAC and the response taken;

(4) the total volume of fluid injected;

(5) any change in the annular fluid volume;

(6) the physical, chemical and other relevant characteristics of injected fluids; and

(7) the results of monitoring prescribed under 20.6.2.5358 NMAC;

B. reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

(1) periodic tests of mechanical integrity;

(2) any other test of the injection well conducted by the permittee if required by the director; and

(3) any well workover.

[20.6.2.5359 NMAC - N, 8-31-15]

20.6.2.5360 INFORMATION TO BE EVALUATED BY THE DIRECTOR: This section sets forth the information which must be evaluated by the director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of

information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved.

A. Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the director shall review the following to assure that the requirements of 20.6.2.5000 through 20.6.2.5399 NMAC are met:

(1) information required in 20.6.2.5102 NMAC;

(2) a map showing the injection well for which a permit is sought and the applicable area of review; within the area of review, the map must show the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads; the map should also show faults, if known or suspected;

(3) a tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone; such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging or completion and any additional information the director may require;

(4) the protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) maps and cross-sections indicating the general vertical and lateral limits of all groundwater of the state of New Mexico within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each groundwater of the state of New Mexico which may be affected by the proposed injection;

(6) maps and cross-sections detailing the geologic structure of the local area;

(7) maps and cross-sections illustrating the regional geologic setting;

(8) proposed operating data;

(a) average and maximum daily rate and volume of the fluid to be injected; and

(b) average and maximum injection pressure;

(9) proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) proposed stimulation program;

(11) proposed injection procedure;

(12) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any groundwater of the state of New Mexico;

(14) plans (including maps) for meeting monitoring requirements of 20.6.2.5358 NMAC;

(15) for wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under 20.6.2.5354 NMAC;

(16) construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) a demonstration pursuant to 20.6.2.5320 NMAC, that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

B. Prior to the director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the director shall review the following information, which shall be included in the completion report:

(1) all available logging and testing program data on the well;

(2) a demonstration of mechanical integrity pursuant to 20.6.2.5358 NMAC;

(3) the anticipated maximum pressure and flow rate at which the permittee will operate;

(4) the results of the injection zone and confining zone testing program as required in Paragraph (9) of Subsection A of 20.6.2.5360 NMAC;

(5) the actual injection procedure;

(6) the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

(7) the calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Paragraphs (2) and (3) of Subsection A of 20.6.2.5360 NMAC;

(8) the status of corrective action on wells identified in Paragraph (15) of Subsection A of 20.6.2.5360 NMAC; and

(9) evidence that the permittee has obtained an exemption under 40 C.F.R. Part 148, Subpart C for the hazardous wastes permitted for disposal through underground injection.

C. Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the director shall review the information required in Paragraph (4) of Subsection A of 20.6.2.5361 NMAC and Subsection A of 20.6.2.5362 NMAC.

D. Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

(1) the generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

[20.6.2.5360 NMAC - N, 8-31-15]

20.6.2.5361 CLOSURE:

A. *Closure plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of Subsection D of this section and is acceptable to the director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the director no later than the date on which notice of closure is required to be submitted to the director under Subsection B of this section.

(3) The plan shall assure financial responsibility as required in Paragraph (1) of Subsection A of 20.6.2.5342 NMAC.

(4) The plan shall include the following information:

(a) the type and number of plugs to be used;

(b) the placement of each plug including the elevation of the top and bottom of each plug;

(c) the type and grade and quantity of material to be used in plugging;

(d) the method of placement of the plugs;

(e) any proposed test or measure to be made;

(f) the amount, size, and location (by depth) of casing and any other materials to be left in the well;

(g) the method and location where casing is to be parted, if applicable;

(h) the procedure to be used to meet the requirements of Paragraph (5) of Subsection D of this section;

(i) the estimated cost of closure; and

(j) any proposed test or measure to be made.

(5) The director may modify a closure plan following the procedures of 20.6.2.3109 NMAC.

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(a) has received authorization from the director; and

(b) has described actions or procedures, satisfactory to the director, that the owner or operator will take to ensure that the well will not endanger groundwater of the state of New Mexico during the period of temporary disuse; these actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the director.

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the director 30 days prior to resuming operation of the well.

B. *Notice of intent to close.* The owner or operator shall notify the director at least 60 days before closure of a well. At the discretion of the director, a shorter notice period may be allowed.

C. *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

(1) a statement that the well was closed in accordance with the closure plan previously submitted and approved by the director; or

(2) where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

D. *Standards for well closure.*

(1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the director. The director shall analyze the pressure decay and the transient pressure observations conducted pursuant to Paragraph (1) of Subsection E of 20.6.2.5358 NMAC and determine whether the injection activity has conformed with predicted values.

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(a) pressure tests with liquid or gas;

(b) radioactive tracer surveys;

(c) noise, temperature, pipe evaluation, or cement bond logs; and

(d) any other test required by the director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between groundwater of the state of New Mexico.

(5) Placement of the cement plugs shall be accomplished by one of the following:

(a) the balance method;

(b) the dump bailer method;

(c) the two-plug method; or

(d) an alternate method, approved by the director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the director, prior to the placement of the cement plug(s).

[20.6.2.5361 NMAC - N, 8-31-15]

20.6.2.5362 POST-CLOSURE CARE:

A. The owner or operator of a Class I hazardous waste well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of Subsection B of this section and is acceptable to the director. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under Subsection C of 20.6.2.5361 NMAC.

(3) The plan shall assure financial responsibility as required in 20.6.2.5363 NMAC.

(4) The plan shall include the following information:

(a) the pressure in the injection zone before injection began;

(b) the anticipated pressure in the injection zone at the time of closure;

(c) the predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the state of New Mexico;

(d) predicted position of the waste front at closure;

(e) the status of any cleanups required under 20.6.2.5354 NMAC; and

(f) the estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the director may modify the post-closure plan after submission of the closure report following the procedures in 20.6.2.3109 NMAC.

B. The owner or operator shall:

(1) continue and complete any cleanup action required under 20.6.2.5354 NMAC, if applicable;

(2) continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the state of New Mexico; the director may extend the period of post-closure monitoring if he determines that the well may endanger groundwater of the state of New Mexico;

(3) submit a survey plat to the local zoning authority designated by the director; the plat shall indicate the location of the well relative to permanently surveyed benchmarks; a copy of the plat shall be submitted to the director;

(4) provide appropriate notification and information to such state and local authorities as have cognizance over drilling activities to enable such state and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone;

(5) retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids; the director shall require the owner or operator to deliver the records to the director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the director for that purpose.

C. Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) the fact that land has been used to manage hazardous waste;

(2) the name of the state agency or local authority with which the plat was filed, as well as the address of the director;

(3) the type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

[20.6.2.5362 NMAC - N, 8-31-15]

20.6.2.5363 FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE: The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in 20.6.2.5320 NMAC. The amount of the funds available shall be no less than the amount identified in Subparagraph (f) of Paragraph (4) of Subsection A of 20.6.2.5362 NMAC. The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

[20.6.2.5363 NMAC - N, 8-31-15]

20.6.2.5364 - 20.6.2.5399: [RESERVED]

APPENDIX - D

SUMMARY RULE REVISIONS

Appendix D

NEW MEXICO UIC PROGRAM

SUMMARY OF PROGRAM REVISION RULE CHANGES

For the Program Revision, the New Mexico Water Quality Control Commission (WQCC) amended several existing Sections of 20.6.2.3000 NMAC and 20.6.2.5000 NMAC and adopted several new Sections of 20.6.2.5300 NMAC (collectively, the "rule changes"). The rule changes authorize the New Mexico Oil Conservation Division (OCD) to regulate underground injection control (UIC) Class I hazardous waste injection wells for refineries in New Mexico. The UIC program is part of the federal Safe Drinking Water Act (SDWA), and New Mexico has been delegated authority to administer this program. As a condition of that delegated authority, New Mexico's UIC regulations must be at least as stringent as the U.S. Environmental Protection Agency's (EPA's) regulations.

In general, the rule changes are based on federal regulations for Class I hazardous waste injection wells found in 40 C.F.R. Parts 144 and 146. The rule changes draw from these federal provisions in two ways. First, in many cases, entire Code of Federal Regulation (C.F.R.) provisions have been incorporated verbatim (with minor conforming changes discussed below) and, as a result, are as stringent as the federal regulations. Minor adjustments were made to reflect the fact that (1) the regulations would be administered by OCD rather than by EPA and (2) the regulations will become a part of the NMAC. As a result, names, titles, and cross references have been adjusted to refer to New Mexico agencies and existing provisions in the NMAC. Second, where practicable, the rule changes incorporate relevant C.F.R. provisions by reference.

In most cases, New Mexico's existing UIC requirements are functionally equivalent to EPA's regulations. In turn, the rule changes are, at a minimum, as stringent as EPA's regulations. In several cases, however, the rule changes are more stringent than EPA's regulations, due in part to the stringency of New Mexico's existing UIC regulations. Finally, the rule changes amend several existing sections of the NMAC because Class I hazardous waste injection wells are no longer be prohibited under New Mexico law.

The sections below describe the changes and additions adopted by the WQCC for each Section within the New Mexico Administrative Code and explains their relevance to the Class I hazardous waste injection well program. Two relevant attachments are included in this submission packet as appendices to the Program Description. Appendix E is a Cross Reference Table that shows each C.F.R. provision included in the rule changes along with the corresponding NMAC citation. Appendix F includes the portions of the rule changes that were adapted from the C.F.R. provisions. It shows in redline the changes that were made to the original C.F.R. provisions.

20.6.2.3106 NMAC APPLICTION FOR DISCHARGE PERMITS AND RENEWALS:

The WQCC enacted several administrative changes to Section 20.6.2.3106 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect new fee provisions for Class I hazardous waste injection wells

located in 20.6.2.5302 NMAC. The amount of the fees was developed by OCD based on the agency's experience in permitting other UIC wells and the agency's evaluation of the additional oversight required for Class I hazardous waste injection wells. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.3107 NMAC MONITORING, REPORTING, AND OTHER REQUIREMENTS:

The WQCC enacted several administrative changes to Section 20.6.2.3107 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the new well closure requirements for Class I hazardous waste injection wells located in 20.6.2.5361 NMAC. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.3109 NMAC SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENTS FOR ABATEMENT PLANS:

The WQCC enacted several administrative changes to Section 20.6.2.3109 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5001 NMAC PURPOSE:

The WQCC enacted several administrative changes to Section 20.6.2.5000 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5002 NMAC UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

The WQCC enacted an administrative change to Section 20.6.2.5001 NMAC to expand the scope of hazardous or radioactive waste regulated under 20.6.2.5000 *et seq.* to include those materials listed in Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3). This change is necessary to ensure that New Mexico's Class I hazardous waste injection well regulations are as stringent as the federal requirements.

20.6.2.5003 NMAC NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS:

The WQCC enacted an administrative change to Section 20.6.2.5003 NMAC to reflect the fact that New Mexico's Ground and Surface Water Protection regulations would encompass Sections 20.6.2.1 through 20.6.2.5399 NMAC. This change is necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5004 NMAC PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES:

The WQCC enacted several administrative changes to Section 20.6.2.5004 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5101 NMAC DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5101 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. The WQCC also adopted new signatory requirements for reports required by Class I hazardous waste injection well permits. These signatory requirements are the same as existing requirements for UIC permit applications. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5102 NMAC PRE-CONSTRUCTION REQUIREMENTS FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5102 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5103 NMAC DESIGNATED AQUIFERS FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5103 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5104 NMAC WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5104 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5200 NMAC TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted an administrative change to Section 20.6.2.5200 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. This change is necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5201 NMAC PURPOSE:

The WQCC enacted several administrative changes to Section 20.6.2.5201 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited and to reference additional requirements for Class I hazardous waste injection wells located in Sections 20.6.2.5300 through 20.6.2.5399 NMAC. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5204 NMAC MECHANICAL INTEGRITY FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5204 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5209 NMAC PLUGGING AND ABANDONMENT FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5209 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5210 NMAC INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I WELLS AND CLASS III WELLS:

The WQCC enacted several administrative changes to Section 20.6.2.5210 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5300 NMAC REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

Section 20.6.2.5300 NMAC provides an overview of the Class I hazardous waste injection well program. Subsection A explains that Class I hazardous waste injection wells are subject to the general UIC regulations in Sections 20.6.2.5000 through 20.6.2.5299 NMAC as well as the specific Class I hazardous waste injection wells provisions located in 20.6.2.5300 through 5399 NMAC. It also clarifies that, in the event that regulatory provisions conflict, Class I hazardous waste injection wells must comply with Sections 20.6.2.5300 through 20.6.2.5399 NMAC. Subsection B limits the scope of New Mexico's Class I hazardous water injection well program

to injection wells that are operated by petroleum refineries for the sole purpose of disposing of wastes generated by the refineries. As a result of this limitation, commercial hazardous waste injection wells would still be prohibited in New Mexico. Subsection C delegates authority to administer the Class I hazardous waste injection well program to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD), in accordance with NMSA 1978, § 70-2-4(F) and the 1982 Joint Powers Agreement Between the Environmental Improvement Division, the Oil Conservation Division, and the Mining and Minerals Division.

These provisions are intended to provide for the orderly administration of the Class I hazardous waste injection well program for oil refineries in New Mexico.

20.6.2.5301 NMAC DEFINITIONS

Section 20.6.2.5301 NMAC defines seven terms used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC. Six of those terms—cone of influence, director, existing well, injection interval, new well, and transmissive fault or fracture—are copied verbatim from the EPA Class I hazardous waste injection regulations on which Sections 20.6.2.5300 through 5399 NMAC are based. The seventh term, "groundwater of the State of New Mexico" replaces the term "underground source of drinking water" that is used in EPA's regulations. Groundwater of the State of New Mexico defines a broader range of groundwater aquifers because it includes all groundwater with a total dissolved solid (TDS) of 10,000 mg/l or less, regardless of their size or current use. In contrast underground sources of drinking water are limited to those aquifers with a TDS of 10,000 or less that are used or have the potential to be used to supply a public water system. *See, e.g.*, 40 C.F.R. § 144.3. In this respect, the rule changes are more stringent than EPA's Class I hazardous waste injection well regulations because they are designed to protect a broader range of groundwater formations.

These definitions are intended to ensure that terms used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC are properly understood and given a consistent meaning.

20.6.2.5302 NMAC FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

Section 20.6.2.5302 NMAC prescribes a series of fees that are applicable to Class I hazardous waste injection well permit applicants and operators in lieu of the generally applicable fee provisions found in Section 20.6.2.3114 NMAC. It includes provisions for filing fees, permit fees, annual administration fees, renewal fees, modification fees, and financial assurance fees. All fees must be paid to the Water Quality Management Fund. The permit fee and renewal fees may be paid in annual installments over the life of the permit. The amounts were developed by OCD based on the agency's experience in permitting other UIC wells and the agency's evaluation of the additional oversight required for Class I hazardous waste injection wells. A summary of the fees is provided in the table below:

Fee	Amount
Filing Fee	$100
Permit Fee	$30,000
Annual Administration Fee	$20,000

Renewal Fee	$10,000
Modification Fee	$10,000
Minor Modification Fee	$1,000
Financial Assurance Fee (approval)	Greater of $250 or 0.01%
Financial Assurance Fee (annual review)	Greater of $100 or 0.001%
Corporate Guarantee Financial Assurance Fee	$5,000

These fee provisions are intended ensure that the New Mexico OCD has adequate resources to administer the Class I hazardous waste injection well program.

20.6.2.5303 NMAC CONVERSION OF EXISTING INJECTION WELLS:

Section 20.6.2.5303 NMAC authorizes the conversion of existing Class I non-hazardous waste injection wells into Class I hazardous waste injection wells, provided that the well meets the requirements of Sections 20.6.2.5300 through 20.6.2.5399 NMAC and the well operator obtains a Class I hazardous waste injection well permit.

This provision is intended to allow refineries to begin siting and constructing Class I injection wells and, if necessary, using them to dispose of non-hazardous waste prior to any subsequent approval that may be required by EPA before the New Mexico OCD is authorized to administer a Class I hazardous waste injection well program.

20.6.2.5310 NMAC REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

Section 20.6.2.5310 NMAC is based on 40 C.F.R. § 144.14 and, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions is not materially different from 40 C.F.R. § 144.14.

This Section applies to hazardous waste that is transported from the place of generation to the hazardous waste injection well by trucking or some other means that must be accompanied by a manifest under the federal Resource Conservation and Recovery Act (RCRA). It directs owners of hazardous waste injection wells accepting such waste to apply for authorization to inject such wastes within six months after approval of a State UIC program. In addition to Class I hazardous waste injection well regulations, the permittee must also comply with RCRA provisions regarding notification, identification numbers, manifest system, manifest discrepancies, operating records, annual reports, unmanifested waste reports, personnel training, and certification of closure.

This provisions is intended to ensure that wells injecting hazardous waste comply with New Mexico's Class I hazardous waste injection well program and that New Mexico's Class I hazardous waste injection well program is as stringent as EPA's class I hazardous waste injection well program.

20.6.2.5311 through 20.6.2.5319 NMAC [RESERVED]

20.6.2.5320 NMAC ADOPTION OF 40 C.F.R. PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS):

Section 20.6.2.5320 NMAC incorporates by reference EPA's financial assurance requirements for Class I hazardous waste injection wells found in 40 C.F.R. Part 144, Subpart F and thus is as stringent as EPA's regulations. Section 144.60 is an introductory provision that makes 40 C.F.R. Part 144, Subpart F applicable to all Class I hazardous waste injection wells. Section 144.61 defines a series of terms used in 40 C.F.R. Part 144, Subpart F. Section 144.62 requires Class I hazardous waste injection well permittees to estimate, and revise as necessary, the costs required to plug and abandon their wells when operations cease. These cost estimates provide the basis for the financial assurance requirements applicable to each well. Section 144.63 requires each Class I hazardous waste injection well permittee to provide financial assurance that is sufficient to cover the estimated plugging and abandonment costs. Options for providing financial assurance include a trust fund, surety bond, letter of credit, insurance, or a corporate parent guarantee. Section 144.64 requires the permittee of a Class I hazardous waste injection well to notify the Director of OCD if the entity providing the financial assurance becomes insolvent or if the instrument providing financial assurance is otherwise compromised. If such an event occurs, the permittee is also required to establish an alternative form of financial assurance. Section 144.70 provides forms for each specific type of financial assurance that must be utilized by permittees of Class I hazardous waste injection wells. The language included in the forms must be used verbatim in the financial assurance instruments.

These provisions are intended to ensure that sufficient funds are available to plug and abandon Class I hazardous waste injection wells in the event that the well operator lacks the financial capacity to do so when well operations cease.

20.6.2.5321 NMAC MODIFICATIONS, EXCEPTIONS, AND OMISSIONS:

Section 20.6.2.5321 NMAC provides modifications, exceptions, and omissions to the incorporation by reference of 40 C.F.R. Part 144, Subpart F. Subsections A and B modify the meaning of certain terms to refer to New Mexico agencies, officials, and definitions in lieu of their federal counterparts. This is necessary to reflect the fact that the permitting program will be administered by OCD rather than by EPA. Subsection C modifies certain provision to refer to NMAC provisions in lieu of equivalent C.F.R. provisions, replaces references to EPA Identification Numbers with API Well Numbers, eliminates the option for a permittee-based financial test, and requires that trust agreements used for financial assurance be subject to New Mexico law. The elimination of a permittee-based financial assurance test narrows the scope of available financial assurance options and, therefore, makes the rule changes more stringent than EPA's requirements. Subpart D eliminates certain provisions of 40 C.F.R. Part 144, Subpart F that are inapplicable to Class I hazardous waste UIC programs administered by the States. It also eliminates the State assumption of liability provisions in 40 C.F.R. § 144.66, which makes the provisions more stringent by eliminating a permittee's option to rely on the State to assume responsibility for plugging and abandonment under certain circumstances.

20.6.2.5341 NMAC CONDITIONS APPLICABLE TO ALL PERMITS:

Section 20.6.2.5341 NMAC is based on 40 C.F.R. § 144.51. Unless otherwise specified below, Section 20.6.2.5341 NMAC is not materially different from 40 C.F.R. § 144.51, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides a series of conditions that must be included in all permits for Class I hazardous waste injection wells.

Subsection A requires permittees to comply with all permit conditions. This section explains that failure to comply with a permit condition is a violation of the Water Quality Act and provides a grounds for an enforcement action and penalties for noncompliance that may include permit modification or termination.

Subsection B requires permittees to apply for and obtain a permit renewal to continue operations after the expiration of a Class I hazardous waste injection well permit. Permit renewal applications are subject to the requirements of Subpart F of Section 20.6.2.3106 NMAC.

Subsection C provides that the need to halt or reduce injection to remain in compliance with permit conditions is not an available defense in an enforcement action.

Subsection D requires permittees to take all reasonable steps to mitigate any adverse impacts that may occur as the result of a failure to comply with permit conditions.

Subsection E requires permittees to properly operate and maintain all facilities and systems of treatment and control to ensure compliance with permit conditions. This includes providing adequate funding, staffing, training and quality assurance procedures. Permittees are also required to prepare and, if necessary, employ back-up or auxiliary facilities to maintain compliance with permit conditions.

Subsection F states that a Class I hazardous waste injection well permit may be modified, revoked and reissued, or terminated for cause. It further states that all permit conditions continue to apply while a request for modification, revocation and reissuance, or termination is pending. Thus, a permittee must continue to comply with all permit conditions until changes are approved by the Director of OCD.

Subsection G states that a Class I hazardous waste injection well permit does not convey any property rights to the permittee.

Subsection H requires a permittee to respond in a timely fashion to information requests made by the Director of OCD. This includes requests to determine whether cause exists to modify, revoke and reissue, or terminate a Class I hazardous waste injection well permit. It also applies to any records that a permittee is required to keep as a condition of its permit.

Subsection I requires a permit applicant to provide notice of the permit application to the public in accordance with Section 20.6.2.3108 NMAC. In addition, written notice must be mailed,

return receipt requested, to all surface and mineral owners within a half-mile of the proposed well site.

Subsection J requires a permittee to allow the Director of OCD or an authorized representative to enter and inspect any Class I hazardous waste injection well premises. The Director is authorized to enter the well site as well as any facility where records are kept and must be given access to the records and to the facilities themselves. The Director is also authorized to collect samples or monitor operations for the purpose of ensuring compliance with permit conditions.

Subsection K requires permittees to ensure that all samples and measurements are representative and to maintain records of monitoring activities. Records associated with the nature and composition of injected fluids must be maintained until three years after plugging and abandonment of the wells; all other records, including calibration and maintenance records, must be maintained for a period of three years.

Subsection L requires that all applications, reports, and other information submitted to the Director of OCD must be signed and certified in accordance with the requirements in Section 20.6.2.5101 NMAC.

Subsection M require permittees to report, within specific time limits, any planned changes to Class I hazardous waste injection wells, any anticipated noncompliance, periodic monitoring reports, all noncompliance events that may endanger public health or the environment, all other instances of noncompliance, and other information related to incomplete or inaccurate permit applications. Any noncompliance event that may endanger public health or the environment must be reported within 24 hours. Subsection M is more stringent than 40 C.F.R. § 144.51(l) because it imposes additional reporting requirements for noncompliance events that may endanger public health or the environment that are not included in the federal requirements.

Subsection N requires a permittee to provide notice of well completion to the Director of OCD before commencing injection at the well site. The Director of OCD is given an opportunity to inspect the new well and verify compliance with permit conditions before injection begins. Subsection N is more stringent than 40 C.F.R. § 144.51(m) because New Mexico does not allow area permitting of UIC wells.

Subsection O requires a permittee to notify the Director of OCD before conversion or abandonment of a Class I hazardous waste injection well. Subsection O is more stringent than 40 C.F.R. § 144.51(n) because New Mexico does not allow area permitting of UIC wells.

Subsection P requires a permittee to meet the well plugging and abandonment requirements in Section 20.6.2.5209 NMAC when closing a well.

Subsection Q provides deadlines for the submission of a plugging and abandonment report to the Director of OCD after closure of a Class I hazardous waste injection well. The plan must state that the well was plugged in accordance with the well closure plan or provide an explanation of any deviations from the previously submitted well closure plan.

Subsection R requires a permittee to comply with the mechanical integrity provisions in Section 20.6.2.5204 NMAC. If the Director determines that well lacks mechanical integrity, injection

must cease with 48 hours. A permittee then has the option to close the well or to undertake the necessary corrective action to prevent the migration of fluid into groundwater of the state of New Mexico. Injection cannot be restarted until approval is obtained from the Director of OCD.

Subsection S provides requirements for the transfer of a Class I hazardous waste injection well permit. A request for transfer must list all officers, directors, and owners of 25% or greater in the transferee. This provision is more stringent than 40 C.F.R. § 144.51(l)(3) because it requires the Director of OCD's written approval before a permit can be transferred. The transferror's financial assurance will not be released until the transfer is approved by the Director of OCD and the tranferree's financial assurance is in place.

These provisions are intended to ensure that Class I hazardous waste injection wells are constructed, operated, and closed in a manner that is consistent with permit conditions and New Mexico regulations and is protective of human health, the environment, and groundwater of the state of New Mexico.

20.6.2.5342 NMAC ESTABLISHING PERMIT CONDITIONS:

Section 20.6.2.5342 NMAC is based on 40 C.F.R. § 144.52. Section 20.6.2.5342 NMAC is not materially different from 40 C.F.R. § 144.52, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

Subsection A requires the Director of OCD to establish permit conditions for Class I hazardous waste injection wells that are consistent with Sections 20.6.2.3019(H), 20.6.2.5343 (A), 20.6.2.5310, and 20.6.2.5351 through 20.6.2.5353 NMAC. These sections address the duration of permits, schedules of compliance, reporting and recordkeeping, and specific Class I hazardous waste injection well requirements described below. Subsection A also requires the Director of OCD to establish permit conditions for financial assurance for well plugging and abandonment as well as any additional conditions that may be necessary to prevent migration of fluids into groundwater of the state of New Mexico.

Subsection B requires the Director of OCD to establish permit conditions for Class I hazardous waste injection wells that will assure compliance with all applicable requirements in Part 20.6.2 NMAC. An applicable requirement is defined as any requirement which takes effect prior to the final disposition of a permit, including applications for the issuance, modification, or revocation and reissuance of a permit.

Subsection C allows the Director of OCD to incorporate permit conditions expressly in the permit or to incorporate permit conditions by reference using specific citations to the NMAC.

These provisions are intended to ensure that all requirements imposed on Class I hazardous waste injection wells in Part 20.6.2. NMAC are included in an operator's Class I hazardous waste injection well permit.

20.6.2.5343 NMAC SCHEDULE OF COMPLIANCE:

Section 20.6.2.5343 NMAC is based on 40 C.F.R. § 144.53. Section 20.6.2.5343 NMAC is not materially different from 40 C.F.R. § 144.53, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section authorizes the Director of OCD to include in a Class I hazardous waste injection well permit a schedule of compliance leading to full compliance with Part 20.6.2 NMAC. The time for compliance cannot exceed three years from issuance of the permit. If the schedule of compliance exceeds one year, interim targets must be established to ensure the permittee is making progress toward full compliance. This Section also allows the Director of OCD to establish a schedule under which an existing Class I hazardous waste injection well can cease operations through plugging and abandonment rather than complying with new permit conditions. Finally, in cases where a permittee is undecided, the Director of OCD can establish a two-track compliance option that gives the permittee discretion to decide whether to comply with new permit requirements or cease operations and close the well.

These provisions are intended to provide a process through which Class I hazardous waste injection well operators can adjust operations to comply with new regulatory requirements that may be imposed on a Class I hazardous waste injection well.

20.6.2.5344 NMAC REQUIREMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS:

Section 20.6.2.5344 NMAC is based on 40 C.F.R. § 144.54. Section 20.6.2.5344 NMAC is not materially different from 40 C.F.R. § 144.54, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section requires the Director of OCD to include conditions in Class I hazardous waste injection well permits that specify the requirements for monitoring the injection of hazardous waste into the well and for reporting those monitoring results to OCD. Monitoring requirements must address the use, maintenance, installation of monitoring equipment and must also include sufficient detail to ensure that monitored samples are representative of operations at the facility. Reporting requirements must comply with the time intervals provided in Section 20.6.2.5359 NMAC.

These provisions are intended to ensure that monitoring data is accurate and representative of the regulated activity and that OCD is provided with monitoring data in a timely manner.

20.6.2.5345-20.6.2.5350 NMAC [RESERVED]

20.6.2.5351 NMAC APPLICABILITY

Section 20.6.2.5351 NMAC is based on 40 C.F.R. § 146.61(a). Section 20.6.2.5351 NMAC is not materially different from 40 C.F.R. § 146.61(a), with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions. The definitions included in 40 C.F.R. § 146.61(b) can be found in 20.6.2.5301 NMAC.

This Section explains that Sections 20.6.2.5351 though 20.6.25363 NMAC provide the standards and criteria for Class I hazardous waste injection wells. It further explains that, unless otherwise noted, these regulations that are specifically designed for Class I hazardous waste injection wells must be applied in place of any inconsistent provisions found in Sections 20.6.2.5000 through 20.6.2.5299 NMAC.

These provisions are intended to ensure that Class I hazardous waste injection well operators will comply with all applicable provisions designed specifically for Class I hazardous waste injections wells.

20.6.2.5352 NMAC MINIMUM CRITERIA FOR SITING:

Section 20.6.2.5352 NMAC is based on 40 C.F.R. § 146.62. Unless otherwise specified below, Section 20.6.2.5352 NMAC is not materially different from 40 C.F.R. § 146.62, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides the minimum criteria that must be applied when siting a Class I hazardous waste injection well. Subsection A states that Class I hazardous waste injection wells must be sited so that they inject into a formation that is below any formation that contains groundwater of the state of New Mexico and is located within one quarter mile of the well bore.

Subsection B provides a number of criteria that the Director of OCD must use to ensure that the area for a proposed Class I hazardous waste injection well is geologically suitable for the injection of hazardous waste. These include an analysis of the structure and stratigraphic geology, hydrogeology, and seismicity of both the region and the well site. The Director of OCD must also ensure that the local geology is sufficiently understood so that the limits of waste fate and transport can be accurately predicted by modeling.

Subsection C requires that the injection zone have necessary characteristics, including permeability, porosity, thickness, and areal extent to prevent the movement of fluids into groundwater of the state of New Mexico. The well site must also have a confining zone that is free of cracks, faults, or fractures and is capable of preventing vertical propagation of vertical fractures that could allow migration of fluids from the injection zone.

Subsection D requires the owner or operator of a Class I hazardous waste injection well to demonstrate at least one secondary feature to provide further protection of groundwater of the state of New Mexico. These secondary features include a sequence of permeable and less permeable strata between the confining zone and groundwater of the State of New Mexico, a comparison of the piezeometric surfaces of the injection zone and the lowermost groundwater of the state of New Mexico, or a demonstration that there is no groundwater of the state of New Mexico present at the well site.

These provisions are intended to ensure that hazardous waste disposed of at the target location and geologic formation will not migrate from the injection zone into groundwater of the state of New Mexico.

20.6.2.5353 NMAC AREA OF REVIEW

Section 20.6.2.5353 NMAC is based on 40 C.F.R. § 146.63. Section 20.6.2.5353 NMAC is not materially different from 40 C.F.R. § 146.63, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section requires Class I hazardous waste injection wells to employ an area of review that is defined as a two-mile radius around the well bore, unless the Director of OCD determines that a larger area of review is necessary. The area of review is used to evaluate other wells and geologic features that could potentially serve as conduits for migration of fluids out of the injection zone. This is a larger area of review than is used for the permitting of other UIC wells in New Mexico.

This provision is intended to ensure that Class I hazardous waste injection well permit applicants review an area that is sufficiently large to exceed the expected lateral migration or cone of influence from each proposed Class I hazardous waste injection well.

20.6.2.5354 NMAC CORRECTIVE ACTION

Section 20.6.2.5354 NMAC is based on 40 C.F.R. § 146.64. Section 20.6.2.5354 NMAC is not materially different from 40 C.F.R. § 146.64, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section describes the steps that a permit applicant must take to avoid the migration of injected fluid through other existing well bores located within the area of review. Class I hazardous waste injection well permit applicants are required to identify all wells that penetrate the confining zone or injection zone within the area of review and to determine whether the wells are adequately completed or plugged. Information related to the location, description, and records of plugging or completion for each well must be provided to the Director of OCD in a tabular form. If any wells are determined to be improperly plugged and abandoned, or if such information cannot be determined, the permit applicant must submit for the Director of OCD's approval a corrective action plan that outlines the steps it will take to prevent movement of fluids through such wells. For existing wells, all corrective actions must be completed within two years after issuance of a Class I hazardous waste injection well permit. For new wells, all corrective actions must be completed before injection may commence. The Director of OCD must evaluate adequacy of a corrective action plan based on a series of criteria including the type of fluid to be injected, the geology and hydrology at the site, the history of injection operations, the closure procedures when the wells were closed, the reliability of the procedure used to identify abandoned wells, along with other factors that could affect the movement of fluids from the injection zone into groundwater of the United States.

These provisions are intended to ensure that a Class I hazardous waste injection well permit applicant identifies all wells in the area of review that could provide a path for the movement of fluids out of the injection zone and takes any corrective action necessary to isolate the injection zone.

20.6.2.5355 NMAC CONSTRUCTION REQUIREMENTS:

Section 20.6.2.5355 NMAC is based on 40 C.F.R. § 146.65. Section 20.6.2.5355 NMAC is not materially different from 40 C.F.R. § 146.65, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides the requirements that a Class I hazardous waste injection well permittee must comply with when constructing a well.

Subsection A requires that Class I hazardous waste injection wells must be constructed and completed to prevent the movement of fluids from the injection zone to groundwater of the state of New Mexico. In addition, wells must be constructed in a manner that allow for the use of testing devices, and workover tools as well as the continuous monitoring of injection tubing and long string casing.

Subsection B requires that the permittee ensure compatibility between the injection fluids and all materials with which such fluids will come into contact. Compatibility will be evaluated based on standards developed by the American Petroleum Institute, ASTM, or similar organizations.

Subsection C requires that well casing and cementing must be designed to prevent movement of fluids into groundwater of the state of New Mexico during the life of the Class I hazardous waste injection well (including post-closure care) and provides a series of criteria that the Director of OCD must consider when evaluating the sufficiency of the well casing and cementing program. It requires a surface casing string, at least one long string casing into the injection zone, cementing between casings, and requirements to ensure that well integrity will be maintained for the life of the well.

Subsection D provides a number of criteria that the Director of OCD must consider when establishing requirements for the tubing and packer through which fluids will be injected. These criteria include depth, characteristics of the injection fluid, injection and annular pressure, injection rate, and the size and strength of the casing and tubing. It also authorizes the Director of OCD to approve a fluid seal if certain criteria are met.

These provisions are intended to ensure that the design and construction of a Class I hazardous waste well will include all of necessary components to prevent migration of fluid from the injection zone or the well bore into groundwater of the state of New Mexico.

20.6.2.5356 NMAC LOGGING, SAMPLING, AND TESTING PRIOR TO WELL OPERATION:

Section 20.6.2.5356 NMAC is based on 40 C.F.R. § 146.66. Section 20.6.2.5356 NMAC is not materially different from 40 C.F.R. § 146.66, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides a series of tests that a Class I hazardous waste injection well permittee must conduct prior to commencing injection.

Subsection A requires a Class I hazardous waste injection well permittee to conduct a series of logs and tests during the well construction process to determine the geologic and hydrologic features of the well bore. Logs and tests must be run after installation of the surface casing and the long string casing. In addition, prior to well operation, the permittee must conduct a mechanical integrity test that consists of a pressure test, radioactive tracer survey, temperature or noise log, and any other test required by the Director of OCD.

Subsection B requires a permittee to collect whole cores or sidewall cores from the confining and injection zones, along with formation fluid samples from the injection zone. The Director of OCD approves the substitution of representative cores from nearby wells if the well owner or operator can demonstrate that core retrieval is not possible.

Subsection C requires the permittee to record the temperature, pH, conductivity, pressure, and static fluid level of the injection zone fluid.

Subsection D requires the permittee to determine the fracture pressure and other chemical and physical characteristics of the injection and confining zones. The permittee must also determine the physical and chemical characteristics of the formation fluids in the injection zone.

Subsection E requires the permittee to conduct a pump test or injectivity test to verify the characteristics of the injection zone prior to operation of the well.

Subsection F requires the permittee to provide notice to the Director of OCD before conducting tests under Section 20.6.2.5351 through 20.6.2.5363 NMAC to allow the Director of OCD an opportunity to witness such tests. The notice must be provided at least 30 days before testing begins and must include a schedule of all logging and testing activities.

These provisions are intended to ensure that fluids will not migrate from the injection zone or well bore by verifying information about the suitability of the injection zone, confining zone, and well bore prior to operation of a Class I hazardous waste injection well.

20.6.2.5357 NMAC OPERATING REQUIREMENTS:

Section 20.6.2.5357 NMAC is based on 40 C.F.R. § 146.67. Section 20.6.2.5357 NMAC is not materially different from 40 C.F.R. § 146.67, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides a series of requirements that Class I hazardous waste injection well permittees must comply with during operation of the well.

Subsection A requires permittees to maintain an injection pressure at the wellhead that will avoid initiation of new fractures or propagation of existing fractures in the injection zone. The permittee must also ensure that the injection pressure will not initiate new fractures or propagate existing fractures in the confining zone above the injection zone.

Subsection B prohibits injection between the outermost well casing and the well bore in order to protect groundwater of the state of New Mexico.

Subsection C provides requirements for maintaining annulus pressure in the well to allow monitoring for leaks in the injection tubing. It also requires that the fluid in the annulus be noncorrosive.

Subsection D requires the permittee to maintain the mechanical integrity of the well at all times.

Subsection E requires the Director of OCD to impose additional permit requirements for Class I hazardous waste injection wells that may inject wastes that have the potential to react with the injection formation to generate gases. Conditions can include limits on temperature and pH and other procedures to avoid pressure imbalances.

Section F requires the permittee to install continuous monitoring systems for injection pressure, flow rate, volume, and temperature of the injection fluid and annulus pressure. The permittee must also install an automatic alarm and automatic shut-off system that is triggered (or certify the presence of a trained operator to respond) when pressures, flow rates, and other parameters fall outside of acceptable ranges.

If an automatic alarm or shutdown is triggered, Subsection G requires the permittee to investigate the cause of the alarm or shutdown. If the well lacks mechanical integrity, the permittee must cease operations, determine whether any leaks are present, and provide notice to the Director of OCD within 24 hours.

If a loss of mechanical integrity is discovered at a Class I hazardous waste injection well, Subsection H requires the permittee to immediately cease operations and take reasonable steps to determine whether hazardous waste was injected into any unauthorized zone. The permittee must also provide notice to the Director of OCD of the loss of mechanical integrity, and restore and demonstrate mechanical integrity of the well prior to resuming injection.

If the permittee obtains evidence of a release of injected waste outside of the injection zone, Subsection I requires the permittee to cease operations, notify the Director of OCD, characterize the release, and, if necessary, remediate the release and notify the public of any release into groundwater of the state of New Mexico. Injection may resume after the permittee demonstrates that injection will not endanger groundwater of the state of New Mexico.

Subsection J requires the permittee of a Class I hazardous waste injection well to obtain approval from the Director of OCD prior to conducting a well workover.

These provisions are intended to ensure that wells are operated in a manner that prevents migration of injected fluids out of the injection zone and to provide protocol to protect groundwater water of the state of New Mexico in the event that an incident occurs at the well site.

20.6.2.5358 NMAC TESTING AND MONITORING REQUIREMENTS:

Section 20.6.2.5358 NMAC is based on 40 C.F.R. § 146.68. Section 20.6.2.5358 NMAC is not materially different from 40 C.F.R. § 146.68, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides testing and monitoring requirements that Class I hazardous waste injection well permittees must comply with during operation of the well.

Subsection A requires the permittee to develop and follow a waste analysis plan to obtain a detailed physical and chemical analysis of representative samples of the injected waste. The plan must specify the parameters to be measured, the test methods that will be applied, and the sampling measures used to ensure representativeness. The permittee must repeat this analysis on a regular basis as required by the waste analysis plan and the Director of OCD.

Subsection B requires the permittee to demonstrate to the Director of OCD that the injected waste stream and any reaction products will not alter the chemical or physical properties of the injection or confining zone in a manner that would threaten the minimum siting criteria in Section 20.6.2.5352 NMAC.

Subsection C requires the permittee to demonstrate that all well materials that will come into contact with the injection fluid will be constructed of compatible materials. It also requires the Director of OCD to impose additional corrosion monitoring requirements for Class I hazardous waste injection wells that will dispose of corrosive waste.

Subsection D requires the permittee to conduct periodic mechanical integrity tests during operation of the well. Mechanical integrity tests must evaluate the long string casing, injection tube, annular seal, and bottom hole cement. The permittee is also required to run casing inspection logs whenever the permittee conducts a workover in which the injection string is pulled.

Subsection E requires the permittee to conduct annual ambient monitoring to assess the potential for fluid movement from the well or injection zone. The monitoring program must be based on a site-specific assessment of potential fluid movement from the well or injection zone. The Director of OCD has discretion to require additional monitoring including monitoring of pressure in formations above the confining zone and monitoring of the groundwater quality in aquifers above the confining zone.

Subsection F authorizes the Director of OCD to require seismicity monitoring if the Class I hazardous waste injection well has the capacity to cause seismic disturbances.

These provisions are intended to require permittees to collect sufficient information during the operation of Class I hazardous waste injection wells to ensure that injected fluids do not migrate out of the injection zone into groundwater of the state of New Mexico.

20.6.2.5359 NMAC REPORTING REQUIREMENTS:

Section 20.6.2.5359 NMAC is based on 40 C.F.R. § 146.69. Section 20.6.2.5359 NMAC is not materially different from 40 C.F.R. § 146.69, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section provides reporting requirements that Class I hazardous waste injection well permittees must comply with during operations. Permittees are required to submit quarterly reports that contain information regarding maximum injection pressure, volume of fluid injected,

the characteristics of the injected fluids and the results of any required monitoring. The permittee must also report any event that exceeds operating parameters or triggers an alarm or shutdown. The permittee must also comply with reporting requirements for mechanical integrity tests, well workovers, and other tests of the injection well required by the Director of OCD.

These provisions are intended to ensure that the Director of OCD is provided with necessary information about each Class I hazardous waste injection well in a timely manner.

20.6.2.5360 NMAC INFORMATION TO BE EVALUATED BY THE DIRECTOR:

Section 20.6.2.5360 NMAC is based on 40 C.F.R. § 146.70. Section 20.6.2.5360 NMAC is not materially different from 40 C.F.R. § 146.70, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section describes the information that the Director of OCD must consider when evaluating the design, construction, operation, and closure of Class I hazardous waste injection wells.

Subsection A describes a series of criteria and documents that the Director of OCD must review and evaluate before issuing a Class I hazardous waste injection well permit to ensure that the permittee will meet the requirements of Sections 20.6.2.5000 through 20.6.2.5399 NMAC. These include maps, cross-sections and tabulations showing wells located within the area of review, groundwater of the state of New Mexico, and geologic features at the proposed well site. The permit applicant must also provide information on the proposed construction and operation of the Class I hazardous waste injection well.

Subsection B describes the information that a Class I hazardous waste injection well permittee must include in a well completion report before the Director of OCD can grant approval for operation of a Class I hazardous waste injection well. These include logging and testing data, proposed operating parameters, and the status of corrective action activities. The permittee must also provide evidence that that is has obtained a no migration exclusion from EPA Region 6.

Subsection C requires the Director of OCD to review the information regarding well closure and post-closure care in Subsection A(4) of Section 20.6.2.6361 NMAC and Subsection A of Section 20.6.2.5362 NMAC before granting approval of the plugging and abandonment of a Class I hazardous waste injection well.

Subsection D requires that the permittee of a Class I hazardous waste injection well must certify that it has established a program to reduce the volume and toxicity of the injected waste and that injection is the method of disposal that minimizes the threat to human health and the environment.

These provisions are designed to ensure that the Director of OCD has the necessary information to determine that Class I hazardous waste injection wells will be sited, constructed, operated, and closed in a manner that is protective of human health and the environment and that injected wastes will not migrate from the injection zone or well bore into groundwater of the state of New Mexico.

20.6.2.5361 NMAC CLOSURE:

Section 20.6.2.5361 NMAC is based on 40 C.F.R. § 146.71. Section 20.6.2.5361 NMAC is not materially different from 40 C.F.R. § 146.71, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section describes the requirements that Class I hazardous waste injection well permittees must comply with regarding closure of wells after the injection ceases.

Subsection A requires a permit applicant to submit and revise as necessary a well closure plan, which must be included as a permit condition for any Class I hazardous waste injection well. The plan must identify the type of number of plugs to be used, the method of placement of the plugs, any wells casing or other materials that will remain in the well bore, testing and measurement procedures, as well as other criteria. Subsection A also requires a permittee to maintain financial assurance that is sufficient to cover the cost of well closure. Finally, it also provides a procedure for Class I hazardous waste injection well permittees to temporarily cease operations for up to two years while keeping a well open.

Subsection B requires a permittee to provide the Director of OCD with at least 60 days' notice prior to closing a Class I hazardous waste injection well.

Subsection C requires a Class I hazardous waste injection well permittee to submit a closure report to the Director of OCD after closing a well. The report must be certified by the permittee and by the person who performed the closure operations. The report must describe any deviations from the previously filed well closure plan.

Subsection D provides the standards that a Class I hazardous waste injection well permittee must meet when closing a well. These standards include an analysis of pressure decay over time, mechanical testing of long string casing and cement that will remain in the well bore, flushing with a buffer fluid, and the placement of cement plugs.

These provisions are intended to ensure that Class I hazardous waste injection wells are properly closed so that there will be no migration of fluids from the injection zone when injection ceases.

20.6.2.5362 NMAC POST-CLOSURE CARE:

Section 20.6.2.5362 NMAC is based on 40 C.F.R. § 146.72. Section 20.6.2.5362 NMAC is not materially different from 40 C.F.R. § 146.72, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section describes the requirements that Class I hazardous waste injection well permittees must comply with regarding post-closure care of wells after the injection ceases.

Subsection A requires a permittee to prepare, modify as necessary, and provide financial assurance for a post-closure care plan. The plan must include information regarding the pressure before and after injection and the projected decay of pressure in the injection zone, the predicted position of the waste front at closure, and the status of any required cleanup efforts. The

obligation to implement the post-closure care plan survives termination of the Class I hazardous waste injection well permit.

Subsection B requires a permittee to complete any cleanup activities required under Section 20.6.2.5354 NMAC and to conduct groundwater monitoring until the well's cone of influence no longer intersects the base of the lowermost groundwater of the state of New Mexico. The permittee must also provide notice of the injection and confining zones to state and local agencies with authority over drilling activities, and retain records of injected fluids for three years after well closure.

Subsection C requires the permittee to record a notation in the deed of all surface and subsurface owners on whose property the Class I hazardous waste injection well is located to inform future purchasers that hazardous waste was injected at the site. The notation must state that the property was used to manage hazardous waste, provide contact information to government agencies with information regarding the Class I hazardous waste injection well, and must describe the materials that were disposed of, along with the identity of the formation into which they were injected and the time period over which injection occurred.

These provisions are intended to prevent migration of fluids from the injection zone into groundwater of the state of New Mexico both through post-closure care of the well and by providing notice to future parties that hazardous waste was injected.

20.6.2.5363 NMAC FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE

Section 20.6.2.5363 NMAC is based on 40 C.F.R. § 146.73. Section 20.6.2.5363 NMAC is not materially different from 40 C.F.R. § 146.73, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal C.F.R. provisions.

This Section requires permittees to demonstrate and maintain financial responsibility for the costs of post-closure care using one of the instruments specified in Section 20.6.2.5320 NMAC. This obligation survives termination of a Class I hazardous waste injection well permit.

These provisions are intended to ensure that regardless of the solvency of the Class I hazardous waste injection well permittee, sufficient funds are set aside for post-closure care to prevent the movement of fluids from the injection zone into groundwater of the state of New Mexico.

APPENDIX - E

CROSS REFERENCE TABLE

Appendix E

CROSS REFERENCE TABLE

CLASS I HAZARDOUS WASTE UIC PROGRAM REQUIREMENTS: FEDERAL RULES AND NEW MEXICO NEW RULE SECTIONS

C.F.R. Cite/Title	NMAC Cite	Notes
40 C.F.R. Part 144 Subpart A - General Provisions (one section)		
§ 144.14 Requirements for wells injecting hazardous waste.	20.6.2.5310	
40 C.F.R. Part 144 Subpart E - Permit Conditions (all sections)		
§ 144.51 Conditions applicable to all permits.	20.6.2.5341	
§ 144.52 Establishing permit conditions.	20.6.2.5342	
§ 144.53 Schedule of compliance.	20.6.2.5343	
§ 144.54 Requirements for recording and reporting of monitoring results.	20.6.2.5344	
§ 144.55 Corrective action.	N/A	
40 C.F.R. Part 144 Subpart F - Financial Responsibility: Class I Hazardous Waste Injection Wells (all sections)		
§ 144.60 Applicability.	20.6.2.5320	Incorporated By Reference
§ 144.61 Definitions of terms as used in this subpart.	20.6.2.5320	Incorporated By Reference
§ 144.62 Cost estimate for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.63 Financial assurance for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.64 Incapacity of owners or operators, guarantors, or financial institutions.	20.6.2.5320	Incorporated By Reference
§ 144.65 Use of State-required mechanisms.	N/A	
§ 144.66 State assumption of responsibility.	N/A	
§ 144.70 Wording of the instruments.	20.6.2.5320	Incorporated By Reference
40 C.F.R. Part 146 Subpart G - Criterial and Standards Applicable to Class I Hazardous Waste Injection Wells (all sections)		
§ 146.61 Applicability.	20.6.2.5351	
§ 146.62 Minimum criteria for siting.	20.6.2.5352	
§ 146.63 Area of review.	20.6.2.5353	
§ 146.64 Corrective action for wells in the area of review.	20.6.2.5354	
§ 146.65 Construction requirements.	20.6.2.5355	
§ 146.66 Logging, sampling, and testing prior to new well operation.	20.6.2.5356	
§ 146.67 Operating requirements.	20.6.2.5357	
§ 146.68 Testing and monitoring requirements.	20.6.2.5358	

C.F.R. Cite/Title	NMAC Cite	Notes
§ 146.69 Reporting requirements.	20.6.2.5359	
§ 146.70 Information to be evaluated by the Director.	20.6.2.5360	
§ 146.71 Closure.	20.6.2.5361	
§ 146.72 Post-closure care.	20.6.2.5362	
§ 146.73 Financial responsibility for post-closure care.	20.6.2.5363	
40 C.F.R. Part 148 Subpart A - General (all sections)		
§ 148.1 Purpose, scope and applicability.	20.6.2.5371	Incorporated By Reference
§ 148.2 Definitions.	20.6.2.5371	Incorporated By Reference
§ 148.3 Dilution prohibited as a substitute for treatment.	20.6.2.5371	Incorporated By Reference
§ 148.4 Procedures for case-by-case extensions to an effective date.	20.6.2.5371	Incorporated By Reference
§ 148.5 Waste analysis.	20.6.2.5371	Incorporated By Reference
40 C.F.R. Part 148 Subpart B - Prohibitions on Injection (all sections)		
§ 148.10 Waste specific prohibitions—solvent wastes	20.6.2.5371	Incorporated By Reference
§ 148.11 Waste specific prohibitions—dioxin-containing wastes.	20.6.2.5371	Incorporated By Reference
§ 148.12 Waste specific prohibitions—California list wastes.	20.6.2.5371	Incorporated By Reference
§ 148.14 Waste specific prohibitions—first third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.15 Waste specific prohibitions—second third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.16 Waste specific prohibitions—third third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.17 Waste specific prohibitions; newly listed wastes.	20.6.2.5371	Incorporated By Reference
§ 148.18 Waste specific prohibitions—newly listed and identified wastes.	20.6.2.5371	Incorporated By Reference
40 C.F.R. Part 148 Subpart C - Petition Standards and Procedures (all sections)		
§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.	20.6.2.5371	Incorporated By Reference
§ 148.21 Information to be submitted in support of petitions.	20.6.2.5371	Incorporated By Reference
§ 148.22 Requirements for petition submission, review and approval or denial.	20.6.2.5371	Incorporated By Reference
§ 148.23 Review of exemptions granted pursuant to a petition.	20.6.2.5371	Incorporated By Reference
§ 148.24 Termination of approved petition.	20.6.2.5371	Incorporated By Reference

APPENDIX - F

RULE
REDLINE

Appendix F

NEW MEXICO UIC PROGRAM

ANNOTATED REDLINE COMPARING NEW SECTIONS OF NEW MEXICO RULES (20.6.2.5300 to 20.6.2.5399 NMAC) WITH FEDERAL RULES

[The following provisions are redlined from 40 C.F.R. (the eCFR) as of December 17, 2014]

20.6.2.5300[1]

Formatted: Font: Bold

Formatted: Font: Bold

REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in Sections 20.6.2.5300 through 20.6.2.5399 NMAC, Class I hazardous waste wells are subject to the minimum permit requirements for all Class I wells in Sections 20.6.2.5000 through 20.6.2.5299 NMAC, in addition to the requirements of Sections 20.6.2.5300 through 20.6.2.5399 NMAC. To the extent any requirement in Sections 20.6.2.5300 through 20.6.2.5399 NMAC conflicts with a requirement of Sections 20.6.2.5000 through 20.6.2.5299 NMAC, Class I hazardous waste injection wells must comply with Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

Formatted: Indent: First line: 0.5"

Deleted:

B. Class I hazardous waste injection wells are only authorized for use by petroleum refineries for the waste generated by the refinery ("generator").

Formatted: Font: Bold

C. The New Mexico energy, minerals and natural resources department, oil conservation division will administer and oversee all permitting of Class I hazardous waste wells pursuant to Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

Formatted: Font: Bold

20.6.2.5301

Formatted: Body Text

DEFINITIONS As used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC:

A. "**cone of influence**" means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into groundwater of the State of New Mexico.

B. "**director**" means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee.[2]

C. "**existing well**" means a Class I hazardous waste injection well which has become a Class I hazardous waste injection well as a result of a change in the definition of the injected

[1] This provision is not in the CFR per se but is a necessary predicate to the CFR provisions and to tie the Class I hazardous well provisions to the pre-existing state program regulations.

[2] This addition is necessary because the term is not otherwise defined (Defined in 20.6.2.7 as secretary or director).

(cont.)

waste which would render the waste hazardous under Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3).[3]

D. **"groundwater of the State of New Mexico"** means, consistent with Section 20.6.2.5001 NMAC, an aquifer that contains ground water having a TDS concentration of 10,000 mg/l or less.[4]

E. **"injection interval"** means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

F. **"new well"** means any Class I hazardous waste injection well which is not an existing well.

G. **"transmissive fault or fracture"** is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

20.6.2.5302

FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.3114 NMAC.

A. *Filing Fee.* Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a filing fee of $100 to the Water Quality Management Fund at the time the permit application is submitted. The filing fee is nonrefundable.

B. *Permit Fee.*[5]

Formatted: Font: Bold

Formatted: Not Superscript/ Subscript

Formatted: Body Text

Formatted: Not Superscript/ Subscript

Formatted: Not Superscript/ Subscript

Formatted: Body Text, Indent: First line: 0.5"

---

[3] New Mexico has incorporated 40 CFR 261 by reference. See 20.4.1.200, 201. For clarity the CFR citation is retained. The provision at issue is entitled "Definition of hazardous waste."

[4] "Waters of the State of New Mexico" is a term used by the State in lieu of underground source of drinking water. It is more protective than USDW because it includes all groundwater with a TDS concentration of 10,000 mg/l or less. Thus, it includes all groundwater that can be used for current or potential future drinking water and agricultural water supply. In addition, the State has discretion under existing regulations to protect additional sources of groundwater that exceed 10,000 mg/l TDS if the agency determines such sources can be used for domestic or agricultural water supply.

[5] The initial Permit Fee and annual Administration Fee are intended to fully cover NM OCD's costs in administering the Class I hazardous waste injection well permitting program. In selecting the appropriate size of the fees, NM OCD reviewed permitting fees for other states with existing Class I hazardous waste injection well programs as well as prior Water Quality Control Commission testimony by the New Mexico Environment Department that the cost of issuing and overseeing a five-year permit for a Class I hazardous waste injection well would be approximately $125,000. NM OCD believes that the combined Permit Fee and annual Administrative Fees of $130,000 (over five years) is sufficient because it will allow NM OCD to supplement its existing staff with contractors in order to issue and oversee each permit. (Because the work associated with issuing and overseeing a Class I hazardous waste injection well permit is expected to vary significantly over time, NM OCD does not intend to hire additional staff to implement this program. Instead, it will supplement existing staff and their expertise on an as-needed basis by

(cont.)

(1) Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a permit fee of $30,000 to the Water Quality Management Fund. The permit fee may be paid in a single payment at the time of permit approval or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit approval. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit application review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) Facilities applying for permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. *Annual Administration Fee.* Every facility that receives a UIC Class I hazardous waste injection well permit shall pay an annual administrative fee of $20,000 to the Water Quality Management Fund. The initial administrative fee shall be remitted one year after commencement of disposal operations pursuant to the permit. Subsequent administrative fees shall be remitted annually thereafter.

D. *Renewal Fee.*

(1) Every facility submitting a discharge permit application for renewal of a UIC Class I hazardous waste injection well shall pay a renewal fee of $10,000 to the Water Quality Management Fund. The renewal fee may be paid in a single payment at the time of permit renewal or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit renewal. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit renewal review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) The Director may waive or reduce fees for discharge permit renewals which require little or no cost for investigation or issuance.

E. *Modification Fees.*

(1) Every facility submitting an application for a discharge permit modification of a UIC Class I hazardous waste injection well will be assessed a filing fee plus a modification fee of $10,000 to the Water Quality Management Fund.

(2) Every facility submitting an application for other changes to a UIC Class I hazardous waste injection well discharge permit will be assessed a filing fee plus a minor modification fee of $1,000 to the Water Quality Management Fund.

(3) Applications for both renewal and modification shall pay a filing fee plus renewal fee.

Formatted: Body Text, Indent: Left: 0.5"

Formatted: Body Text, Indent: First line: 0.5"

Formatted: Body Text, Indent: Left: 0.5"

Formatted: Body Text, Indent: First line: 0.5"

Formatted: Body Text, Indent: Left: 0.5"

---

contracting with local universities and other entities that have the necessary qualifications to assist NM OCD in processing permits and providing oversight of permitted wells.)

(4) If the Director requires a discharge permit change as a component of an enforcement action, the facility shall pay the applicable modification fee. If the Director requires a discharge permit change outside the context of an enforcement action, the facility shall not be assessed a fee.

(5) The Director may waive or reduce fees for discharge permit changes which require little or no cost for investigation or issuance.

F. *Financial Assurance Fees.*

(1) Facilities with approved UIC Class I hazardous waste injection well permits shall pay the financial assurance fees specified in Section 20.6.2.3114, Table 2 NMAC.

(2) Facilities relying on the corporate guarantee for financial assurance shall pay an additional fee of $ [TDB] to the Water Quality Management Fund.

20.6.2.5303

CONVERSION OF EXISTING INJECTION WELLS:

An existing Class I non-hazardous waste injection well may be converted to a Class I hazardous waste injection well provided the well meets the modeling, design, compatibility, and other requirements set forth in Sections 20.6.2.5300 through 20.6.2.5399 NMAC and the permittee receives a Class I hazardous waste permit pursuant to those Sections.

20.6.2.5304 – 20.6.2.5309: [RESERVED]

20.6.2.5310

REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

A. *Applicability.* The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also Subsection A(3)(b) of Section 20.6.2.5004 NMAC[6].)

B. *Authorization.* The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for

Formatted: Body Text, Indent: First line: 0.5"

Formatted: Body Text, Indent: Left: 0.5"

Formatted: Not Highlight

Formatted: Font: Bold, Not Highlight

Formatted: Body Text

Deleted: § 144.14

Deleted: .

Deleted: (a)

Formatted: Font: Bold

Deleted: §144.13

Deleted: (b)

Formatted: Font: Bold

[6] § 144.13 is entitled "Prohibition of Class IV wells:" and 20.6.2.5004 NMAC in general, and A(3)(b) specifically, are the state corollary Class IV prohibitions.

(cont.)

authorization to inject as specified in Section 20.6.2.5102 NMAC[7] within 6 months after the approval or promulgation of the State UIC program.

C. *Requirements*. In addition to complying with the applicable requirements of this Part[8], the owner or operator of each facility meeting the requirements of Subsection B of this section, shall comply with the following:

(1) *Notification*. The owner or operator shall comply with the notification requirements of 42 U.S.C. § 6930.[9]

(2) *Identification number*. The owner or operator shall comply with the requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.11)[10].

(3) *Manifest system*. The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.71).[11]

(4) *Manifest discrepancies*. The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.72).[12]

(5) *Operating record*. The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Sections 264.73(a), (b)(1), and (b)(2)).[13]

(6) *Annual report*. The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).[14]

---

[7] § 144.31 is entitled "Application for a permit; authorization for a permit." There is no complete state corollary because 20.6.2.5102 NMAC, which covers the same topic, does not cover Class I hazardous waste wells. In order to allow this cross reference to work, 20.6.2.5102 NMAC has been amended to include hazardous waste wells.

[8] "This Part" includes all of 20.6.2 NMAC (Ground and Surface Water Protection). It includes procedural requirements applicable to all ground and surface water discharge permits as well as all of the substantive regulations for New Mexico's UIC program which, by law, must be a stringent as the requirements EPA imposes under 40 CFR Parts 144 and 146. Therefore, it is the appropriate corollary to Part 146.

[9] This is the federal provision for listing materials as hazardous waste (using the U.S.C. rather than Public Law citation). There is no state corollary to EPA's listing authority, so the federal provision has been retained.

[10] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500. 501. For clarity the CFR citation is retained. The provision at issue is entitled "Identification number."

[11] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500. 501. For clarity the CFR citation is retained. The provision at issue is entitled "Use of manifest system."

[12] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500. 501. For clarity the CFR citation is retained. The provision at issue is entitled "Manifest discrepancies."

[13] New Mexico has incorporated 40 CFR 264 by reference. See20.4.1.500. 501. For clarity the CFR citation is retained. The provision at issue is entitled "Personnel training."

[14] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500. 501. For clarity the CFR citation is retained. The provision at issue is entitled "Biennial report."

(cont.)

Deleted: §144.31

Deleted: (c)

Formatted: Font: Bold

Deleted: p

Deleted: and 40 CFR part 146

Deleted: paragraph (b)

Deleted: section 3010 of Public Law 94-580

Deleted:

Formatted: Font: Italic

Deleted: m

(7) *Unmanifested waste report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).[15]

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.16).[16]

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the Director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in Section 20.6.2.5209 NMAC.[17]

Deleted: §144.52(a)(6)

20.6.2.5311 – 20.6.2.5319: [RESERVED]

20.6.2.5320 ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS). Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 144, Subpart F [insert current effective date] are hereby incorporated by reference.

20.6.2.5321 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS. Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following terms defined in 40 CFR Section 144.61 have the meanings set forth herein, in lieu of the meaning set forth in 40 CFR Section 144.61:

(1) "plugging and abandonment plan" means the plan for plugging and abandonment prepared in accordance with the requirements of 20.6.2.5341 NMAC.

B. The following terms not defined in 40 CFR Part 144, Subsection F have the meanings set forth herein when the terms are used in this part:

(1) "administrator," "regional administrator" and other similar variations means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

[15] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Biennial report."

[16] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Personnel training."

[17] The nearest state corollary to 40 CFR § 144.52 is 20.6.2.5209 NMAC (Plugging and Abandonment for Class I Wells and Class III Wells). As explained in footnote 37, 20.6.2.5209 NMAC is functionally equivalent to EPA's regulations for plugging and abandonment. That section was amended to cover Class I hazardous wells.

Formatted: Font: (Default) +Body (Times New Roman)

(cont.)

(2) "United States Environmental Protection Agency" or "EPA" means New Mexico energy, minerals and natural resources department, oil conservation division or OCD, except when used in 40 CFR Section 144.70(f).

C. The following provisions of 40 CFR Part 144, Subpart F are modified in Section 20.6.2.5321 NMAC:

(1) cross references to 40 CFR Part 144 shall be replaced by cross references to Sections 20.6.2.5300 through 20.6.2.5399 NMAC

(2) the cross reference to §§ 144.28 and 144.51 in Section 144.62(a) shall be replaced by a cross reference to Section 20.6.2.5341 NMAC;[18]

(3) the cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H shall be modified to include cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H and Sections 20.4.2.500 and 20.4.2.600 NMAC.

(4) references to EPA Identification Numbers in financial assurance documents shall be replaced by references to API Well Numbers (US Well Numbers);

(5) the first sentence of 40 CFR Section 144.63(f)(1) shall be replaced with the following sentence: "An owner or operator may satisfy the requirements of this section by obtaining a guarantee from a corporate parent that meets the requirements of 40 CFR Section 144.63(f)(10), including the guarantor meeting the requirements for the owner or operator under the financial test specified in this paragraph."[19]

(6) trust agreements prepared in accordance with 40 CFR Section 144.70(a) must state that they will be administered, construed, and enforced according to the laws of New Mexico;

(7) surety companies issuing bonds prepared in accordance with 40 CFR Section 144, Subpart F must be registered with the New Mexico Office of Superintendent of Insurance;

D. The following provisions of 40 CFR Part 144, Subpart F are omitted from Section 20.6.2.5320 NMAC:

(1) Section 144.65;

---

[18] 40 CFR § 144.28 applies only to existing wells authorized by rule. This reference is unnecessary here, as there are no existing Class I hazardous waste injection wells in New Mexico. Section 20.6.2.5341 is an internal cross reference that replaces 40 CFR § 144.51 (see cross reference table for details).

[19] This change is intended to clarify that, for New Mexico, an entity seeking a Class I hazardous well permit cannot directly use a corporate guarantee to satisfy its financial assurance obligations. Corporate guarantees may only be made by a permittee's corporate parent. This change is intended to make New Mexico's regulations more stringent by limiting the entities that are eligible to make corporate guarantees.

(cont.)

(2) Section 144.66;

(3) the third sentence in 40 CFR Section 144.63(h);[20]

20.6.2.5322 – 20.6.2.5340 [RESERVED]

20.6.2.5341

CONDITIONS APPLICABLE TO ALL PERMITS:

The following conditions apply to all Class I hazardous[21] permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations[22] must be given in the permit.

A. *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the New Mexico Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in a variance issued under Section 20.6.2.1210 NMAC.[23]

B. *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal pursuant to Subpart F of Section 20.6.2.3106 NMAC.[24]

Deleted: §
Deleted: 144.51
Deleted: .
Deleted: UIC
Deleted: (or the corresponding approved State regulations)
Deleted: (a)
Deleted: Safe Drinking Water Act
Deleted: an emergency permit under § 144.34
Deleted: (h)
Deleted: new

[20] The omitted sentence states: "If the injection wells covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Regional Administrators of all such Regions." This sentence is inapplicable to New Mexico's regulations since all covered wells will be located in New Mexico.

[21] The rules at issue only apply to Class I hazardous waste well permits.

[22] "These regulations" now refer to the approved State regulations.

[23] There is no exact state corollary to this CFR provision. The variance provision in 20.6.2.1210 appears to be the closest state corollary to this CFR provision, and we would argue is its functional equivalent. 20.1.3 NMAC provides detailed procedural requirements that the Water Quality Control Commission must follow when granting variances and that provide assurances that variances will only be granted in limited circumstances and under conditions that remain protective of public health and of groundwater resources. Specifically, 20.1.3.18 NMAC requires a public hearing before the WQCC before a variance may be granted and allows members of the public to submit technical and non-technical testimony with respect to any petition for a variance. These broad public participation requirements ensure that variances are used sparingly and prevent permit holders from changing permit conditions without adequate public process.

[24] The purpose of this addition is to make clear that timely renewal applications can authorize the permittee to continue to operate after the expiration date of the original permit. The requirements in Subpart F of Section 20.6.2.3106 NMAC are functionally equivalent to the "Continuation of expiring permit" requirements in 40 CFR § 144.37. Specifically, Subpart F requires a permit holder to submit a permit renewal application 120 days before the permit expires. NM OCD has determined that any failure to act on a permit renewal request within 120 days cannot be attributed to any fault on the part of the permit holder and that, under such circumstances, a permit holder can continue to operate in accordance with the existing permit until NM OCD takes final action regarding the permit renewal.

C. *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F. *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

H. *Duty to provide information.* The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

I. *Duty to provide notice.* Public notice, when required, shall be provided as set forth in 20.6.2.3108 NMAC except that the following notice shall be provided in lieu of the notice required by 20.6.2.3108(B)(2):

A written notice must be sent by certified mail, return receipt requested, to all surface and mineral owners of record within a ½ mile radius of the proposed well or wells.[25]

J. *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

[25] Subsection B(2) of Section 20.6.2.3108 NMAC requires notice to all owners within a 1/3 mile radius. For Class I hazardous waste injection wells, that distance is expanded to ½ mile. The regulation also clarifies that notice must be given to both surface and mineral owners.

Deleted: (c)

Deleted: (d)

Deleted: (e)

Deleted: (f)

Deleted: (g)

Deleted: (h)

Formatted: No underline

Formatted: Body Text, Indent: Left: 0", Space Before: 12 pt

Formatted: No underline

Deleted: (i)

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Sections 20.6.2.5300 through 20.6.2.5399 NMAC,[26] any substances or parameters at any location.

Deleted: SDWA

K. *Monitoring and records.*

Deleted: (j)

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:[27]

(i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and

(ii) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Subsection A(6) of Section 20.6.2.5342 NMAC[28], or under Sections 20.6.2.5351 through 20.6.2.5363 NMAC[29] as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.[30]

Deleted: § 144.52(a)(6)

Deleted: part 146 subpart G

Deleted: For EPA administered programs, the owner or operator shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records

(3) Records of monitoring information shall include:

[26] Reference to the state rules is necessary in lieu of the SDWA.

[27] NM OCD is comfortable having permittees retain records of all monitoring information. First, permittees must also submit regular reports to NM OCD, meaning that the agency will have timely access to critical data about each well. Moreover, the potential liability associated with the failure to retain such records provides a strong incentive for permittees to comply with these record retention requirements.

[28] 40 CFR 144.52(a)(6) is not applicable to Class I hazardous waste injection wells and has been deleted from these regulations. This cross-reference to Subsection A(6)of Section 20.6.2.5342 NMAC was deleted in the final regulations adopted by the WQCC and published in the New Mexico Administrative Code.

[29] Internal cross reference (see cross reference table for details). The cited sections are the corollary to Subpart G.

[30] This sentence is unnecessary as the Class I hazardous program will be administered by New Mexico, not EPA.

(cont.)

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

[31] L. *Signatory requirement.* All applications, reports, or information submitted to the Administrator shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC.[32])

M. *Reporting requirements—*

(1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

[33](3) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(4) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(5) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

Deleted: (4) Owners or operators of Class VI wells shall retain records as specified in subpart H of part 146, including §§ 146.84(g), 146.91(f), 146.92(d), 146.93(f), and 146.93(b) of this chapter.

Deleted: ¶
(k)

Deleted: § 144.32

Deleted: (l)

Deleted: (3) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act. (See § 144.38), in some cases, modification or revocation and reissuance is mandatory.)

Deleted: ¶

Deleted: 4

Deleted: 5

Deleted: 6

[31] Section 144.51(i)(4) is unnecessary as it applies to Class VI wells.

[32] Section 144.32 is entitled "Signatories to permit applications and reports." Section 20.6.2.5101 is the closest state corollary to the CFR provision and has been amended to apply to Class I hazardous waste wells and to apply the certification requirement to reports. Subsection G requires that a corporate signatory be at least a vice president or a representative who performs a similar policy-making function and who has authority to sign for the corporation. A signatory for a partnership must be a general partner. A signatory for a sole proprietor must be the proprietor. A signatory for a municipality, state, federal, or other public agency must be a principle executive officer or a ranking elected official. Subsection G also includes a required certification that is the functional equivalent of the certification in 40 CFR § 144.32 because it includes an assertion that the information is true, accurate, and complete and also acknowledges the penalties for submitting false information, which include the possibility of fines and imprisonment.

[33] Section 144.51(l)(3), "Transfers," has been replaced with 20.6.2.5341(R) below.

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to groundwater of the State of New Mexico; or

(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between groundwater of the State of New Mexico. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the area affected by the noncompliance, including any groundwater of the State of New Mexico; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; the date and time the permittee became aware of the noncompliance; and steps taken or planned to reduce, remediate, eliminate, and prevent reoccurrence of the noncompliance.

(6) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under Subsections M(3), (4), and (5) of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in Subsection M(5)[34] of this Section.

(7) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

N. *Requirements prior to commencing injection.* [35]A new injection well may not commence injection until construction is complete, and

(1) The permittee has submitted notice of completion of construction to the Director; and

(2)

(i) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(ii) The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in Subsection N(1) of this Section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

Formatted: Font: Not Bold, Not Superscript/ Subscript, Not Highlight
Deleted: a USDW
Deleted: USDWs
Deleted: .
Deleted: underground sources of drinking wate
Deleted: 7
Deleted: paragraphs (l)
Deleted: 4
Deleted: 5
Deleted: 6
Deleted: s
Deleted: paragraph
Deleted: (l)
Deleted: 6
Deleted: s
Deleted: 8
Deleted: (m)
Deleted: Except for all new wells authorized by an area permit under § 144.33(c), a
Formatted: Indent: Left: 1"
Deleted: form
Deleted: paragraph (m)
Deleted: s

[34] Subsection references were updated to reflect deletion of Subsection L(3), above.

[35] The state has not adopted area well permitting and thus this clause is unnecessary.

(cont.)

O. The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well.[36]

P. The permittee shall meet the requirements of Section 20.6.2.5209 NMAC.[37]

Q. *Plugging and abandonment report.* Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the Director. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to the Director; or

(2) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the Director, specifying the differences.

R. *Duty to establish and maintain mechanical integrity.*

(1) The permittee shall meet the requirements of Section 20.6.2.5204 NMAC.[38]

[36] The state has not adopted area well permitting and thus this clause is unnecessary.

[37] Section 20.6.2.5209 is the State corollary and has been amended to cover Class I hazardous waste wells. The plugging and abandonment requirements in 20.6.2.5209 are functionally equivalent to those in 40 C.F.R. § 146.10. Specifically, Subsection B requires that each well "shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of groundwater." Subsection B also requires the use of cement plugs. In addition, Subsection C requires that wells must be in a state of static equilibrium with mud weight be equalized from top to bottom by circulating the mud in the well at least one time. Further, Subsection D requires that plugs shall be placed by the balance method, dump bailer method, or two-plug methods unless an equivalent method is approved by the secretary. Section 20.6.2.5209 also cross-references New Mexico's generally applicable permit approval process, which requires that a permit—including the plugging and abandonment plan—be acceptable to the Director and be approved by the Director. (It is implicit in this approval process that there is no approval if the Director deems the plan inadequate.) Finally, Section 20.6.2.5321 NMAC states that all conditions applicable to all permit be incorporated into the permit, either expressly or by reference. This includes the plugging and abandonment plan reference included here.

[38] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells. The mechanical integrity provisions in Section 20.6.2.5204 are functionally equivalent to those in 40 C.F.R. § 146.8. Subsection A states that a well has mechanical integrity if there is no leak in the casing, tubing, or packer that the Director considers to be significant and if there is no detectable conduit for fluid movement out of the injection zone or vertical channel adjacent to the well bore. In this case, the Director takes the place of EPA in determining whether a leak is significant. Subsection B(1) requires leak testing prior to well injection and at least once every five years by monitoring of annulus pressure or through a pressure test with liquid or gas. Subsection B(2) requires the use of a temperature or noise log to test for conduits for fluid movement. Subsection B(3) requires a demonstration of mechanical integrity through "other appropriate tests as the Secretary may require." Subsection C authorizes the use of "equivalent alternative test methods" if NM OCD determines that the test "will reliably demonstrate the mechanical integrity of wells for which its use is proposed." Subsection D requires the use of "methods and standards generally accepted in the affected industry" and requires the permittee to include a description of the tests and methods used when reporting on mechanical integrity. In addition, Subsection D(5) of

(cont.)

Deleted: (n)

Deleted: or in the case of area permits before closure of the project.

Deleted: (o)

Deleted: O

Deleted: A Class I, II or III permit shall include and a Class V permit may include conditions which meet the applicable requirements of § 146.10 of this chapter to ensure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of § 146.10 of this chapter, the Director shall incorporate the plan into the permit as a permit condition. Where the Director's review of an application indicates that the permittee's plan is inadequate, the Director may require the applicant to revise the plan, prescribe conditions meeting the requirements of this paragraph, or deny the permit. A Class VI permit shall include conditions which meet the requirements set forth in § 146.92 of this chapter. Where the plan meets the requirements of § 146.92 of this chapter, the Director shall incorporate it into the permit as a permit condition. For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment.

Deleted: (p)

Deleted: P

Deleted: For EPA-administered programs, w

Deleted: Regional Administrator

Deleted: Regional Administrator

Deleted: regional administrator

Deleted: (q)

Deleted: Q

Deleted: The owner or operator of a Class I, II, III or VI well permitted under this part shall establish mechanical integrity prior to commencing injection or on a schedule determined by the Director. Thereafter the owner or operator of Class I, II, and III wells must maintain mechanical integrity as defined in § 146.8 of this chapter and the owner or operator of Class VI wells must maintain mechanical integrity as defined in § 146.89 of this chapter. For EPA-administered programs, the Regional Administrator may require by written notice that the owner or operator comply with a schedule describing when mechanical integrity demonstrations shall be made.

(2) When the Director determines that a Class I hazardous well lacks mechanical integrity pursuant to Section 20.6.2.5204 NMAC[39], he/she shall give written notice of his/her determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of Section 20.6.2.5209 NMAC[40] or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between groundwater of the State of New Mexico caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to Sections 20.6.2.5204 and 20.6.2.5358 NMAC[41].

(3) The Director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Subsection A of Section 20.6.2.5204 NMAC[42] to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between groundwater of the State of New Mexico.

S. *Transfer of a permit.* The operator shall not transfer a permit without the Director's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25 percent or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the Director denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after receipt of the notice. Until the Director approves the transfer and the required financial assurance is in place, the Director shall not release the transferor's financial assurance.[43]

Deleted: , II, III or VI

Deleted: § 146.8 or § 146.89 of this chapter for Class VI of this chapter

Deleted: § 146.10 of this chapter

Deleted: underground sources of drinking water

Deleted: § 146.8 of this chapter

Deleted: § 146.8(a)(1) of this chapter

Deleted: underground sources of drinking water

Deleted: R

Formatted: Font: Bold

20.6.2.5358 NMAC specifically references the EPA approval process for additional mechanical integrity tests in 40 C.F.R. § 146.8(d). Finally, Subsection D of 20.6.2.5357 NMAC requires the operator of a Class I hazardous waste injection well to maintain mechanical integrity at all times.

[39] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. (See footnote 38.) Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells.

[40] The state already has well plugging and abandonment requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. (See footnote 37.) Section 20.6.2.5209 has been amended to cover Class I hazardous waste wells.

[41] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. (See footnote 38.) Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells. Section 20.6.5358 (internal cross reference) provides additional mechanical integrity testing requirements for Class I hazardous wells.

[42] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. (See footnote 38.) Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells.

[43] This provision, which requires OCD's written approval for a transfer, is more stringent than 40 CFR 144.51(l)(3).

(cont.)

20.6.2.5342

ESTABLISHING PERMIT CONDITIONS:

A. In addition to conditions required in Section 20.6.2.5341 NMAC[44] the Director shall establish conditions, as required on a case-by-case basis under Subsection H of Section 20.6.2.3109 NMAC[45] (duration of permits), Subsection A of Section 20.3.2.5343 NMAC[46] (schedules of compliance), and Section 20.3.2.5344 NMAC[47] Permits for owners or operators of hazardous waste injection wells shall also include conditions meeting the requirements of Section 206.2.5310 NMAC[48] (requirements for wells injecting hazardous waste), Subsections A(1) and A(2) of this section,[49] and Sections 20.6.2.5351 through 20.6.2.5363 NMAC[50,51]

(1) *Financial responsibility.*

(i) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:

(A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Subsection O of Section 20.6.2.5341 NMAC,[52] and Section 20.6.2.5209 NMAC[53,54] and submitted a plugging and abandonment report pursuant to Subsection P of Section 20.6.2.5341 NMAC;[55] or

[44] Internal cross reference (see cross reference table for details).

[45] This CFR section is entitled "Duration of Permits." Subsection H of 20.6.2.3109 is not an exact corollary, but appears to be at least as stringent, since the permit duration is 5 years. 40 CFR 144.36 allows a period of up to 10 years, but with review after 5 years. 20.6.3109 is incorporated by reference into Subsection B of Section 20.6.2.5101 for other UIC wells.

[46] Internal cross reference (see cross reference table for details).

[47] This clause is not necessary for permit programs administered by New Mexico.

[48] Internal cross reference (see cross reference table for details).

[49] Internal cross references (see cross reference table for details). These cross references are updated to reflect the fact that subsections 1-6 and 8 have been deleted as inapplicable.

[50] Internal cross reference (see cross reference table for details).

[51] Because this section sets out specific requirements for Class I hazardous wells, the general requirements for "other wells" are not applicable unless explicitly incorporated above.

[52] Internal cross reference (see cross reference table for details).

[53] The state already has plugging and abandonment requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. (See footnote 37.) Section 20.6.2.5209 has been amended to cover Class I hazardous waste wells.

[54] 40 CFR § 146.92 applies to Class IV wells and is inapplicable here.

[55] Internal cross reference (see cross reference table for details).

(cont.)

Deleted: §
Deleted: 144.52
Deleted: .
Deleted: (a)
Deleted: § 144.51
Deleted: § 144.36
Deleted: § 144.53(a)
Deleted: § 144.54 (monitoring), and for EPA permits only § 144.53(b) (alternate schedules of compliance), and § 144.4 (considerations under Federal law)
Deleted: § 144.14
Deleted: paragraphs (a)
Deleted: 7
Deleted: (a)
Deleted: 9
Deleted: subpart G of part 146
Deleted: Permits for owners or operators of Class VI injection wells shall include conditions meeting the requirements of subpart H of part 146. Permits for other wells shall contain the following requirements, when applicable
Deleted: (1) *Construction requirements* as set forth in part 146. Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. Except as authorized by an area permit, no construction may commence until a permit has been issued containing construction requirements (see § 144.11). New wells shall be in compliance with these requirements prior to commencing injection operations. Changes in construction plans during construction may be approved by the Administrator as minor modifications (§ 144.41). No such changes may be physically incorporated into construction of the well prior to approval of the modification by the Director.¶
(2) Corrective action as set forth in §§ 144.55, 146.7, and 146.84 of this chapter;¶
(3) *Operation requirements* as set forth in 40 CFR part 146, the permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements.¶
(4) *Requirements for wells managing hazardous waste*, as set forth in § 144.14.¶
(5) Monitoring and reporting requirements as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data. For EPA administered programs, monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in table I of 40 CFR 136.3 or in appendix III of 40 CFR part 261 or in certain circumstances by other methods that have been approved by the Regional Administrator.¶ ... [1]
Deleted: 7
Deleted: §§ 144.51(o)
Deleted: 146.10, and 146.92 of this chapter
Deleted: § 144.51(p)

(B) The well has been converted in compliance with the requirements of Subsection N of Section 20.6.2.5341 NMAC;[56] or

(C) The transferor of a permit has received notice from the Director that the transfer has been approved and that the transferee's required financial assurance is in place.

(ii) [57][58] The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of Section 20.6.2.5320 NMAC.[59] [60]

(2) *Additional conditions.* The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water.

B.

(1) In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of this part.[61]

(2) An applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit.[62] An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit.[63]

Deleted: § 144.51(n)

Deleted: the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.

Deleted: The permittee shall show evidence of such financial responsibility to the Director by the submission of a surety bond, or other adequate assurance, such as a financial statement or other materials acceptable to the Director.

Deleted: For EPA administered programs, the Regional Administrator may on a periodic basis require the holder of a lifetime permit to submit an estimate of the resources needed to plug and abandon the well revised to reflect inflation of such costs, and a revised demonstration of financial responsibility, if necessary

Deleted: subpart F of this part

Deleted: For Class VI wells, the permittee shall show evidence of such financial responsibility to the Director by the submission of a qualifying instrument (see § 146.85(a) of this chapter), such as a financial statement or other materials acceptable to the Director. The owner or operator of a Class VI well must comply with the financial responsibility requirements set forth in § 146.85 of this chapter.

Deleted: (8) *Mechanical integrity.* A permit for any Class I, II, III or VI well or injection project which lacks mechanical integrity shall include, and for any Class V well may include, a condition prohibiting injection operations until the permittee shows to the satisfaction of the Director under § 146.8, or § 146.89 of this chapter for Class VI, that the well has mechanical integrity.¶

Deleted: 9

Deleted: (b)

Formatted: Font: Bold

Formatted: Indent: Left: 0.5"

Deleted: the SDWA and

Deleted: parts 144, 145, 146 and 124

Deleted: For a State issued permit, a

Deleted: For a permit issued by EPA, an applicable requirement is a statutory or regulatory requirement (including any interim final regulation) which takes effect prior to the issuance of the permit. Section 124.14 (reopening of comment period) provides a means for reopening EPA permit proceedings at the discretion of the Director where new requirements become effective during the permitting process and are of sufficient magnitude to make additional proceedings desirable.

Deleted: For State and EPA administered programs, a

Deleted: , to the extent allowed in § 144.39

---

[56] Internal cross reference (see cross reference table for details).

[57] This sentence is not necessary given the specific reference to Class I hazardous wells below.

[58] Inapplicable to New Mexico-administered programs.

[59] Internal cross reference (see cross reference table for details).

[60] Inapplicable to Class I hazardous wells.

[61] 20 NMAC 6.2 covers the same requires as 40 CFR parts 144 (Underground Injection Control Program), 145 (State UIC Program Requirements), 146 (Underground Injection Control Program: Criteria and Standards), and 124 (Procedures for Decisionmaking).

[62] Inapplicable to New Mexico-issued permits.

[63] 40 CFR § 144.39(a)(3) states that a Class I hazardous waste injection well permit may be modified or revoked and reissued if "the standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued." There are no exceptions to this requirement for Class I hazardous waste injection wells. However, for certain other classes of wells, 40 CFR § 144.39(a)(3)(i) and (ii) limit the circumstances under which the agency has cause to require a permit modification in response to a change in regulations. Because ***all*** changes to regulations are "applicable requirements" for Class I hazardous waste injection wells and because 40 CFR § 144.39(a)(3)(i) and (ii) do not apply to those wells, the ending phrase "to the extent allowed in § 144.39" is not applicable to Class I hazardous waste injection wells and has been deleted.

(cont.)

(3) New or renewed permits, and to the extent allowed under Section 20.6.2.3109 NMAC[64] modified or terminated permits, shall incorporate each of the applicable requirements referenced in Section 20.6.2.5342 NMAC.[65]

(c) *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

20.6.2.5343

SCHEDULE OF COMPLIANCE:

A. *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with this part[66].

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.

(2) *Interim dates.* Except as provided in Subsection B(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(i) The time between interim dates shall not exceed 1 year.

(ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if Subsection A(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

B. *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows:

Deleted: reissued
Deleted: § 144.39
Deleted: revoked and reissued
Deleted: § 144.52
Deleted: §
Deleted: 144.53
Deleted: .
Deleted: (a)
Deleted: the SDWA and
Deleted: s 144, 145, 146, and 124
Deleted: paragraph (
Deleted: b)
Deleted: paragraph
Deleted: (
Deleted: a)
Deleted: (b)

[64] Section 144.39 is entitled "Modification or revocation and reissuance of permits." Section 20.6.2.3109 NMAC is entitled "Secretary approval, disapproval, modification, or termination of discharge permits, and requirements for abatement plans" and is the State corollary to this provision.

[65] Internal cross reference (see cross reference table for details).

[66] 20 NMAC 6.2 covers the same requires as 40 CFR parts 144 (Underground Injection Control Program), 145 (State UIC Program Requirements), 146 (Underground Injection Control Program: Criteria and Standards), and 124 (Procedures for Decisionmaking).

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(i) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(ii) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(i) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(ii) One schedule shall lead to timely compliance with applicable requirements;

(iii) The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(iv) Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under Subsection B(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

Deleted: paragraph
Deleted: (
Deleted: b)

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.

20.6.2.5344

Deleted: §
Deleted: 144.54

REQUIERMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS:

All permits shall specify:

(a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

(b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

(c) Applicable reporting requirements based upon the impact of the regulated activity and as specified in Section 20.6.2.5359 NMAC.[67] Reporting shall be no less frequent than specified in the above regulations.

20.6.2.5345 – 20.6.2.5350: [RESERVED]

[68]20.6.2.5351

APPLICABILITY:[69] Sections 20.6.2.5351 through 20.6.2.5363 NMAC[70] establish criteria and standards for underground injection control programs to regulate Class I hazardous waste injection wells. Unless otherwise noted in these Sections, supplement the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC and apply instead of any inconsistent requirements for Class I non-hazardous waste injection wells.[71]

20.6.2.5352

MINIMUM CRITERIA FOR SITING:

A. All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore groundwater of the State of New Mexico.

B. The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The Director shall determine geologic suitability based upon:

(1) An analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) An analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

[67] Internal cross reference to reporting provisions for Class I hazardous wells.

[68] Pursuant to 40 CFR § 146.64 (Section 20.6.2.5354 NMAC), the general corrective action requirements in Section 144.55 is not applicable to Class I hazardous wells. That section states, in part, "For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of §§ 144.55 and 146.07."

[69] Adjusted formatting because definitions were moved to 20.6.2.5301.

[70] Internal cross reference (see cross reference table for details).

[71] Subpart A of Section 146 is entitled "General Provisions;" Subpart B of Section 146 is entitled "Criteria and Standards Applicable to Class I Wells." The NMAC does not contain the same divisions. This rephrasing has the same effect of supplementing generally applicable UIC provisions while replacing provisions specific to Class I non-hazardous wells.

Deleted: part 146

Deleted: § 144.55

Deleted: ¶
Corrective action.¶
(a) *Coverage.* Applicants for Class I, II, (other than existing), or III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate the injection zone, or in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review penetrating formations affected by the increase in pressure. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in § 146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of § 146.06 (Area of Review) and § 146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.¶
(b) *Requirements*—¶
(1) *Existing injection wells.* Any permit issued for an existing injection well (other than Class II) requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this section to be completed as soon as possible.¶
(2) *New injection wells.* No owner or operator of a new injection well may begin injection until all required corrective action has been taken.¶
(3) *Injection pressure limitation.* The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure ... [2]

Deleted: 146.61

Deleted: es

Formatted: Space Before: 0 pt

Deleted: ¶
(a) . **A.**

Deleted: This subpart

Deleted: this

Deleted: subpart

Deleted: s

Deleted: subpart A

Deleted: ies

Deleted: subpart B to Class I hazardous waste injection wells

Deleted: (b) **B.** *Definitions* ¶ ... [3]

Deleted: 146.62

Deleted: .

Deleted: (a)

Deleted: an underground source of drinking water

Deleted: (b)

(3) A determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

C. Class I hazardous waste injection wells shall be sited such that:

(1) The injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into groundwater of the State of New Mexico;

(2) The confining zone:

(i) Is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into groundwater of the State of New Mexico; and

(ii) Contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

D. The owner or operator shall demonstrate to the satisfaction of the Director that:

(1) The confining zone is separated from the base of the lowermost groundwater of the State of New Mexico by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for groundwater of the State of New Mexico in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) Within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost groundwater of the State of New Mexico, considering density effects, injection pressures and any significant pumping in the overlying groundwater of the State of New Mexico; or

(3) There is no groundwater of the State of New Mexico present.

(4) The Director may approve a site which does not meet the requirements in Subsections D (1), (2), or (3) of this section if the owner or operator can demonstrate to the Director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of groundwater of the State of New Mexico.

20.6.2.5353

AREA OF REVIEW:

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5202 NMAC.[73] The area of review for Class I hazardous waste injection wells

[73] Section 146.6 is entitled "area of review." Section 20.6.2.5202 NMAC defines the generally applicable area of review for Class I and Class III UIC wells in the NMAC.

shall be a 2-mile radius around the well bore. The Director may specify a larger area of review based on the calculated cone of influence of the well.

20.6.2.5354 **CORRECTIVE ACTION FOR WELLS IN THE AREA OF REVIEW:**

Deleted: §
Deleted: 146.64

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5203 NMAC.[73]

Deleted: §§ 144.55 and 146.07

A. The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the Director outlining the protocol used to:

Deleted: (a)

(1) Identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) Determine whether wells are adequately completed or plugged.

B. The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in Subsection A of Section 20.6.2.5360 NMAC;[74]

Deleted: (b)
Deleted: § 146.70(a)

(1) A tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) A description of each well or type of well and any records of its plugging or completion.

C. For wells that the Director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modification as are necessary to prevent movement of fluids into or between groundwater of the State of New Mexico. Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in Subsection E of this section), the Director shall:

Deleted: (c)
Deleted: USDWs
Deleted: paragraph
Deleted: (
Deleted: c)

(1) Require the applicant to revise the plan;

(2) Prescribe a plan for corrective action as a condition of the permit; or

(3) Deny the application.

[73] Section 144.55 (Corrective Action) and 146.07 (Corrective Action) are generally applicable corrective action provisions for all UIC wells. Section 20.6.2.5203 NMAC includes the generally applicable corrective action requirements for Class I non-hazardous and Class III wells in the NMAC.

[74] Internal cross reference (see cross reference table for details).

D. Requirements:

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under Subsection C of this section. Any such compliance schedule shall provide for compliance no later than 2 years following issuance of the permit and shall require observance of appropriate pressure limitations under Subsection D(3) until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The Director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the Director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between groundwater of the State of New Mexico. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

E. In determining the adequacy of corrective action proposed by the applicant under Subsection C of this section and in determining the additional steps needed to prevent fluid movement into and between groundwater of the State of New Mexico, the following criteria and factors shall be considered by the Director:

(1) Nature and volume of injected fluid;

(2) Nature of native fluids or byproducts of injection;

(3) Geology;

(4) Hydrology;

(5) History of the injection operation;

(6) Completion and plugging records;

(7) Closure procedures in effect at the time the well was closed;

(8) Hydraulic connections with groundwater of the State of New Mexico;

(9) Reliability of the procedures used to identify abandoned wells; and

Deleted: (d)

Deleted: paragraph

Deleted: (c

Deleted:)

Deleted: paragraph

Deleted: (d

Deleted:)

Deleted: USDWs

Deleted: (e)

Deleted: paragraph

Deleted: (

Deleted: c)

Deleted: USDWs

Deleted: USDWs

(10) Any other factors which might affect the movement of fluids into or between groundwater of the State of New Mexico.

20.6.2.5355

CONSTRUCTION REQUIREMENTS:

A. *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) Prevent the movement of fluids into or between groundwater of the State of New Mexico or into any unauthorized zones;

(2) Permit the use of appropriate testing devices and workover tools; and

(3) Permit continuous monitoring of injection tubing and long string casing as required pursuant to Subsection F of Section 20.6.2.5357 NMAC.[25]

B. *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM, or comparable standards acceptable to the Director.

C. *Casing and Cementing of New Wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between groundwater of the State of New Mexico, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the Director shall consider the following information as required by Section 20.6.2.5360 NMAC:[26]

(i) Depth to the injection zone;

(ii) Injection pressure, external pressure, internal pressure and axial loading;

(iii) Hole size;

(iv) Size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification and construction material);

(v) Corrosiveness of injected fluid, formation fluids and temperature;

Deleted: USDWs

Deleted: §

Deleted: 146.65

Deleted: (a)

Deleted: USDWs

Deleted: § 146.67(f)

Deleted: (b)

Deleted: The American Society for Testing Materials

Deleted: (c)

Deleted: USDWs

Deleted: § 146.70

Deleted: well

[25] Internal cross reference (see cross reference table for details).

[26] Internal cross reference (see cross reference table for details).

(vi) Lithology of injection and confining zones;

(vii) Type or grade of cement; and

(viii) Quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains groundwater of the State of New Mexico and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The Director may require more than 120% when the geology or other circumstances warrant it.

Deleted: a

Deleted: USDW

(3) At least one long string casing, using a sufficient number of centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(i) Of sufficient quantity and quality to withstand the maximum operating pressure; and

(ii) In a quantity no less than 120% of the calculated volume necessary to fill the annular space. The Director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(i) The maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(ii) The maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

Deleted: additivies

D. *Tubing and packer.*

Deleted: (d)

(1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the Director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(iii) Injection pressure;

(iv) Annular pressure;

(v) Rate (intermittent or continuous), temperature and volume of injected fluid;

(vi) Size of casing; and

(vii) Tubing tensile, burst, and collapse strengths.

(3) The Director may approve the use of a fluid seal if he determines that the following conditions are met:

Formatted: Indent: Left: 0.5", First line: 0"

(i) The operator demonstrates that the seal will provide a level of protection comparable to a packer;

(ii) The operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(iii) The permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(iv) The design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(v) A secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

20.6.2.5356

Deleted: §

Deleted: 146.66

LOGGING, SAMPLING, AND TESTING PRIOR TO NEW WELL OPERATION:

A. During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in Section 20.6.2.5355 NMAC,[77] and to establish accurate baseline data against which future measurements may be compared. A.

Deleted: (a)

Deleted: § 146.65

[77] Internal cross reference (see cross reference table for details).

descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the Director. At a minimum, such logs and tests shall include:

(1) Deviation checks during drilling on all holes constructed by drilling pilot holes which are enlarged by reaming or another method. Such checks shall be at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

Deleted: a

(2) Such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses. At a minimum, the following logs shall be required in the following situations:

(i) Upon installation of the surface casing:

(A) Resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(B) A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(ii) Upon installation of the long string casing:

(A) Resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(B) A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(iii) The Director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) A mechanical integrity test consisting of:

(i) A pressure test with liquid or gas;

(ii) A radioactive tracer survey;

(iii) A temperature or noise log;

(iv) A casing inspection log, if required by the Director; and

(v) Any other test required by the Director.

B. Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The Director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such

Deleted: (b)

cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.

C. The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

D. At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) Fracture pressure;

(2) Other physical and chemical characteristics of the injection and confining zones; and

(3) Physical and chemical characteristics of the formation fluids in the injection zone.

E. Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(1) A pump test; or

(2) Injectivity tests.

F. The Director shall have the opportunity to witness all logging and testing required by Sections 20.6.2.5351 through 5363 NMAC.[78] The owner or operator shall submit a schedule of such activities to the Director 30 days prior to conducting the first test.

20.6.2.5357

OPERATING REQUIREMENTS:

A. Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into groundwater of the State of New Mexico.

B. Injection between the outermost casing protecting groundwater of the State of New Mexico and the well bore is prohibited.

C. The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the Director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

[78] Internal cross reference (see cross reference table for details).

D. The owner or operator shall maintain mechanical integrity of the injection well at all times.

E. Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) Conditions limiting the temperature, pH or acidity of the injected waste; and

(2) Procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

F. The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) Automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the Director exceed a range and/or gradient specified in the permit; or

(2) Automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the Director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

G. If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under Subsection F of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) Cease injection of waste fluids unless authorized by the Director to continue or resume injection.

(2) Take all necessary steps to determine the presence or absence of a leak; and

(3) Notify the Director within 24 hours after the alarm or shutdown.

H. If a loss of mechanical integrity is discovered pursuant to Subsection G of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) Immediately cease injection of waste fluids;

(2) Take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(3) Notify the Director within 24 hours after loss of mechanical integrity is discovered;

Deleted: (d)
Deleted: (e)
Deleted: (f)
Deleted: (g)
Deleted: paragraph
Deleted: (f
Deleted:)
Deleted: (h)
Deleted: paragraph
Deleted: (g
Deleted:)

(4) Notify the Director when injection can be expected to resume; and

(5) Restore and demonstrate mechanical integrity to the satisfaction of the Director prior to resuming injection of waste fluids.

I. Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(1) The owner or operator shall immediately case injection of waste fluids, and:

(i) Notify the Director within 24 hours of obtaining such evidence;

(ii) Take all necessary steps to identify and characterize the extent of any release;

(iii) Comply with any remediation plan specified by the Director;

(iv) Implement any remediation plan approved by the Director; and

(v) Where such release is into groundwater of the State of New Mexico currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The Director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger groundwater of the State of New Mexico.

J. The owner or operator shall notify the Director and obtain his approval prior to conducting any well workover.

20.6.2.5358

TESTING AND MONITORING REQUIREMENTS:

Testing and monitoring requirements shall at a minimum include:

A. Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(i) The parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(ii) The test methods that will be used to test for these parameters; and

(iii) The sampling method that will be used to obtain a representative sample of the waste to be analyzed.

Deleted: (i)

Deleted: a USDW

Deleted: USDWs

Deleted: (j)

Deleted: §

Deleted: 146.68

Deleted: (a)

Deleted: parameters

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the Director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

B. Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the Director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in Section 20.6.2.5352 NMAC.[79]

Deleted: (b)

Deleted: § 146.62

C. Compatibility of well materials.

Deleted: (c)

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the Director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under Subsection B of Section 20.6.2.5355 NMAC.[80]

Deleted: § 146.65(b)

(2) The Director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(i) Placing coupons of the well construction materials in contact with the waste stream; or

(ii) Routing the waste stream through a loop constructed with the material used in the well; or

(iii) Using an alternative method approved by the Director.

(3) If a corrosion monitoring program is required:

(i) The test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures

[79] Internal cross reference (see cross reference table for details).

[80] Internal cross reference (see cross reference table for details).

and temperatures (measured at the well head) and flow rates of the injection operation; and

(ii) The owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in Subsection B of Section 20.6.2.5355 NMAC.[81]

Deleted: § 146.65(b)

D. *Periodic mechanical integrity testing.* In fulfilling the requirements of Section 20.6.2.5204 NMAC,[82] the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

Deleted: (d)

Deleted: § 146.8

(1) The long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) The bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) An approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole. The Director may require such tests whenever the well is worked over;

(4) Casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The Director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) Any other test approved by the Director in accordance with the procedures in 40 CFR Section 146.8(d)[83] may also be used.

Deleted: §

E. *Ambient monitoring.*

Deleted: (e)

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring

[81] Internal cross reference (see cross reference table for details).

[82] Section 146.8 is entitled "Mechanical Integrity." Section 20.6.2.5204 NMAC includes mechanical integrity requirements for Class I non-hazardous and Class III wells. (See footnote 38.)

[83] 40 C.F.R. § 146.8(d) requires the Director to obtain approval from the EPA administrator after notice in the Federal Register. There is no exact corollary provision in the NMAC, so the C.F.R. reference was retained here. Subsection B(3) of Section 20.6.2.5204 NMAC, however, allows use of "other appropriate tests as the Secretary may require" but does not include any reference to approval from the EPA administrator.

program. At a minimum, the Director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the Director may also require:

(i) Continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the Director;

(ii) The use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the Director, or to provide other site specific data;

(iii) Periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(iv) Periodic monitoring of the ground water quality in the lowermost groundwater of the State of New Mexico; and

Deleted: USDW

(v) Any additional monitoring necessary to determine whether fluids are moving into or between groundwater of the State of New Mexico.

Deleted: USDWs

F. The Director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

Deleted: (f)

20.6.2.5359

Deleted: §

Deleted: 146.69

REPORTING REQUIREMENTS:

Reporting requirements shall, at a minimum, include:

A. Quarterly reports to the Director containing:

Deleted: (a)

(1) The maximum injection pressure;

(2) A description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) A description of any event which triggers an alarm or shutdown device required pursuant to Subsection F of Section 20.6.2.5357 NMAC[84] and the response taken;

Deleted: § 146.67(f)

(4) The total volume of fluid injected;

[84] Internal cross reference (see cross reference table for details).

(5) Any change in the annular fluid volume;

(6) The physical, chemical and other relevant characteristics of injected fluids; and

(7) The results of monitoring prescribed under Section 20.6.2.5358 NMAC[85]

Deleted: § 146.68

B. Reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

Deleted: (b)

(1) Periodic tests of mechanical integrity;

(2) Any other test of the injection well conducted by the permittee if required by the Director; and

(3) Any well workover.

20.6.2.5360

Deleted: §

Deleted: 146.70

INFORMATION TO BE EVALUATED BY THE DIRECTOR:

This section sets forth the information which must be evaluated by the Director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the Director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved.[86]

Deleted: In cases where EPA issues the permit, all the information in this section must be submitted to the Administrator or his designee.

A. Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the Director shall review the following to assure that the requirements of Sections 20.6.2.5000 through 20.6.2.5399 NMAC are met:[87]

Deleted: (a)

Deleted: this part and part 144

(1) Information required in Section 20.6.2.5102 NMAC[88];

Deleted: § 144.31

[85] Internal cross reference (see cross reference table for details).

[86] Inapplicable to New Mexico-administered program.

[87] As explained more fully in footnote 8, 20 NMAC 6.2 (Ground and Surface Water Protection) includes all of New Mexico's UIC regulations and, thus, covers the same requirements as 40 CFR parts 144 (Underground Injection Control Program) and 146 (Underground Injection Control Program: Criteria and Standards).

[88] § 144.31 is entitled "Application for a permit; authorization for a permit." There is no complete state corollary because 20.6.2.5102 NMAC, which covers the same topic, does not cover Class I hazardous waste wells. In order to allow this cross reference to work, 20.6.2.5102 NMAC has been amended to include hazardous waste wells.

(2) A map showing the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads. The map should also show faults, if known or suspected;

(3) A tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the Director may require;

(4) The protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) Maps and cross-sections indicating the general vertical and lateral limits of all groundwater of the State of New Mexico within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each groundwater of the State of New Mexico which may be affected by the proposed injection;

Deleted: underground sources of drinking water

Deleted: underground source of drinking water

(6) Maps and cross-sections detailing the geologic structure of the local area;

(7) Maps and cross-sections illustrating the regional geologic setting;

(8) Proposed operating data;

(i) Average and maximum daily rate and volume of the fluid to be injected; and

(ii) Average and maximum injection pressure;

(9) Proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) Proposed stimulation program;

(11) Proposed injection procedure;

(12) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) Contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any groundwater of the State of New Mexico;

Deleted: USDW

(14) Plans (including maps) for meeting monitoring requirements of Section 20.6.2.5358 NMAC;[89]

Deleted: § 146.68

(15) For wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under Section 20.6.2.5354 NMAC;[90]

Deleted: § 146.64

(16) Construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) A demonstration pursuant to Section 20.6.2.5320 NMAC,[91] that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

Deleted: part 144, subpart F

B. Prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the Director shall review the following information, which shall be included in the completion report:

Deleted: (b)

(1) All available logging and testing program data on the well;

(2) A demonstration of mechanical integrity pursuant to Section 20.6.2.5358 NMAC;[92]

Deleted: § 146.68

(3) The anticipated maximum pressure and flow rate at which the permittee will operate;

(4) The results of the injection zone and confining zone testing program as required in Subsection A(9) of Section 20.6.2.5360 NMAC;[93]

Deleted: § 146.70(a)(9)

(5) The actual injection procedure;

(6) The compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

(7) The calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Subsections A(2) and (3) of Section 20.6.2.5360 NMAC,[94]

Deleted: § 146.70(a) (2) and (3)

[89] Internal cross reference (see cross reference table for details).

[90] Internal cross reference (see cross reference table for details).

[91] Internal cross reference (see cross reference table for details). Part 144, subpart F refers to 40 CFR §§ 144.60-70.

[92] Internal cross reference (see cross reference table for details).

[93] Internal cross reference (see cross reference table for details).

[94] Internal cross reference (see cross reference table for details).

(cont.)

(8) The status of corrective action on wells identified in Subsection A(15) of Section 20.6.2.5360 NMAC.[95]

Deleted: § 146.70(a)(15)

C. Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the Director shall review the information required in Subsection A(4) of Section 20.6.2.5361[96] NMAC and Subsection A of Section 20.6.2.5362 NMAC.[97]

Deleted: (c)

Deleted: §§ 146.71(a)(4) and 146.72(a)

D. Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

Deleted: (d)

(1) The generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) Injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

20.6.2.5361

Deleted: §

Deleted: 146.71

CLOSURE:

A. *Closure Plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of Subsection D of this section and is acceptable to the Director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

Deleted: (a)

Deleted: paragraph (d)

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the Director no later than the date on which notice of closure is required to be submitted to the Director under Subsection B of this section.

Deleted: paragraph (b)

(3) The plan shall assure financial responsibility as required in Subsection A(7) of Section 20.6.2.5342 NMAC.[98]

Deleted: § 144.52(a)(7)

[95] Internal cross reference (see cross reference table for details).

[96] Internal cross reference (see cross reference table for details).

[97] Internal cross reference (see cross reference table for details).

[98] Internal cross reference (see cross reference table for details).

(4) The plan shall include the following information:

(i) The type and number of plugs to be used;

(ii) The placement of each plug including the elevation of the top and bottom of each plug;

(iii) The type and grade and quantity of material to be used in plugging;

(iv) The method of placement of the plugs;

(v) Any proposed test or measure to be made;

(vi) The amount, size, and location (by depth) of casing and any other materials to be left in the well;

(vii) The method and location where casing is to be parted, if applicable;

(viii) The procedure to be used to meet the requirements of Subsection D(5) of this section;

Deleted: paragraph (d)(5)

(ix) The estimated cost of closure; and

(x) Any proposed test or measure to be made.

(5) The Director may modify a closure plan following the procedures of Section 20.6.2.3109 NMAC.[29]

Deleted: § 124.5

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(i) Has received authorization from the Director; and

(ii) Has described actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger groundwater of the State of New Mexico during the period of temporary disuse. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

Deleted: USDWs

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the Director 30 days prior to resuming operation of the well.

[29] Section 124.5 is entitled "Modification, revocation, and reissuance, or termination of permits; subsection (c) applies to NPDES and UIC permits. Section 20.6.2.3109 NMAC provides corollary requirements for the approval, disapproval, modification, or termination of NPDES and UIC permits.

B. *Notice of intent to close.* The owner or operator shall notify the Director at least 60 days before closure of a well. At the discretion of the Director, a shorter notice period may be allowed.

Deleted: (b)

C. *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the Director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

Deleted: (c)

(1) A statement that the well was closed in accordance with the closure plan previously submitted and approved by the Director; or

(2) Where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

D. *Standards for well closure.*

Deleted: (d)

(1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the Director. The Director shall analyze the pressure decay and the transient pressure observations conducted pursuant to Subsection E(1)(i) of Section 20.6.2.5358 NMAC[100] and determine whether the injection activity has conformed with predicted values.

Deleted: § 146.68(e)(1)(i)

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(i) Pressure tests with liquid or gas;

(ii) Radioactive tracer surveys;

(iii) Noise, temperature, pipe evaluation, or cement bond logs; and

(iv) Any other test required by the Director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between groundwater of the State of New Mexico.

Deleted: USDWs

(5) Placement of the cement plugs shall be accomplished by one of the following:

[100] Internal cross reference (see cross reference table for details). In the final version, this cross reference was changed to Subsection E(1) of Section 20.6.2.5358 NMAC to reflect the subsections in the NMAC and CFR.

(i) The Balance Method;

(ii) The Dump Bailer Method;

(iii) The Two-Plug Method; or

(iv) An alternate method, approved by the Director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).

20.6.2.5362

Deleted: §

Deleted: 146.72

POST-CLOSURE CARE:

A. The owner or operator of a Class I hazardous waste well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of Subsection B of this section and is acceptable to the Director. The obligation to implement the post closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

Deleted: (a)

Deleted: paragraph (b)

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under Subsection C of Section 20.6.2.5361 NMAC.[101]

Deleted: § 146.71(c)

(3) The plan shall assure financial responsibility as required in Section 20.6.2.5363 NMAC.[102]

Deleted: § 146.73

(4) The plan shall include the following information:

(i) The pressure in the injection zone before injection began;

(ii) The anticipated pressure in the injection zone at the time of closure;

[101] Internal cross reference (see cross reference table for details).

[102] Internal cross reference (see cross reference table for details).

(iii) The predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico;

Deleted: USDW

(iv) Predicted position of the waste front at closure;

(v) The status of any cleanups required under Section 20.6.2.5354 NMAC;[103] and

Deleted: § 146.64

(vi) The estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the Director may modify the post-closure plan after submission of the closure report following the procedures in Section 20.6.2.3109 NMAC.[104]

Deleted: § 124.5.

B. The owner or operator shall:

Deleted: (b)

(1) Continue and complete any cleanup action required under Section 20.6.2.5354 NMAC,[105] if applicable;

Deleted: § 146.64

(2) Continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico. The Director may extend the period of post-closure monitoring if he determines that the well may endanger groundwater of the State of New Mexico.

Deleted: USDW

Deleted: a USDW

(3) Submit a survey plat to the local zoning authority designated by the Director. The plat shall indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat shall be submitted to the Director.[106]

Deleted: Regional Administrator

Deleted: of the appropriate EPA Regional Office

(4) Provide appropriate notification and information to such State and local authorities as have cognizance over drilling activities to enable such State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone.

(5) Retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids. The Director shall require the owner or operator to deliver the records to the Director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the Director for that purpose.

---

[103] Internal cross reference (see cross reference table for details).

[104] Section 124.5 is entitled "Modification, revocation, and reissuance, or termination of permits; subsection (c) applies to NPDES and UIC permits. Section 20.6.2.3109 NMAC provides corollary requirements for the approval, disapproval, modification, or termination of NPDES and UIC permits.

[105] Internal cross reference (see cross reference table for details).

[106] In this case, the Director of OCD replaces the EPA Regional Administrator as the recipient of a copy of the plat.

C. Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) The fact that land has been used to manage hazardous waste;

(2) The name of the State agency or local authority with which the plat was filed, as well as the address of the Director;[107]

(3) The type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

20.6.2.5363

FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE:

The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in Section 20.6.2.5320 NMAC.[108] The amount of the funds available shall be no less than the amount identified in Subsection A(4)(vi) of Section 20.6.2.5362 NMAC.[109] The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

20.6.2.5364 – 20.6.2.5370: [RESERVED]

[NOTE: After Navajo Refining's initial petition to the WQCC, a decision was made to eliminate the proposed additions of 20.6.2.5371 – 72 NMAC and leave the no migration petition process with EPA Region 6. As a result, 20.6.2.5371 – 72 were not included in the final rule adopted by the WQCC and are not included in the New Mexico Administrative Code.]

20.6.2.5371 ADOPTION OF 40 CFR PART 148 (HAZARDOUS WASTE INJECTION RESTRICTIONS). Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 148 [insert current effective date] are hereby incorporated by reference.[110]

---

[107] In this case, the Director of OCD replaces the EPA Regional Administrator as the recipient of a copy of the plat.

[108] Internal cross reference (see cross reference table for details). Part 144, subpart F refers to 40 CFR §§ 144.60-70.

[109] Internal cross reference (see cross reference table for details).

[110] 40 CFR Part 148, Subpart A includes numerous references to 40 CFR Parts 261-268. These regulations have been incorporated by reference (as of July 1, 2008) into the New Mexico Administrative Code. Rather than

(cont.)

Deleted: (c)

Deleted: Regional Environmental Protection Agency Office to which it was submitted

Deleted: §

Deleted: 146.73

Deleted: 40 CFR part 144, subpart F.

Deleted: § 146.72(a)(4)(vi)

20.6.2.5372 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS. Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following terms used in 40 CFR Part 148 have the meanings set forth herein when the terms are used in this part:

(1) "Administrator" means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee.

B. The following provisions of 40 CFR Part 148 are modified in Section 20.6.2.5381 NMAC:

(1) The cross reference to 40 C.F.R. § 146.6(a) in Section 148.1(d)(1) shall be replaced by a cross reference to Subsection B(1) of Section 20.6.2.5002 NMAC.

(2) The cross reference to § 146.63 in Section 148.20(a)(2) shall be replaced by a cross reference to Section 20.6.2.5353 NMAC.

(3) The cross reference to § 146.64 in Section 148.20(a)(2) shall be replaced by a cross reference to Section 20.6.2.5354 NMAC.

(4) The cross reference to § 124.10 in Section 148.22(b) shall be replaced by a cross reference to Section 20.6.2.3108 NMAC.

(5) The cross reference to § 146.67(i) in Section 148.24(b)(2)(ii) shall be replaced by a cross reference to Subsection I of Section 20.6.2.5357 NMAC.

(6) The cross reference to § 124.5 in Section 148.24(c) shall be replaced by a cross reference to Sections 20.6.2.3108 through 20.6.2.3112 NMAC.[111]

(7) References to "Underground Source of Drinking Water" or "USDW" shall be replaced with references to "groundwater of the State of New Mexico" as defined in 20.6.2.5301 NMAC.

I. The following provisions of 40 CFR Part 148, Subpart B are omitted from Section 20.6.2.5371 NMAC:

---

including circular cross-references to NMAC and back to the CFR, we propose not modifying these cross references.

[111] This is a reference to a general rule regarding "Modification, revocation and reissuance, or termination of permits" (applicable to all programs). It also cross references § 124.6, which lists the procedural steps that are applicable to draft permits. Sections 20.6.2.3108-12 NMAC are the general provisions approving, disapproving, modifying, or terminating discharge permits and, we would assert, are functionally equivalent to the provisions in the CFR.

(cont.)

(1) Section 148.15(c)[112]

(2) Section 148.16(d)[113]

[112] This subsection only applied from July 8, 1989 to December 8, 1989 and thus, would not apply to New Mexico's UIC Class I hazardous waste injection well program.

[113] This subsection cross-references three provisions in 40 CFR Part 268 that are no longer in the CFR and are listed as "reserved."

Page 15: [1] Deleted Author

(1) *Construction requirements* as set forth in part 146. Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. Except as authorized by an area permit, no constuction may commence until a permit has been issued containing construction requirements (see § 144.11). New wells shall be in compliance with these requirements prior to commencing injection operations. Changes in construction plans during construction may be approved by the Administrator as minor modifications (§ 144.41). No such changes may be physically incorporated into construction of the well prior to approval of the modification by the Director.

(2) Corrective action as set forth in §§ 144.55, 146.7, and 146.84 of this chapter.

(3) *Operation requirements* as set forth in 40 CFR part 146; the permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements.

(4) *Requirements for wells managing hazardous waste,* as set forth in § 144.14.

(5) Monitoring and reporting requirements as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data. For EPA administered programs, monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in table I of 40 CFR 136.3 or in appendix III of 40 CFR part 261 or in certain circumstances by other methods that have been approved by the Regional Administrator.

(6) After a cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the plan unless he:

(i) Provides notice to the Regional Administrator;

(ii) Describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.

Page 19: [2] Deleted Author

Corrective action.

(a) *Coverage.* Applicants for Class I, II, (other than existing), or III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate the injection zone, or in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review penetrating formations affected by the increase in pressure. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in § 146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of § 146.06 (Area of Review) and § 146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.

(b) *Requirements—*

(1) *Existing injection wells.* Any permit issued for an existing injection well (other than Class II) requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this section to be completed as soon as possible.

(2) *New injection wells.* No owner or operator of a new injection well may begin injection until all required corrective action has been taken.

(3) *Injection pressure limitation.* The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.

(4) *Class III wells only.* When setting corrective action requirements the Director shall consider the overall effect of the project on the hydraulic gradient in potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in § 146.33(b) shall be designed to verify the validity of such determinations.

§

Page 19: [3] Deleted **Author**

(b) **B.** *Definitions.*

Cone of influence means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into an underground source of drinking water (USDW).

Existing well means a Class I well which was authorized prior to August 25, 1988, by an approved State program, or an EPA-administered program or a well which has become a Class I well as a result of a change in the definition of the injected waste which would render the waste hazardous under § 261.3) of this part.

Injection interval means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

New well means any Class I hazardous waste injection well which is not an existing well.

Transmissive fault or fracture is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

§

APPENDIX - G

ADMINISTRATIVE RECORD

Appendix G

Administrative Record for WQCC Hearing (WQCC 14-15)

1. Petition to Amend 20.6.2.5000 NMAC and Request for Hearing (11/5/14)
2. Notice of Docketing (11/6/14)
3. Amended Notice of Docketing (11/10/14)
4. First Amended Petition to Amend 20.6.2.5000 NMAC and Request for Hearing (11/12/14)
5. Notice of First Amended Petition (11/12/14)
6. Minutes of November 18, 2014 WQCC Meeting (11/18/14)
7. Unopposed Motion to Vacate and Reset Hearing (12/18/14)
8. Notice of Hearing Officer Designation (12/23/14)
9. Order Granting Motion to Vacate and Reset Hearing (12/29/14)
10. Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC (4/30/15)
11. Procedural Order (5/15/15)
12. Notice of Withdrawal and Substitution of Counsel, Entry of Appearance and Request for Service List and Amendment (5/20/15)
13. Second Notice of Service List (5/21/15)
14. Affidavit of Publication: New Mexico Register (5/14/15)
15. Affidavit of Publication: Clovis News Journal (5/15/15)
16. Affidavit of Publication: Hobbs News-Sun (5/16/15)
17. Affidavit of Publication: The Gallup Independent (5/16/15)
18. Affidavit of Publication: Silver City Daily Press and Independent (5/16/15)
19. Affidavit of Publication: The Santa Fe New Mexican (5/16/15)
20. Affidavit of Publication: Roswell Daily Record (5/16/15)
21. Affidavit of Publication: Artesia Daily Press (5/17/15)

22. Affidavit of Publication: Carlsbad Current Argus (5/17/15)

23. Affidavit of Publication: The Albuquerque Journal (5/17/15)

24. Affidavit of Publication: The Farmington Daily Times (5/18/15)

25. Affidavit of Publication: The Cibola Beacon (5/19/15)

26. Affidavit of Publication: The Herald T or C (5/20/15)

27. Affidavit of Publication: The Taos News (5/21/15)

28. Affidavit of Publication: New Mexico Register (5/29/15)

29. Affidavit of Publication: Las Cruces Sun-News (6/12/15)

30. Affidavit of Publication: Las Cruces Bulletin (6/12/15)

31. NM OCD Notice of Intent to Present Technical Testimony (6/15/15)

32. Navajo Refining Company LLC's Notice of Intent to Present Technical Testimony (6/15/15)

    Pre-filed Direct Testimony of Robert O'Brien (with Exhibits A-B)

    Pre-filed Direct Testimony of Michael McKee (with Exhibit A)

    Pre-filed Direct Testimony of Robert Van Voorhees (with Exhibits A-I)

    Pre-filed Direct Testimony of Alberto Gutierrez (with Exhibits A-C)

    Pre-filed Direct Testimony of Francisco Salvarrey (with Exhibit A)

33. Non-technical Written Comments

    Representative Cathrynn N. Brown (7/3/2015)

    Artesia Chamber of Commerce (7/14/2015)

    Eddy County Board of Commissioners (6/30/2015)

    Lea County Board of Commissioners (7/7/2015)

    New Mexico Oil & Gas Association (7/6/2015)

34. Minutes of July 14, 2015, WQCC Meeting

35. Transcript of July 14, 2015, WQCC Hearing

36. WQCC Statement of Reasons and Final Order (7/31/15)

APPENDIX – G1

PETITION TO AMEND 20.6.2.5000 NMAC

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER TO AMEND 20.6.2.5000 NMAC

No. WQCC 14-15 (R)

PETITION TO AMEND 20.6.2.5000 NMAC
AND REQUEST FOR HEARING

Pursuant to the New Mexico Water Quality Act ("WQA"), NMSA 1978, §§76-6-1 to 76-6-17 (2009) and Section 301 of the *Guidelines for Water Quality Control Commission Hearings*, Navajo Refining Company, L.L.C. ("Navajo") petitions the Commission to adopt new rules authorizing Class I underground injection control wells for hazardous waste ("Class I hazardous waste injection wells") generated by the oil and gas industry, including refineries ("oil and gas industry"), 20.6.2.5300 NMAC to 20.6.2.5305 NMAC, hereinafter referred to as the Water Conservation Rule ("WCR"). The WCR would incorporate existing federal regulations, promulgated under the authority of the Safe Drinking Water Act ("SWDA") for Class I hazardous waste injection wells. Navajo's proposed Water Conservation Rule, attached as Attachment 1, would amend 20.6.2.5004 and add new text as 20.6.2.5300 through 20.6.2.5305.

I. Statement of Reasons for the Rule Change

Navajo operates an oil refinery in Artesia, New Mexico and generates a wastewater stream that, on a constituent basis, is very similar to produced water routinely disposed of in connection with the production of oil and gas. For the reasons stated in this petition, it desires to use an injection well to dispose of process wastewaters that may be classified as hazardous due to concentration of constituents through water reuse. To do so, it seeks by this petition to authorize and to implement a hazardous waste injection well permitting regime that adopts federal requirements for such wells.

Authorizing Class I hazardous waste injection wells and adopting a permitting regime for those wells used in the oil and gas industry will provide a number of benefits to both the State and to refineries and others in the oil and natural gas industry. These benefits include the following:

1. Water conservation: Allowing for permitting of Class I hazardous waste injection wells will promote water reuse and conservation by allowing for extraction and disposal of hazardous constituents in the waste streams generated by the oil and gas industry.
2. Waste minimization: The WCR would promote waste minimization. Through water reuse, the final effluent stream that would be sent to a Class I hazardous waste injection well could be materially smaller than a full effluent stream that is typically disposed of now in underground injection control wells for non-hazardous wastes. Wastes generated by those in the oil and gas industry would therefore be minimized.
3. Economic benefits: The WCR would provide a number of economic benefits to communities supporting refineries and other oil and gas operations. Through reuse of water and reduction of fresh water usage in the oil and gas industry, more fresh water is available for use by the surrounding communities and businesses, including agriculture.
4. Preservation of disposal capacity: Because disposal capacity at existing oil and gas industry wells is finite, reducing effluent discharges to those wells preserves refining and disposal capacity. This capacity fosters oil and gas production by allowing for additional crude oil and recovered oil processing.
5. Improved oil and gas industry reliability: The WCR will also allow those in the oil and gas industry to improve reliability in their systems and production by allowing the refineries they depend upon to manage any unexpected generation of hazardous waste in

the wastewater stream. Currently, refineries must treat wastewaters before disposal so that the waters are not hazardous. This treatment process can curtail crude oil throughput. Creating disposal capacity for hazardous wastewaters will allow refineries to maintain greater crude oil throughput, avoiding adverse financial consequences to their suppliers and the State.

II. Oil and Gas Industry Waste Management in New Mexico

Oil production requires that companies in the oil and gas industry complete a number of processes in order to transform crude oil and recovered oil (i.e., oil recovered from oil-bearing residuals generated in the oil and gas industry, specifically refineries, as a waste minimization practice) into refined products. During these processes, the oil and gas industry, including refineries, uses significant quantities of water and generates wastewater streams that can be recycled, especially if certain chemical constituents can be removed from these streams before reuse. Some of these chemical constituents could be considered hazardous waste if present in sufficient concentrations. Class I hazardous waste injection wells provide a demonstrated means for safely disposing of such wastes in deep geologic formations that are isolated from aquifers suitable for use as water supplies. The deep formations used for injection would be substantially below aquifers used for fresh drinking and agricultural/industrial water supplies and are separated from those supplies by numerous layers of impermeable rock formations. The WCR require that any injection of fluids by the well occur beneath the lowermost formation that contains 10,000 milligrams per liter or less of total dissolved solids ("TDS").

Since 2001, Class I hazardous waste injection wells have not been authorized in New Mexico, but elsewhere, under federal law, the United States Environmental Protection Agency ("EPA") allows disposal of hazardous waste by use of Class I hazardous waste injection wells.

The federal regulations were promulgated in 1983 and have a demonstrated history of protection of human health and the environment. In 1984 New Mexico assumed primacy over the Safe Drinking Water Act program. After New Mexico assumed primacy the federal regulations changed to impose different requirement for Class I hazardous waste injection wells. New Mexico never amended its regulations to incorporate the changes made in the federal regulations. Therefore, the State's pre-2001 regulations did not impose different requirements for hazardous waste wells. In 2001, New Mexico eliminated the regulation allowing this practice because it had not been used and no such wells had been drilled.

The proposed amendment does not alter the responsibilities of the New Mexico Environment Department ("NMED") or the Oil Conservation Division ("OCD") for administering the programs currently delegated to the State by the EPA under the SDWA. Since the WCR only applies to the oil and gas industry, the requirements of the WCR (adopting the federal EPA regulations) would be administered by OCD. OCD currently administers the Underground Injection Control well program for oil and gas related industries, and is authorized to administer the permitting regime for Class I hazardous waste injection wells pursuant to the EPA's delegation to New Mexico under the SDWA.

As described fully below, Class I wells are a safe and economical way to dispose of wastewater. Federal regulations are comprehensive, imposing exacting requirements for the selection of the site, well construction standards, and the day-to-day operations to ensure that the USDW is safe and secure.

III. Background of Class I Injection Wells

Wastewater is an unavoidable byproduct of the manufacturing processes that create thousands of products we use every day. While industries continue to research and implement

ways to reduce waste by recycling and improving the manufacturing processes, wastes are still generated and require disposal.

Class I underground injection wells represent a technically sound and safe disposal option for high-volume wastewaters. Class I underground injection wells present a low risk wastewater disposal option, as demonstrated by stringent design and operating requirements and a history of safe disposal that spans many decades.

(a) Regulatory Framework for UIC Wells

"Underground injection" refers to the placement of fluids, often wastewater, underground through a well bore. As the Environmental Protection Agency ("EPA") Regional Office for Region 6 found, "some waste fluids are generated in such volumes as to make treatment economically impractical. If properly constructed, and operated, injection wells are by far the best way to dispose of these waste fluids."[1] Not allowing underground injection wells "removes a safe, economically proven technology by which wastes can be effectively addressed."[2]

As part of the federal Safe Drinking Water Act ("SDWA") of 1974, a federal Underground Injection Control Program ("UIC Program") was established.[3] Since ground water is a major source of drinking water in the United States, the UIC Program requirements were designed to prevent ground water contamination. Most ground water used as drinking water today contains less than 3,000 milligrams per liter of total dissolved solids ("TDS"). The UIC Program protects waters with significantly higher mineral concentrations to ensure that all water with the potential to be treated and used as drinking water in the future is protected.

---

[1] ENVIRONMENTAL PROTECTION AGENCY, *Frequently Asked Questions About the Underground Injection Control Program*, http://www.epa.gov/Region6/water/swp/uic/faq3.htm#banned.
[2] *Id.*
[3] 42 U.S.C. §300h.

New Mexico, like other states and the federal government, has a reasonable objective to protect any underground source of drinking water ("USDW"). A USDW is defined by EPA as an "aquifer or its portion which supplies any public water system or contains a sufficient quantity of ground water to supply a public water system, and either currently supplies a public water system, or contains less than 10,000 milligrams per liter of [TDS] and is not an exempted aquifer."[4] In essence, a USDW is a collection of clean water large enough that it could potentially serve the public.

(b) Class I Wells

There are six classes of underground injection wells. These classes are based on the types of fluids injected; each well classification has technical standards for well design and construction, injection depth, and operating and monitoring techniques in order to ensure that wells that serve the same function are designed in a way to protect USDWs.

Class I wells, further classified as hazardous and non-hazardous wells, inject industrial or municipal wastewater far beneath the lowermost source of drinking water. Class I wells are used mainly by the following industries: petroleum refining, metal production, chemical production, pharmaceutical production, commercial waste disposal, food production, and municipal wastewater treatment.[5]

Class I wells inject wastewater into formations without suitable water to extract as a source of drinking water and that are located thousands of feet below the land surface. The geological formation into which the wastewater is injected, known as the injection zone, must be demonstrated to be sufficiently porous and permeable so that the wastewater can enter the rock formation without an excessive buildup of pressure. The injection zone is typically beneath a

---

[4] 40 C.F.R. § 144.3

[5] ENVIRONMENTAL PROTECTION AGENCY, *Industrial & Municipal Waste Disposal Wells (Class I)*, http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.

large, relatively non-permeable layer of rock, known as the confining zone, which along with the natural force of gravity, will hold injected fluids in place and restrict them from moving upward toward a USDW. A diagram depicting the general schematic of a Class I well is attached to this rulemaking petition as Attachment 2.

There are currently approximately 550 Class I injection wells in the United States. Approximately 121 of these wells (22%) are Class I hazardous waste injection wells.[6] Most Class I wells are located in EPA Region 6 (comprised of Arkansas, Louisiana, New Mexico, Oklahoma, Texas, and 66 Native American Tribes).[7] At least 21 states currently have Class I injection wells.[8] Texas has the greatest number of Class I wells, including hazardous waste wells, followed by Louisiana.[9] Florida and Kansas also have a large number of Class I wells.[10]

(c) Federal Regulations Regarding Class I Wells

Federal regulations strictly control the creation and maintenance of Class I wells. EPA requires that Class I wells be located in geologically stable areas that are free of fractures or faults through which injected fluids could travel to drinking water sources.[11] Well operators must also show that there are no wells or other artificial pathways between the injection zone and USDWs through which fluids can travel. The site-specific geologic properties of the subsurface around the well offer another safeguard against the movement of injected wastewaters to a USDW.

---

[6] *Id.*
[7] ENVIRONMENTAL PROTECTION AGENCY, *EPA Region 6 (South Central)*, http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.
[8] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 3(March 2001).
[9] *Id.*
[10] *Id.*
[11] 40 CFR §146.62.

All Class I wells are designed and constructed to prevent the movement of injected wastewaters into USDWs. Their stringent, multi-layer construction[12] has many redundant safety features. One of these features is the well's casing, which prevents the borehole from caving in. The casing is made out of a corrosion-resistant material such as steel or fiberglass-reinforced plastic. It consists of an outer surface casing, that extends the entire depth of the well, and an inner "long string" casing that extends from the surface to or through the injection zone. The innermost layer of the well, the injection tubing, brings injected wastewater from the surface to the injection zone.

All of the materials that injection wells are made are made of are corrosion-resistant and compatible with the wastewater and the formation rocks and fluids into which they come in contact. A constant pressure is maintained in the space and is continuously monitored to verify the well's mechanical integrity and proper operational conditions.[13] Trained operators are responsible for day-to-day injection well operation, maintenance, monitoring, and testing.[14] In addition to monitoring the well operation, operators of hazardous waste wells are required to develop and follow a waste analysis plan for monitoring the physical and chemical properties of the injected wastewater.[15]

(d) Safety Factors and Safety Record

Because these Class I wells inject waste far below the deepest possible USDW, there is very little chance of any negative effect on potentially usable ground water. In fact, in its March 2001 Study of Class I wells the, EPA said that "the probability of loss of waste confinement due to Class I injection has been demonstrated to be low" and "existing Class I regulatory controls

---

[12] Wells typically consist of three or more concentric layers of pipe: surface casing, long string casing, and injection tubing. Class I hazardous wells must have 3 layers of casing. [40 CFR 146.65(c)].
[13] 40 CFR §146.67.
[14] 40 CFR§ 146.13(b).
[15] 40 CFR §146.68 (a).

are strong, adequately protective, and provide an extremely low-risk option in managing the wastewaters of concern."[16] In other words, the deep geologic formations that receive the waste ("the injection zone"), the related impermeable confining layers above the injection zone, and the many layers of protection required in the construction, operation, and monitoring of wells, provide many safeguards against upward fluid movement, effectively protect USDWs.

Class I injection wells that meet EPA's design and operating requirements are well studied and pose minimal risks. In 1998, scientists quantitatively estimated the risk of waste containment loss as a result of various sets of events associated with Class I hazardous waste wells.[17] According to the study, because of the redundant safety systems in a typical Class I well, loss of containment would requires a series of improbable events to occur in sequence. As a result, the calculated probability of containment loss resulting from each of the scenarios examined ranges from one-in-one-million to one-in-ten-quadrillion.[18]

In the field, the probability of Class I well failures, both non-hazardous and hazardous, has also been demonstrated to be very low. Many early Class I failures were a result of historic practices that are no longer permissible under the federal UIC regulations, such as improper well construction or improper well closure upon cessation of operations. Class I wells have redundant safety systems and several protective layers; an injection well would fail only when multiple systems fail in sequence without detection. In the unlikely event that a well would fail, the geology of the injection and confining zones serves as a final safety mechanism to prevent movement of wastewaters to USDWs. Injection well operators invest millions of dollars in the

---

[16] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS xiii (March 2001) (emphasis supplied).
[17] Rish, W.A., T. Ijaz, and T.F. Long, *A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells*, 1998.
[18] *Id.*

permitting, construction, and operation of wells and even in the absence of UIC regulations would carefully monitor the integrity of the injection operation to safeguard their investments.

Failures of Class I wells are exceedingly rare and have generally not resulted in significant harm to the environment or fresh water supplies. Most failures of mechanical integrity are internal failures, detected by continuous pressure monitoring systems or integrity tests. Any wells that fail are shut down until they are repaired to the satisfaction of the regulatory agency. EPA's study of more than 500 Class I non-hazardous and hazardous wells showed that loss of mechanical integrity contributed to only 4 cases of significant wastewater migration (none of which affected a drinking water source) over several decades of operation.[19] This safety record can be attributed to the rigorous requirements for monitoring and for ensuring that the well materials are compatible with the wastewater injected.

(e) Monitoring Requirements

Finally, Class I injection wells are continuously monitored and controlled, usually with sophisticated computers and digital equipment, which provide real-time data and information to the well operator. Thousands of data points about the pumping pressure for fluid disposal, the pressure in the space between the injection tubing and the well casing (that shows there are no leaks in the well), and data on the fluid being disposed of, such as its temperature and flow rate, are monitored and recorded each day.[20]

Alarms are connected to sound if anything out of the ordinary happens, and if unusual pressures are sensed by the monitoring equipment, the well pump automatically shuts off.[21] Disposal in the well does not resume until the cause of the unusual event is investigated, and the

---

[19] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 41 (March 2001).
[20] 40 CFR §146.67(a).
[21] 40 CFR §146.67(f).

people responsible for operating the well and the regulatory agencies both are sure that no environmental harm has been or will be done by well operations.[22]

The wells are also tested regularly, using special tools that are inserted into the well to record data about the well and surrounding rock formations. Regulators review all the data about the well operations, monitoring and testing frequently, and inspecting the well site to make sure everything is operating according to the requirements put in place to protect drinking water sources.

IV. Summary of Amendments

1. Navajo proposes the following change to 20.6.2.5004(A)(3) NMAC:

Delete the words "hazardous or" from the regulation. This would authorize the use of Class I hazardous waste injection wells.

2. Navajo proposes the addition of 20.6.2.5300

This new section sets forth the requirements for all Class I hazardous waste injection wells. It specifies that Class I hazardous waste injection wells are subject to the same permitting procedures as Class I non-hazardous waste injection wells. It limits Class I hazardous waste injection wells to use in the oil and gas industry. Additionally, it incorporates by reference the subsequent sections (20.6.2.5301 NMAC through 20.2.6.5305 NMAC) that set forth specific requirements for Class I hazardous waste injection wells.

3. Navajo proposes the addition of 20.6.2.5301

This new section incorporates by reference the federal regulations that set forth the general requirements for Class I hazardous waste injection wells, 40 C.F.R. Section 144.14. This federal regulation sets forth specific notification, recordation, reporting and training requirements for operators of Class I hazardous waste injection wells.

[22] 40 CFR 146.67(h).

4. Navajo proposes the addition of 20.6.2.5302

This new section incorporates by reference 40 C.F.R. Sections 144.60 through 144.70, the federal regulations that set forth the requirements for financial responsibility for owners and operators of Class I hazardous waste injection wells. These regulations include financial assurance for plugging and abandonment.

5. Navajo proposes the addition of 20.6.2.5303

This new section incorporates by reference 40 C.F.R. 146.61 through 146.73, the federal regulations that set forth the specific requirements and conditions for Class I hazardous waste injection wells. These regulations include construction requirements, testing requirements, operating requirements, monitoring requirements, reporting requirements, closure requirements, and post-closure requirements for Class I hazardous waste injection wells.

6. Navajo proposes the addition of 20.6.2.5304

This new section incorporates by reference 40 C.F.R. Part 148, the federal regulations that set forth the requirements and restrictions on Class I hazardous waste injection wells, including the specific substances that are prohibited from being injected in Class I hazardous waste injection wells.

7. Navajo proposes the addition of 20.6.2.5305

This new section clarifies the terms, references, and definitions used in the federal regulations. These are clarified in order to vest authority into the relevant state agency that has been delegated primacy by the federal program.

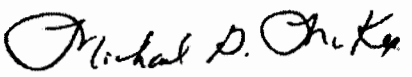
V. Request for Hearing

Navajo requests that the Commission schedule a rulemaking hearing to consider the proposed Water Conservation Act. Navajo requests that the rulemaking hearing to be scheduled

to begin on April 14, 2015. This hearing date will allow the Commission to conduct the hearing in conjunction with the Commission's April 2015 meeting.

It is anticipated that the rulemaking hearing will take approximately one day or less.

Respectfully Submitted,



Michael McKee
Vice President & Refinery Manager
Navajo Refining Company, L.L.C.

WATER QUALITY CONTROL COMMISSION HEARING PETITION
ATTACHMENT 1

NAVAJO REFINING COMPANY L.L.C.'S
PROPOSED WATER CONSERVATION RULE

The Proposed Water Conservation Rule will consist of amending an existing regulation, and adding new regulations to NMAC 20.6.2.5000. The proposed amendments are as follows:

The Proposed Water Conservation Rule will amend the following regulation:

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this Subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any ~~hazardous or~~ radioactive waste into a well is prohibited, except as provided in this Subsection.

(a) Class I ~~hazardous or~~ radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the Environmental Protection Agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.

[20.6.2.5004 NMAC - N, 12-1-01]

The Proposed Water Conservation Rule will add the following regulations to the New Mexico Administrative Code:

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in 20.6.2.5301 through 20.6.2.5305, all Class I hazardous waste wells are subject to the permit requirements for all Class I non-hazardous waste wells, including the notification and general operation requirements set forth in 20.6.2.5003 NMAC, the discharge permit requirements for Class I non-hazardous waste wells set forth in 20.6.2.5101 NMAC, the pre-construction requirements for Class I non-hazardous waste wells set forth in 20.6.2.5102 NMAC, and the designated aquifer requirements set forth in 20.6.2.5103 NMAC.

B. Class I hazardous waste wells are only authorized for use in the oil and gas industry.

C. Class I hazardous waste injection wells must meet the requirements of Sections 20.6.2.5300 through 20.6.2.5305.

D. The New Mexico Oil Conservation Division will administer and oversee all permitting requirements required in Sections 20.6.2.5300 through 20.6.2.5305.

20.6.2.5301 GENERAL PROGRAM REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Section 144.14 through July 1, 2015 are hereby incorporated by reference.

20.6.2.5302 FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 144.60 through 144.70, through July 1, 2015, are hereby incorporated by reference.

20.6.2.5303 CONDITIONS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 145.51, through 145.55, through July 1, 2015 that pertain to Class I hazardous waste injection wells are hereby incorporated by reference.

20.6.2.5303 CRITERIA AND STANDARDS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 146.61, through 146.73 through July 1, 2015 are hereby incorporated by reference.

20.6.2.5304 HAZARDOUS WASTE INJECTION RESTRICTIONS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Part 148 through July 1, 2015 are hereby incorporated by reference.

20.6.2.5305 MODIFICATIONS, EXCEPTIONS AND OMISSIONS:

A. Except as otherwise provided, the following modifications, exceptions and omissions are made to the incorporated federal regulations:

(1) "director" or "regional administrator means the Director of the Oil Conservation Division or his/her designee.

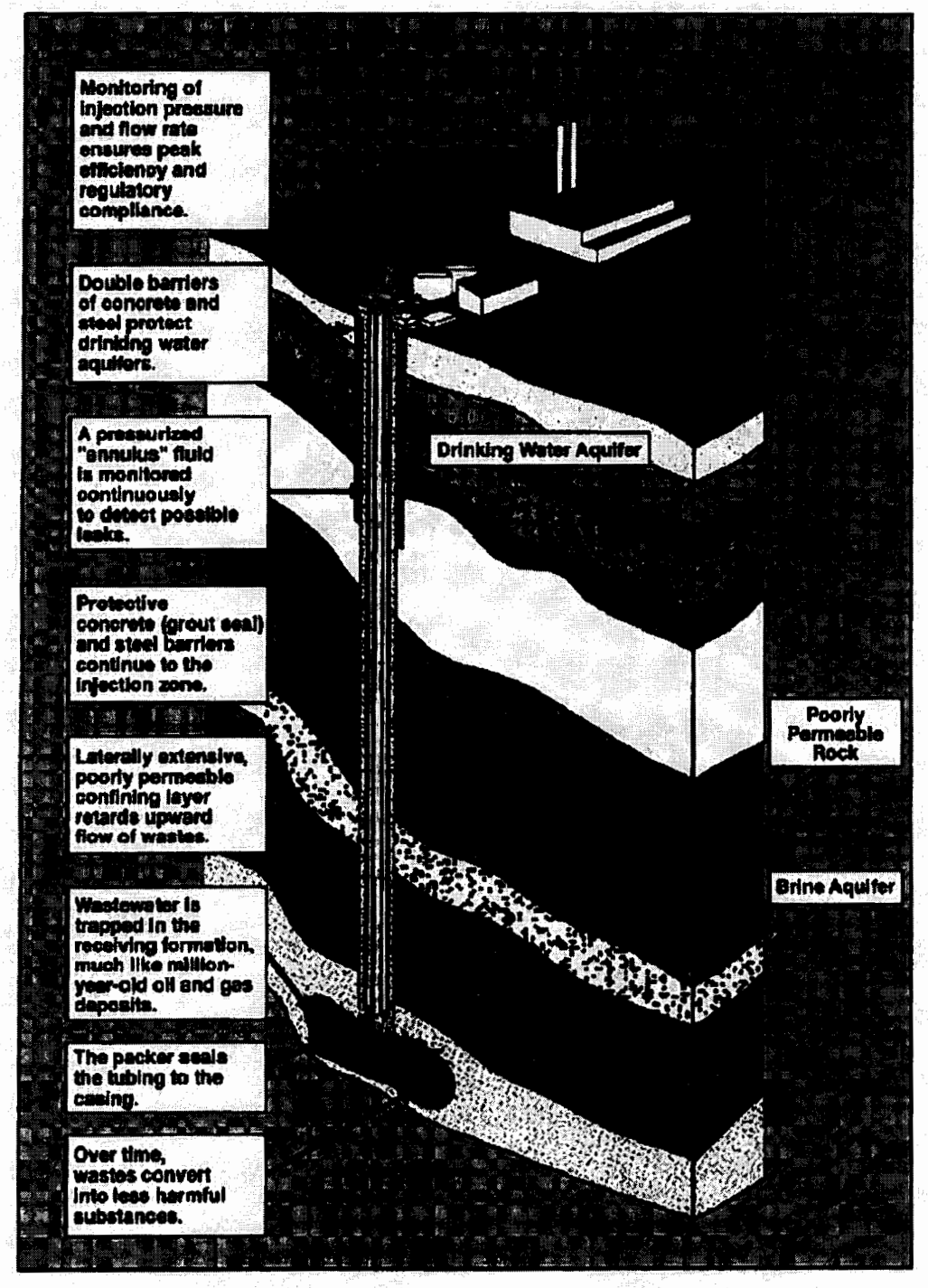
(2) "RCRA" (Resource Conservation and Recovery Act, as amended) means the New Mexico Hazardous Waste Act, NMSA 1978, Sections 74-4-1 through 74-4-14 (as amended).

(3) "SDWA" (Safe Drinking Water Act, as amended) 42 U.S.C. 300f *et seq.* means the Safe Drinking Water Act, the implementation of which is delegated to the New Mexico Environment Department.

B. Wherever there is a requirement in any of the federal regulations incorporated into this Section to report an emergency situation, the requirement shall be construed to mean that the party required to report shall report the incident to the Oil Conservation Division's emergency response number.

WATER QUALITY CONTROL COMMISSION HEARING PETITION
ATTACHMENT 2

CLASS I INJECTION WELL DIAGRAM



EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 3(March 2001).

APPENDIX – G2

NOTICE OF DOCKETING

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER TO AMEND 20.6.2.5000 NMAC **WQCC 14-15 (R)**

NOTICE OF DOCKETING

The above-captioned case is hereby docketed pursuant to the New Mexico Water Quality Control Act, NMSA 1978, §74-6-1, and the Water Quality Control Commission Rulemaking Guidelines. The Administrator received the Petition to amend 20.6.2.5000 NMAC and request for hearing on November 5, 2014.

Pam Castañeda

Pam Castañeda, Administrator
Water Quality Control Commission
P.O. Box 5469
Santa Fe, NM 87502
(505) 827-2425 (P)
(505) 827-0310 (F)

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Notice of Docketing was hand-delivered to Jeff Kendall, Office of General Counsel, N.M. Environment Department, James Hogan, Chief Surface Water Quality Bureau, N.M Environment Department, Harold Runnels Building, 1190 South St. Francis Drive, Santa Fe, NM 87502 and was sent via first-class mail to Joshua Granata, Office of the Attorney General, P.O. Drawer 1508, Santa Fe, NM 87504-1508 and to Michael McKee,501 East Main Street, Atresia, New Mexico 88210 this 6th day of November,2014.

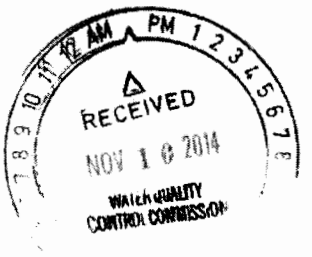
Pam Castañeda

Pam Castañeda, Administrator

APPENDIX – G3

AMENDED NOTICE OF DOCKETING

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION



IN THE MATTER TO AMEND 20.6.2.5000 NMAC **WQCC 14-15 (R)**

AMENDED NOTICE OF DOCKETING

The above-captioned case is hereby docketed pursuant to the New Mexico Water Quality Control Act, NMSA 1978, §74-6-1, and the Water Quality Control Commission Rulemaking Guidelines. The Administrator received the Petition to amend 20.6.2.5000 NMAC and request for hearing on November 5, 2014. This Amended Notice of Docketing is provided to serve notice on the Ground Water Quality Bureau of the New Mexico Environment Department.

Pam Castañeda

Pam Castañeda, Administrator
Water Quality Control Commission
P.O. Box 5469
Santa Fe, NM 87502
(505) 827-2425 (P)
(505) 827-0310 (F)

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Notice of Docketing was hand-delivered to Jeff Kendall, Office of General Counsel, N.M. Environment Department, Jerry Schoeppner, Chief Ground Water Bureau, N.M. Environment Department, Harold Runnels Building, 1190 South St. Francis Drive, Santa Fe, NM 87502 and was sent via first-class mail to Joshua Granata, Office of the Attorney General, P.O. Drawer 1508, Santa Fe, NM 87504-1508 and to Michael McKee, 501 East Main Street, Atresia, New Mexico 88210 this 10th day of November, 2014.

Pam Castañeda

Pam Castañeda, Administrator

APPENDIX – G4

FIRST AMENDED PETITION TO AMEND 20.6.2.5000 NMAC & HEARING REQUEST

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER TO AMEND 20.6.2.5000 NMAC

No. WQCC 14-15 (R)

FIRST AMENDED PETITION TO AMEND 20.6.2.5000 NMAC AND REQUEST FOR HEARING

Pursuant to the New Mexico Water Quality Act ("WQA"), NMSA 1978, §§76-6-1 to 76-6-17 (2009) and Section 301 of the *Guidelines for Water Quality Control Commission Hearings*, Navajo Refining Company, L.L.C. ("Navajo") petitions the Commission to adopt new rules authorizing Class I underground injection control wells for hazardous waste ("Class I hazardous waste injection wells") generated by oil refineries, 20.6.2.5300 NMAC to 20.6.2.5305 NMAC, hereinafter referred to as the Water Conservation Rule ("WCR"). The WCR would incorporate existing federal regulations, promulgated under the authority of the Safe Drinking Water Act ("SWDA") for Class I hazardous waste injection wells. Navajo's proposed Water Conservation Rule, attached as Attachment 1, would amend 20.6.2.5004 and add new text as 20.6.2.5300 through 20.6.2.5305.

This First Amended Petition ("Amended Petition") hereby amends the Petition to Amend 20.6.2.5000 NMAC that Navajo filed with the Water Quality Control Commission on November 5, 2014 ("Original Petition"). The Amended Petition limits the application of the WCR, specifically it limits it to oil refineries, the Original Petition otherwise remains unchanged.

I. Statement of Reasons for the Rule Change

Navajo operates an oil refinery in Artesia, New Mexico and generates a wastewater stream that, on a constituent basis, is very similar to produced water routinely disposed of in connection with the production of oil and gas. For the reasons stated in this petition, it desires to use an

injection well to dispose of process wastewaters that may be classified as hazardous due to concentration of constituents through water reuse. To do so, it seeks by this petition to authorize and to implement a hazardous waste injection well permitting regime that adopts federal requirements for such wells.

Authorizing Class I hazardous waste injection wells and adopting a permitting regime for those wells used by oil refineries will provide a number of benefits to both the State and to refineries and others in the oil and natural gas industry. These benefits include the following:

1. Water conservation: Allowing for permitting of Class I hazardous waste injection wells will promote water reuse and conservation by allowing for extraction and disposal of hazardous constituents in the waste streams generated by oil refineries.
2. Waste minimization: The WCR would promote waste minimization. Through water reuse, the final effluent stream that would be sent to a Class I hazardous waste injection well could be materially smaller than a full effluent stream that is typically disposed of now in underground injection control wells for non-hazardous wastes. Wastes generated by oil refineries would therefore be minimized.
3. Economic benefits: The WCR would provide a number of economic benefits to communities supporting refineries. Through reuse of water and reduction of fresh water usage in by oil refineries, more fresh water is available for use by the surrounding communities and businesses, including agriculture.
4. Preservation of disposal capacity: Because disposal capacity at existing oil refinery wells is finite, reducing effluent discharges to those wells preserves refining and disposal capacity. This capacity fosters oil and gas production by allowing for additional crude oil and recovered oil processing.

5. Improved oil and gas industry reliability: The WCR will also allow those in the oil and gas industry to improve reliability in their systems and production by allowing the refineries they depend upon to manage any unexpected generation of hazardous waste in the wastewater stream. Currently, refineries must treat wastewaters before disposal so that the waters are not hazardous. This treatment process can curtail crude oil throughput. Creating disposal capacity for hazardous wastewaters will allow refineries to maintain greater crude oil throughput, avoiding adverse financial consequences to their suppliers and the State.

II. Waste Management Practices of Oil Refineries in New Mexico

Oil refining companies must complete a number of processes in order to transform crude oil and recovered oil (i.e., oil recovered from oil-bearing residuals generated in the refining industry) into refined products. During these processes refineries use significant quantities of water and generates wastewater streams that can be recycled, especially if certain chemical constituents can be removed from these streams before reuse. Some of these chemical constituents could be considered hazardous waste if present in sufficient concentrations. Class I hazardous waste injection wells provide a demonstrated means for safely disposing of such wastes in deep geologic formations that are isolated from aquifers suitable for use as water supplies. The deep formations used for injection would be substantially below aquifers used for fresh drinking and agricultural/industrial water supplies and are separated from those supplies by numerous layers of impermeable rock formations. The WCR require that any injection of fluids by the well occur beneath the lowermost formation that contains 10,000 milligrams per liter or less of total dissolved solids ("TDS").

Since 2001, Class I hazardous waste injection wells have not been authorized in New Mexico, but elsewhere, under federal law, the United States Environmental Protection Agency ("EPA") allows disposal of hazardous waste by use of Class I hazardous waste injection wells. The federal regulations were promulgated in 1983 and have a demonstrated history of protection of human health and the environment. In 1984 New Mexico assumed primacy over the Safe Drinking Water Act program. After New Mexico assumed primacy the federal regulations changed to impose different requirement for Class I hazardous waste injection wells. New Mexico never amended its regulations to incorporate the changes made in the federal regulations. Therefore, the State's pre-2001 regulations did not impose different requirements for hazardous waste wells. In 2001, New Mexico eliminated the regulation allowing this practice because it had not been used and no such wells had been drilled.

The proposed amendment does not alter the responsibilities of the New Mexico Environment Department ("NMED") or the Oil Conservation Division ("OCD") for administering the programs currently delegated to the State by the EPA under the SDWA. Since the WCR only applies to oil refineries, the requirements of the WCR (adopting the federal EPA regulations) would be administered by OCD. OCD currently administers the Underground Injection Control well program for oil and gas related industries, including refineries, and is authorized to administer the permitting regime for Class I hazardous waste injection wells pursuant to the EPA's delegation to New Mexico under the SDWA.

As described fully below, Class I wells are a safe and economical way to dispose of wastewater. Federal regulations are comprehensive, imposing exacting requirements for the selection of the site, well construction standards, and the day-to-day operations to ensure that the USDW is safe and secure.

III. Background of Class I Injection Wells

Wastewater is an unavoidable byproduct of the manufacturing processes that create thousands of products we use every day. While industries continue to research and implement ways to reduce waste by recycling and improving the manufacturing processes, wastes are still generated and require disposal.

Class I underground injection wells represent a technically sound and safe disposal option for high-volume wastewaters. Class I underground injection wells present a low risk wastewater disposal option, as demonstrated by stringent design and operating requirements and a history of safe disposal that spans many decades.

(a) Regulatory Framework for UIC Wells

"Underground injection" refers to the placement of fluids, often wastewater, underground through a well bore. As the Environmental Protection Agency ("EPA") Regional Office for Region 6 found, "some waste fluids are generated in such volumes as to make treatment economically impractical. If properly constructed, and operated, injection wells are by far the best way to dispose of these waste fluids."[1] Not allowing underground injection wells "removes a safe, economically proven technology by which wastes can be effectively addressed."[2]

As part of the federal Safe Drinking Water Act ("SDWA") of 1974, a federal Underground Injection Control Program ("UIC Program") was established.[3] Since ground water is a major source of drinking water in the United States, the UIC Program requirements were designed to prevent ground water contamination. Most ground water used as drinking water today contains less than 3,000 milligrams per liter of total dissolved solids ("TDS"). The UIC

---

[1] ENVIRONMENTAL PROTECTION AGENCY, *Frequently Asked Questions About the Underground Injection Control Program*, http://www.epa.gov/Region6/water/swp/uic/faq3.htm#banned.
[2] *Id.*
[3] 42 U.S.C. §300h.

Program protects waters with significantly higher mineral concentrations to ensure that all water with the potential to be treated and used as drinking water in the future is protected.

New Mexico, like other states and the federal government, has a reasonable objective to protect any underground source of drinking water ("USDW"). A USDW is defined by EPA as an "aquifer or its portion which supplies any public water system or contains a sufficient quantity of ground water to supply a public water system, and either currently supplies a public water system, or contains less than 10,000 milligrams per liter of [TDS] and is not an exempted aquifer."[4] In essence, a USDW is a collection of clean water large enough that it could potentially serve the public.

(b) Class I Wells

There are six classes of underground injection wells. These classes are based on the types of fluids injected; each well classification has technical standards for well design and construction, injection depth, and operating and monitoring techniques in order to ensure that wells that serve the same function are designed in a way to protect USDWs.

Class I wells, further classified as hazardous and non-hazardous wells, inject industrial or municipal wastewater far beneath the lowermost source of drinking water. Class I wells are used mainly by the following industries: petroleum refining, metal production, chemical production, pharmaceutical production, commercial waste disposal, food production, and municipal wastewater treatment.[5]

Class I wells inject wastewater into formations without suitable water to extract as a source of drinking water and that are located thousands of feet below the land surface. The geological formation into which the wastewater is injected, known as the injection zone, must be

---

[4] 40 C.F.R. § 144.3

[5] ENVIRONMENTAL PROTECTION AGENCY, *Industrial & Municipal Waste Disposal Wells (Class I)*, http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.

demonstrated to be sufficiently porous and permeable so that the wastewater can enter the rock formation without an excessive buildup of pressure. The injection zone is typically beneath a large, relatively non-permeable layer of rock, known as the confining zone, which along with the natural force of gravity, will hold injected fluids in place and restrict them from moving upward toward a USDW. A diagram depicting the general schematic of a Class I well is attached to this rulemaking petition as Attachment 2.

There are currently approximately 550 Class I injection wells in the United States. Approximately 121 of these wells (22%) are Class I hazardous waste injection wells.[6] Most Class I wells are located in EPA Region 6 (comprised of Arkansas, Louisiana, New Mexico, Oklahoma, Texas, and 66 Native American Tribes).[7] At least 21 states currently have Class I injection wells.[8] Texas has the greatest number of Class I wells, including hazardous waste wells, followed by Louisiana.[9] Florida and Kansas also have a large number of Class I wells.[10]

(c) Federal Regulations Regarding Class I Wells

Federal regulations strictly control the creation and maintenance of Class I wells. EPA requires that Class I wells be located in geologically stable areas that are free of fractures or faults through which injected fluids could travel to drinking water sources.[11] Well operators must also show that there are no wells or other artificial pathways between the injection zone and USDWs through which fluids can travel. The site-specific geologic properties of the subsurface around the well offer another safeguard against the movement of injected wastewaters to a USDW.

---

[6] *Id.*
[7] ENVIRONMENTAL PROTECTION AGENCY, *EPA Region 6 (South Central),* http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.
[8] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 3(March 2001).
[9] *Id.*
[10] *Id.*
[11] 40 CFR §146.62.

All Class I wells are designed and constructed to prevent the movement of injected wastewaters into USDWs. Their stringent, multi-layer construction[12] has many redundant safety features. One of these features is the well's casing, which prevents the borehole from caving in. The casing is made out of a corrosion-resistant material such as steel or fiberglass-reinforced plastic. It consists of an outer surface casing, that extends the entire depth of the well, and an inner "long string" casing that extends from the surface to or through the injection zone. The innermost layer of the well, the injection tubing, brings injected wastewater from the surface to the injection zone.

All of the materials that injection wells are made are made of are corrosion-resistant and compatible with the wastewater and the formation rocks and fluids into which they come in contact. A constant pressure is maintained in the space and is continuously monitored to verify the well's mechanical integrity and proper operational conditions.[13] Trained operators are responsible for day-to-day injection well operation, maintenance, monitoring, and testing.[14] In addition to monitoring the well operation, operators of hazardous waste wells are required to develop and follow a waste analysis plan for monitoring the physical and chemical properties of the injected wastewater.[15]

(d) Safety Factors and Safety Record

Because these Class I wells inject waste far below the deepest possible USDW, there is very little chance of any negative effect on potentially usable ground water. In fact, in its March 2001 Study of Class I wells the, EPA said that "the probability of loss of waste confinement due to Class I injection has been demonstrated to be low" and "existing Class I regulatory controls

[12] Wells typically consist of three or more concentric layers of pipe: surface casing, long string casing, and injection tubing. Class I hazardous wells must have 3 layers of casing. [40 CFR 146.65(c)].
[13] 40 CFR §146.67.
[14] 40 CFR§ 146.13(b).
[15] 40 CFR §146.68 (a).

are strong, adequately protective, and provide an extremely low-risk option in managing the wastewaters of concern."[16] In other words, the deep geologic formations that receive the waste ("the injection zone"), the related impermeable confining layers above the injection zone, and the many layers of protection required in the construction, operation, and monitoring of wells, provide many safeguards against upward fluid movement, effectively protect USDWs.

Class I injection wells that meet EPA's design and operating requirements are well studied and pose minimal risks. In 1998, scientists quantitatively estimated the risk of waste containment loss as a result of various sets of events associated with Class I hazardous waste wells.[17] According to the study, because of the redundant safety systems in a typical Class I well, loss of containment would requires a series of improbable events to occur in sequence. As a result, the calculated probability of containment loss resulting from each of the scenarios examined ranges from one-in-one-million to one-in-ten-quadrillion.[18]

In the field, the probability of Class I well failures, both non-hazardous and hazardous, has also been demonstrated to be very low. Many early Class I failures were a result of historic practices that are no longer permissible under the federal UIC regulations, such as improper well construction or improper well closure upon cessation of operations. Class I wells have redundant safety systems and several protective layers; an injection well would fail only when multiple systems fail in sequence without detection. In the unlikely event that a well would fail, the geology of the injection and confining zones serves as a final safety mechanism to prevent movement of wastewaters to USDWs. Injection well operators invest millions of dollars in the

---

[16] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS xiii (March 2001) (emphasis supplied).
[17] Rish, W.A., T. Ijaz, and T.F. Long, *A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells*, 1998.
[18] *Id.*

permitting, construction, and operation of wells and even in the absence of UIC regulations would carefully monitor the integrity of the injection operation to safeguard their investments.

Failures of Class I wells are exceedingly rare and have generally not resulted in significant harm to the environment or fresh water supplies. Most failures of mechanical integrity are internal failures, detected by continuous pressure monitoring systems or integrity tests. Any wells that fail are shut down until they are repaired to the satisfaction of the regulatory agency. EPA's study of more than 500 Class I non-hazardous and hazardous wells showed that loss of mechanical integrity contributed to only 4 cases of significant wastewater migration (none of which affected a drinking water source) over several decades of operation.[19] This safety record can be attributed to the rigorous requirements for monitoring and for ensuring that the well materials are compatible with the wastewater injected.

(e) Monitoring Requirements

Finally, Class I injection wells are continuously monitored and controlled, usually with sophisticated computers and digital equipment, which provide real-time data and information to the well operator. Thousands of data points about the pumping pressure for fluid disposal, the pressure in the space between the injection tubing and the well casing (that shows there are no leaks in the well), and data on the fluid being disposed of, such as its temperature and flow rate, are monitored and recorded each day.[20]

Alarms are connected to sound if anything out of the ordinary happens, and if unusual pressures are sensed by the monitoring equipment, the well pump automatically shuts off.[21] Disposal in the well does not resume until the cause of the unusual event is investigated, and the

[19] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 41 (March 2001).
[20] 40 CFR §146.67(a).
[21] 40 CFR §146.67(f).

people responsible for operating the well and the regulatory agencies both are sure that no environmental harm has been or will be done by well operations.[22]

The wells are also tested regularly, using special tools that are inserted into the well to record data about the well and surrounding rock formations. Regulators review all the data about the well operations, monitoring and testing frequently, and inspecting the well site to make sure everything is operating according to the requirements put in place to protect drinking water sources.

IV. Summary of Amendments

1. Navajo proposes the following change to 20.6.2.5004(A)(3) NMAC:

Delete the words "hazardous or" from the regulation. This would authorize the use of Class I hazardous waste injection wells.

2. Navajo proposes the addition of 20.6.2.5300

This new section sets forth the requirements for all Class I hazardous waste injection wells. It specifies that Class I hazardous waste injection wells are subject to the same permitting procedures as Class I non-hazardous waste injection wells. It limits Class I hazardous waste injection wells to use by oil refineries. Additionally, it incorporates by reference the subsequent sections (20.6.2.5301 NMAC through 20.2.6.5305 NMAC) that set forth specific requirements for Class I hazardous waste injection wells.

3. Navajo proposes the addition of 20.6.2.5301

This new section incorporates by reference the federal regulations that set forth the general requirements for Class I hazardous waste injection wells, 40 C.F.R. Section 144.14. This federal regulation sets forth specific notification, recordation, reporting and training requirements for operators of Class I hazardous waste injection wells.

[22] 40 CFR 146.67(h).

4. Navajo proposes the addition of 20.6.2.5302

This new section incorporates by reference 40 C.F.R. Sections 144.60 through 144.70, the federal regulations that set forth the requirements for financial responsibility for owners and operators of Class I hazardous waste injection wells. These regulations include financial assurance for plugging and abandonment.

5. Navajo proposes the addition of 20.6.2.5303

This new section incorporates by reference 40 C.F.R. 146.61 through 146.73, the federal regulations that set forth the specific requirements and conditions for Class I hazardous waste injection wells. These regulations include construction requirements, testing requirements, operating requirements, monitoring requirements, reporting requirements, closure requirements, and post-closure requirements for Class I hazardous waste injection wells.

6. Navajo proposes the addition of 20.6.2.5304

This new section incorporates by reference 40 C.F.R. Part 148, the federal regulations that set forth the requirements and restrictions on Class I hazardous waste injection wells, including the specific substances that are prohibited from being injected in Class I hazardous waste injection wells.

7. Navajo proposes the addition of 20.6.2.5305

This new section clarifies the terms, references, and definitions used in the federal regulations. These are clarified in order to vest authority into the relevant state agency that has been delegated primacy by the federal program.

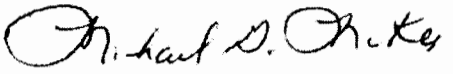
V. Request for Hearing

Navajo requests that the Commission schedule a rulemaking hearing to consider the proposed Water Conservation Act. Navajo requests that the rulemaking hearing to be scheduled

to begin on April 14, 2015. This hearing date will allow the Commission to conduct the hearing in conjunction with the Commission's April 2015 meeting.

It is anticipated that the rulemaking hearing will take approximately one day or less.

Respectfully Submitted,



Michael McKee
Vice President & Refinery Manager
Navajo Refining Company, L.L.C.
Post Office Box 159
Artesia, New Mexico 88211

WATER QUALITY CONTROL COMMISSION HEARING PETITION
ATTACHMENT 1

NAVAJO REFINING COMPANY L.L.C.'S
PROPOSED WATER CONSERVATION RULE

The Proposed Water Conservation Rule will consist of amending an existing regulation, and adding new regulations to NMAC 20.6.2.5000. The proposed amendments are as follows:

The Proposed Water Conservation Rule will amend the following regulation:

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this Subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity ceaspools are prohibited. Any person operating a new large capacity ceaspool (for which construction began after April 5, 2000) must close the ceaspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the ceaspool by December 31, 2002.

(3) The injection of any ~~hazardous or radioactive~~ waste into a well is prohibited, except as provided in this Subsection.

(a) Class I ~~hazardous or radioactive~~ waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the Environmental Protection Agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.

[20.6.2.5004 NMAC - N, 12-1-01]

The Proposed Water Conservation Rule will add the following regulations to the New Mexico Administrative Code:

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in 20.6.2.5301 through 20.6.2.5305, all Class I hazardous waste wells are subject to the permit requirements for all Class I non-hazardous waste wells, including the notification and general operation requirements set forth in 20.6.2.5003 NMAC, the discharge permit requirements for Class I non-hazardous waste wells set forth in 20.6.2.5101 NMAC, the pre-construction requirements for Class I non-hazardous waste wells set forth in 20.6.2.5102 NMAC, and the designated aquifer requirements set forth in 20.6.2.5103 NMAC.

B. Class I hazardous waste wells are only authorized for use by oil refineries.

C. Class I hazardous waste injection wells must meet the requirements of Sections 20.6.2.5300 through 20.6.2.5305.

D. The New Mexico Oil Conservation Division will administer and oversee all permitting requirements required in Sections 20.6.2.5300 through 20.6.2.5305.

20.6.2.5301 GENERAL PROGRAM REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Section 144.14 through July 1, 2015 are hereby incorporated by reference.

20.6.2.5302 FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 144.60 through 144.70, through July 1, 2015, are hereby incorporated by reference.

20.6.2.5303 CONDITIONS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 145.51, through 145.55, through July 1, 2015 that pertain to Class I hazardous waste injection wells are hereby incorporated by reference.

20.6.2.5303 CRITERIA AND STANDARDS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 146.61, through 146.73 through July 1, 2015 are hereby incorporated by reference.

20.6.2.5304 HAZARDOUS WASTE INJECTION RESTRICTIONS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Part 148 through July 1, 2015 are hereby incorporated by reference.

20.6.2.5305 MODIFICATIONS, EXCEPTIONS AND OMISSIONS:

A. Except as otherwise provided, the following modifications, exceptions and omissions are made to the incorporated federal regulations:

(1) "director" or "regional administrator means the Director of the Oil Conservation Division or his/her designee.

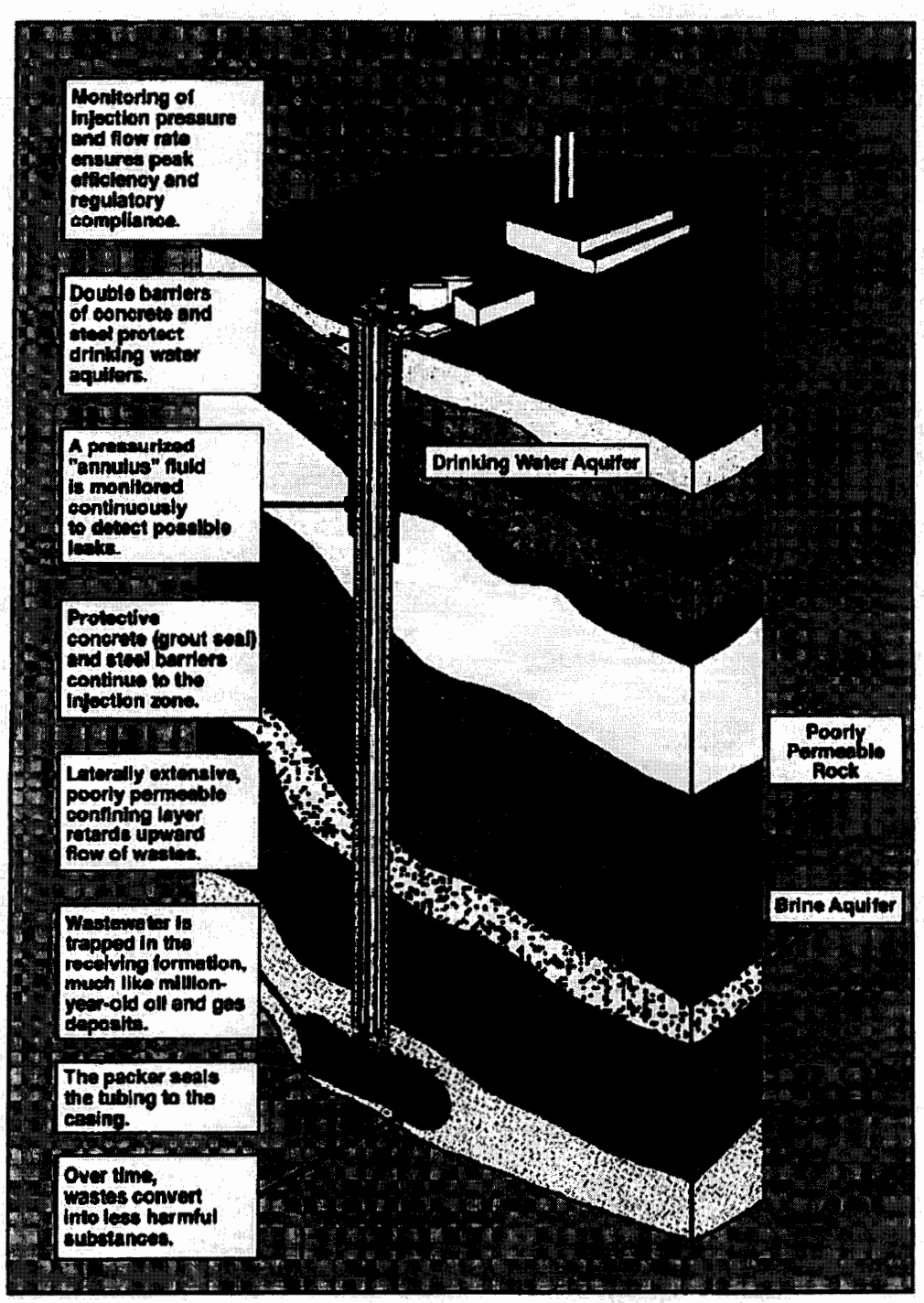
(2) "RCRA" (Resource Conservation and Recovery Act, as amended) means the New Mexico Hazardous Waste Act, NMSA 1978, Sections 74-4-1 through 74-4-14 (as amended).

(3) "SDWA" (Safe Drinking Water Act, as amended) 42 U.S.C. 300f *et seq.* means the Safe Drinking Water Act, the implementation of which is delegated to the New Mexico Environment Department.

B. Wherever there is a requirement in any of the federal regulations incorporated into this Section to report an emergency situation, the requirement shall be construed to mean that the party required to report shall report the incident to the Oil Conservation Division's emergency response number.

WATER QUALITY CONTROL COMMISSION HEARING PETITION
ATTACHMENT 2

CLASS I INJECTION WELL DIAGRAM

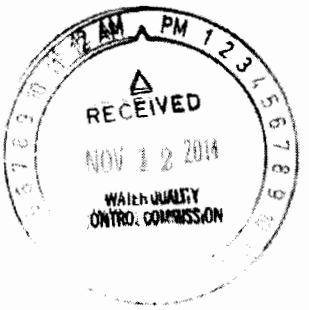


EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 3(March 2001).

APPENDIX – G5

NOTICE OF FIRST AMENDED PETITION

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION



IN THE MATTER OF:
PROPOSED AMENDMENT TO
20.6.2.5004 NMAC AND ADOPTION OF
20.6.2.5300 THROUGH 20.6.2.5305 NMAC

WQCC 14-15 (R)

NOTICE OF FIRST AMENDED PETITION

The Administrator received the First Amended Petition to amend 20.6.2.5004 NMAC and adopt 20.6.2.5300 through 20.6.2.5305 NMAC on November 12, 2014. The Administrator attaches hereto a copy of the First Amended Petition and a copy of the original Petition submitted to the Administrator on November 5, 2014.

Pam Castañeda

Pam Castañeda, Administrator
Water Quality Control Commission
P.O. Box 5469
Santa Fe, NM 87502
(505) 827-2425 (P)
(505) 827-0310 (F)

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Notice of Docketing was hand-delivered to Jeff Kendall, Office of General Counsel, N.M. Environment Department, Jerry Schoeppner, Chief Ground Water Bureau, N.M. Environment Department, Harold Runnels Building, 1190 South St. Francis Drive, Santa Fe, NM 87502 and was sent via first-class mail to Joshua Granata, Office of the Attorney General, P.O. Drawer 1508, Santa Fe, NM 87504-1508 and to Michael McKee, 501 East Main Street, Atresia, New Mexico 88210 this 12th day of November, 2014.

Pam Castañeda

Pam Castañeda, Administrator

APPENDIX – G6

MEETING MINUTES WQCC 11/18/14

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION
1190 St. Francis Drive, Room N2150
Post Office Box 26110
Santa Fe, New Mexico 87502
Telephone (505) 827-2425 Fax (505) 827-0310

Constituent Agencies
Environment Department
Office of State Engineer
Game and Fish Department
Oil Conservation Division
Department of Agriculture
Department of Health
State Parks Division
Soil and Water Conservation Commission
Bureau of Geology and Mineral Resources
Municipal/County Representative
Members-at Large

Meeting Minutes
New Mexico Water Quality Control Commission
Regular Meeting
11/18/14
New Mexico State Capitol Room 321
490 Old Santa Fe Trail
Santa Fe, New Mexico 87501

MEMBERS PRESENT:

Ryan Flynn	Chair, Environment Department
Larry Dominguez	Department of Agriculture
Tony Delfin	State Forestry Division
Dan Brooks	Department of Game & Fish
Scott Dawson	Oil Conservation Division
John Waters	Member-at-Large
Edward Vigil	Member-at-Large
Jane DeRose-Bamman	Water Utility Authority
Ghassan Musharrafieh	Office of the State Engineer

MEMBER ABSENT:

Clark Taylor	Soil and Water Conservation Commission
Hoyt Pattison	Member-at Large

OTHERS PRESENT:
Joshua Granata, New Mexico Attorney General's Office, Counsel for the Commission
Wade Jackson, General Counsel, NM Economic Development Department, Counsel for the Commission
Pam Castañeda, Administrator
Please see attached sign-in-sheet

The meeting was called to order by Mr. Flynn at 9:05 a.m.

Item 1. **Roll Call.**

Roll was taken; it was noted that a quorum was present.

Item 2. **Approval of Agenda.**

Action: Mr. Waters moved adoption of the agenda. Mr. Vigil seconded the motion. The motion passed unanimously.

Item 3. **Approval of minutes of September 9, 2014, meeting.**

Action: Three corrections were pointed out by members of the Commission. Mr. Water's requested amendment of item #6 to add suggestion by Mr. Waters to have New Mexico Environment Department (NMED) staff communicate with local government officials in advance of any official action taken. Mr. Dominguez requested amendment of item #7, line 125, to show the Coalition argued for the public hearing to be held in in Santa Fe rather than Las Cruces. Ms. DeRose-Bamman requested amendment of item #7, line 124, to reflect the correct acronym for the Dairy Industry Group for a Clean Environment as "DIGCE." The Chair entertained a motion to approve the minutes of September 9, 2014, as amended. Mr. Delfin moved approval the amended minutes. Mr. Dominguez seconded. The motion passed unanimously.

Item 4. **Election of a Commission Chair pursuant to NMSA 1978, § 74-6-3(C).**

Action: Mr. Delfin moved nomination of Mr. Flynn as the chair for the Water Quality Control Commission. Mr. Waters seconded. The motion passed unanimously.

Item 5. **Discussion of ongoing legal representation of the Commisson.**

Action: The Chair gave a brief description of the legal advice prescribed by NMSA 1978, § 74-6-3.1. The Commission discussed selecting a new legal representation for the Commission. The Chair recommended Wade Jackson, General Counsel of the Economic Development Department who previously represented the Commission in the Copper Rule, act as Commission counsel pursuant to § 74-6-3.1. Mr. Vigil noted that the Commission may revisit the Commission's legal representation in upcoming cases with respect to the establishment of the newly elected attorney general's administration.

Mr. Dominguez moved the Commission obtain legal counsel from another state agency that is not a member of the Commission and leave the discretion to select such legal counsel to the Chair until the Commission can revisit this issue at a later date. Mr. Vigil seconded. The motion passed unanimously. Mr. Granata was excused from representing the Commission.

BREAK

The meeting resumed at 9:37 a.m.

Mr. Jackson served as counsel to the Commission for the remainder of the meeting.

The Chair noted after the break that the WQCC statute allows other officers to be elected. Election of a Vice Chair was not on this agenda, but will be on the next agenda for December 9, 2014.

Item 6. **WQCC 14-15 (R) Proposed Amendment to 20.6.2.50004 NMAC and Adoption of 20.6.2.5300 through 20.6.2.5305 NMAC.**

Action: Ms. Denise McWatters, Senior Vice President and General Counsel for the Holly Frontier Company, gave a brief presentation and overview on Proposed Amendment to 20.6.2.50004 NMAC and Adoption of 20.6.2.5300 through 20.6.2.5305 NMAC. Ms. McWatters requested a hearing be set in this matter for April 14, 2015. Mr. Delfin moved to set the hearing for May 12, 2015. Mr. Delfin amended his motion to authorize the Chair with authority to assign a Hearing Officer. Mr. Waters seconded. The motion passed unanimously.

Item 7. **WQCC 14-05 (R) Proposed Standards for Interstate and Intrastate Waters 20.6.4 NMAC. Appointment of Hearing Officer.**

Action: Mr. Kevin Powers, Assistant General Counsel with the NMED, and Ms. Kristine Pintado with the Surface Water Quality Bureau requested appointment of a Hearing Officer for the April 14, 2015 meeting. The Chair moved to delegate authority to appoint a Hearing Officer in the matter to the Chair. Mr. Dominguez seconded. The motion passed unanimously.

Item 8. **Closed Executive Session to discuss pending legal matters against the Commission pursuant to NMSA1978, §10-15-1(H)(7) of the Open Meetings Act.**

Action: The Chair moved that the New Mexico Water Quality Control Commission enter into closed executive session pursuant to NMSA 1978,§10-15-1(H)(7) to discuss matters related to pending litigation as set forth in the meeting agenda. Mr. Brooks seconded. Roll call was taken all were unopposed.

The Commission came back into open session at 10:45 a.m. The record reflected that matters discussed in executive session were limited only to those specified in

motion for closure specifically pending legal matters against the commission pursuant to NMSA 1978,§10-15-1(H)(7).

Item 9. **Discussion of impact of pending legal matters against the Commission on the currently scheduled Dairy Rule Hearing (WQCC 12-09 (R) and WQCC 13-08 (R)) and potential implications on notice requirements.**

Action: The hearing in WQCC 12-09 (R) and WQCC 13-08 (R) was recorded and transcribed by Bean & Associates. The transcript is available in the office of the Commission Administrator.

There will be a hearing at the First Judicial District Court for November 25, 2014, regarding whether the Commission can proceed to hold the Dairy Rule hearing in Roswell. The Commission intends to move forward with the hearing in Roswell beginning on December 9, 2014, pending the outcome of the judicial hearing. If the decision by the First Judicial District Court were to prohibit the hearing from being held in Roswell, the Commission will address the decision at their regularly scheduled meeting in December.

Item 10. **(WQCC 12-09 (R) and WQCC 13-08 (R) Proposed Amendment to 20.6.6 NMAC (Dairy Rule). Prehearing motions.**

Mr. Delfin moved the Commission to delegate oral arguments and evidence to the Hearing Officer, Chris Saucedo. The Chair amended Mr. Delfin's motion and added that decisions and written orders on the pre-hearing motions also be delegated to the Hearing Officer. Mr. Brooks seconded the motion as amended. The motion passed unanimously.

Item 11. **Next Meeting**

Action: **December 9, 2014**

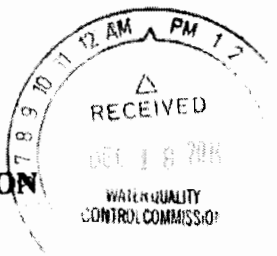
Item 12. **Adjournment**

The Chair adjourned the meeting at 11:15 a.m.

Commission Chair

APPENDIX – G7

UNOPPOSED MOTION TO VACATE & RESET HEARING FOR 5/12/2015



STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER TO AMEND 20.6.2.5000 NMAC

No. WQCC 14-15(R)

UNOPPOSED MOTION TO VACATE AND RESET HEARING CURRENTLY SCHEDULED FOR MAY 12, 2015

Petitioner, Navajo Refining Company, L.L.C. ("Navajo") respectfully requests that the Commission reschedule the May 12, 2015 hearing, currently scheduled for the proposed amendment to 20.6.2.5000 NMAC, and asks that the hearing be reset to July 14, 2015 or to the earliest possible date thereafter.

Navajo has consulted with counsel for the New Mexico Environment Department and the New Mexico Energy, Minerals and Natural Resources Department; both of these agencies support this motion.

WHEREFORE, Navajo respectfully request the Commission to vacate the hearing currently scheduled for May 15, 2015 until July 14, 2015 or to the earliest possible date thereafter.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A.

By _____
Larry P. Ausherman
Christina C. Sheehan
P.O. Box 2168
Albuquerque, NM 87103
Telephone: (505) 848-1800
Attorneys for Navajo Refining Company, Inc.

WE HEREBY CERTIFY that a true
and correct copy of the foregoing was
filed by hand delivery this 18th day of
December, 2014, and was served the following
Counsel by electronic and first class mail:

Bill Brancard
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Bill.brancard@state.nm.us

Andrew Knight
New Mexico Environment Department
1190 South St. Francis Drive
Santa Fe, New Mexico 87505
Andrew.knight@state.nm.us

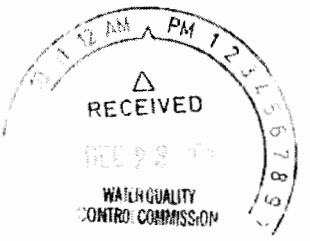
By: _____
Christina C. Sheehan

C:\Users\deedeea\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\RM2CLAUV\W2327944.DOCX

APPENDIX – G8

NOTICE OF HEARING OFFICER DESIGNATION

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION



IN THE MATTER OF: **WQCC 14-15 (R)**
PROPOSED AMENDMENT TO
20.6.2.5004 NMAC AND ADOPTION OF
20.6.2.5300 THROUGH 20.6.2.5305 NMAC

NOTICE OF HEARING OFFICER DESIGNATION

The Chair of the Water Quality Control Commission ("Commission"), duly authorized by the Commission at its meeting on November 18, 2014, hereby designates Mr. Morris Chavez to serve as Hearing Officer in this matter. The Chair delegates to Mr. Chavez all powers and duties granted under Section 104 of the WQCC Guidelines and all other applicable laws.

Ryan Flynn, Commission Chair

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Notice of Docketing and Hearing Officer Designation has been served via e-mail, regular U.S. mail and hand-delivered to the following parties on December 23, 2014.

Larry P. Ausherman
Christina C. Sheehan
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
P.O. Box 2168
Albuquerque, New Mexico 87103
Email: ccs@modrall.com
Attorneys for Navajo Refining Company, Inc.

Andrew Knight
Assistant General Counsel
Office of General Counsel
NM Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502-6110
Email: Andrew.knight@state.nm.us

Bill Brancard
NM Energy, Minerals and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us

Wade Jackson, General Counsel
NM Economic Development Department
Joseph Montoya Building
1100 S. St. Francis Drive
Santa Fe, New Mexico 87505
Wade.Jackson@state.nm.us
Counsel for the Commission

for Sally Worthington
Pam Castañeda, Administrator
Water Quality Control Commission
P.O. Box 5469
Santa Fe, NM 87502
(505) 827-2425 (P)
(505) 827-0310 (F)

APPENDIX – G9

ORDER GRANTING MOTION TO VACATE & RESET HEARING

STATE OF NEW MEXICO

BEFORE THE WATER QUALITY CONTROL COMMISSION

In the Matter of:	)	
	)	No. WQCC 14-15 (R)
PROPOSED AMENDMENT TO 20.6.2.5000 NMAC	)	
	)	

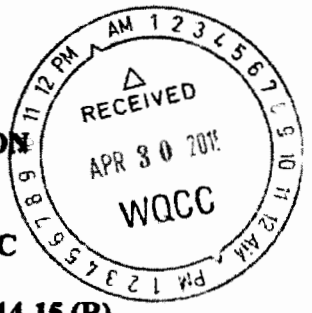
ORDER GRANTING MOTION TO VACATE AND RESET HEARING

Petitioner Navajo Refining Company, LLC., on December 18, 2014, filed an unopposed motion to reschedule the May 12, 2015 hearing currently scheduled for the proposed amendment to 20.6.2.5000 NMAC, and asks that the hearing be reset to July 14, 2015 or to the earliest possible date thereafter. For the reasons stated in the motion, it is granted. It is hereby ORDERED that the hearing currently scheduled for May 12, 2015 is vacated and will be reset for July 14, 2015.

Morris J. Chavez
Hearing Officer

APPENDIX – G10

SECOND AMENDED PETITION TO AMEND 20.6.2.3000 NMAC & 20.6.2.5000 NMAC



STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC

No. WQCC 14-15 (R)

SECOND AMENDED PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC

Pursuant to the New Mexico Water Quality Act ("WQA"), NMSA 1978, §§74-6-1 to 74-6-17 (2009) and Section 301 of the *Guidelines for Water Quality Control Commission Hearings*, Navajo Refining Company, L.L.C. ("Navajo") petitions the Water Quality Control Commission (the "Commission") to adopt new rules authorizing Class I underground injection control ("UIC") wells for hazardous waste ("Class I hazardous waste injection wells") generated by oil refineries hereinafter referred to as the Water Conservation Rule ("WCR"). The WCR is based on and incorporates by reference portions of existing federal regulations, promulgated under the authority of the federal Safe Drinking Water Act ("SWDA") for Class I hazardous waste injection wells. Specifically, the proposed WCR, attached to this Second Amended Petition as Attachment 1, would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC. As described below, the proposed WCR ensures that New Mexico's SWDA regulations for Class I hazardous waste injection wells would, if adopted, be, at a minimum, as stringent as federal regulations.

This Second Amended Petition hereby amends the Petition to Amend 20.6.2.5000 NMAC that Navajo filed with the Commission on November 12, 2014 ("First Amended Petition"). The Second Amended Petition proposes to adopt substantial portions of the United

States Environmental Protection Agency's ("EPA's") regulations for Class I hazardous waste injection wells directly in the New Mexico Administrative Code rather than incorporating them by reference, as was proposed in the First Amended Petition. As noted above, some portions would still be incorporated by reference. The substantive requirements of the Second Amended Petition are generally similar to those in the First Amended Petition, and the proposed Second Amended Petition would result in regulations no less stringent than EPA regulations.

I. Statement of Reasons for the Rule Change

Navajo operates an oil refinery in Artesia, New Mexico and generates a wastewater stream that, on a constituent basis, is very similar to produced water routinely disposed of in connection with the production of oil and gas. For the reasons stated in this Second Amended Petition, Navajo desires to use an injection well to dispose of process wastewaters that may be classified as hazardous due to the concentration of chemical constituents caused by water conservation and reuse. To do so, Navajo requests the Commission to adopt a Class I hazardous waste injection well permitting program under the WQA and New Mexico's delegated authority to administer the federal Safe Drinking Water Act's UIC program.

Authorizing Class I hazardous waste injection wells and adopting a permitting program for those wells used by oil refineries will provide a number of benefits to the State, to refineries, and to others in the oil and natural gas industry. These benefits include the following:

1. Water conservation: Authorizing the State to issue Class I hazardous waste injection well permits will promote water reuse and conservation by allowing refineries to reuse water by extracting and disposing of any hazardous constituents in the waste streams generated by oil refineries.

2. Waste minimization: The WCR would promote waste minimization. Through water reuse, the final effluent stream that would be sent to a Class I hazardous waste injection well could be materially smaller than a full effluent stream that is typically disposed of in Class I nonhazardous waste injection wells. Volumes of waste generated by oil refineries would therefore be minimized.

3. Economic benefits: The WCR would provide a number of economic benefits to communities supporting refineries. Through reuse of water and reduction of fresh water usage by oil refineries, more fresh water would be available for use by the surrounding communities and businesses, including agriculture.

4. Preservation of disposal capacity: Because disposal capacity at existing Class I nonhazardous waste injection wells is finite, reducing effluent discharges to those wells preserves capacity. Preserving capacity will foster continued oil and gas production by ensuring that there will be sufficient resources available to process additional crude oil and recovered oil in the future.

5. Improved oil and gas industry reliability: The WCR will also allow those in the oil and gas industry to improve reliability in their systems and production by allowing the refineries they depend upon to manage any unexpected increases in concentrations of chemical constituents in the wastewater stream that may exceed hazardous waste thresholds. Currently, refineries must treat wastewater streams before disposal so that the wastewater streams do not exceed hazardous waste thresholds. This treatment process can curtail crude oil throughput. Creating disposal capacity for hazardous wastewater streams will allow refineries to maintain greater crude oil throughput, avoiding adverse financial consequences to their suppliers and the State.

II. Waste Management Practices of Oil Refineries in New Mexico

Oil refining companies must complete a number of processes in order to transform crude oil and recovered oil (i.e., oil recovered from oil-bearing residuals generated in the refining industry) into refined products. During these processes refineries use significant quantities of water and generate wastewater streams that can be recycled, especially if certain chemical constituents can be removed from these wastewater streams before reuse. Some of these chemical constituents could be considered hazardous waste if present in sufficient concentrations. Class I hazardous waste injection wells provide a demonstrated means for safely disposing of such wastes in deep geologic formations that are isolated from aquifers that are suitable for use as water supplies. The deep formations used for injection would be substantially below aquifers used for fresh drinking and agricultural/industrial water supplies and are separated from those supplies by numerous layers of impermeable rock formations. The WCR requires that any injection of fluids through a Class I hazardous waste injection well must occur beneath the lowermost formation that contains 10,000 milligrams per liter or less of total dissolved solids ("TDS").

The federal Class I hazardous waste injection well regulations were promulgated in 1980 and have a demonstrated history of protecting human health and the environment. In 1983 New Mexico was granted primacy over the UIC program for all Class I wells.[1] After New Mexico assumed primacy, EPA amended its regulations applicable to Class I hazardous waste injection wells.[2] New Mexico at the time did not amend its regulations to incorporate the changes made in the federal regulations. Instead, in 2001, New Mexico eliminated the regulations authorizing

[1] *See* 40 CFR § 147.1601.

[2] 53 Fed. Reg. 28,118 (July 28, 1988).

Class I hazardous waste injection well permits because they had not been used and no such wells had been permitted or constructed under the regulations.

The WCR does not alter the responsibilities of the NMED or OCD with respect to administering the UIC program currently delegated to the State by the EPA under the SDWA. Since the WCR applies to oil refineries only, the requirements of the WCR would be administered by OCD. OCD currently administers the UIC program for oil and gas related industries, including refineries, pursuant to the EPA's delegation to New Mexico under the SDWA, the 1982 Joint Powers Agreement Between the Environmental Improvement Division, the Oil Conservation Division, and the Mining and Minerals Division, and NMSA 1978, § 70-2-12.

As described below, Class I wells are a safe and economical way to dispose of hazardous wastewater. The federal regulations on which the proposed WCR is based are comprehensive, imposing exacting requirements for the selection of the site, well construction standards, and the day-to-day operations to ensure that underground sources of drinking water ("USDWs) are safe and secure.

III. Background of Class I Injection Wells

Wastewater is an unavoidable byproduct of the manufacturing processes that create thousands of products we use every day. While industries continue to research and implement ways to reduce waste by recycling and improving manufacturing processes, wastewater is still generated and requires disposal. Class I underground injection wells represent a technically sound and safe disposal option for such wastewater, as demonstrated by stringent design and operating requirements and a history of safe disposal that spans many decades.

(a) Regulatory Framework for UIC Wells

"Underground injection" refers to the placement of fluids, often wastewater, underground through a well bore. As the EPA Regional Office for Region 6 found, "some waste fluids are generated in such volumes as to make treatment economically impractical. If properly constructed, and operated, injection wells are by far the best way to dispose of these waste fluids."[3] In contrast, the lack of this option "removes a safe, economically proven technology by which wastes can be effectively addressed."[4]

As part of the SDWA, the federal UIC program was established.[5] Since ground water is a major source of drinking water in the United States, the UIC program requirements were designed to prevent ground water contamination. Most ground water used as drinking water today contains less than 3,000 milligrams per liter TDS. The UIC program adds a significant margin of safety and protects waters with significantly higher concentrations of TDS of up to 10,000 milligrams per liter to ensure that all water with the potential to be treated and used as drinking water in the future is protected.

New Mexico, like other states and the federal government, has a reasonable objective to protect any USDW. A USDW is defined by EPA as an "aquifer or its portion which supplies any public water system or contains a sufficient quantity of ground water to supply a public water system, and either currently supplies a public water system, or contains less than 10,000 milligrams per liter of [TDS] and is not an exempted aquifer."[6] In essence, a USDW is a collection of clean water large enough that it could potentially serve the public. New Mexico's

---

[3] ENVIRONMENTAL PROTECTION AGENCY, *Frequently Asked Questions About the Underground Injection Control Program*, http://www.epa.gov/Region6/water/swp/uic/faq3.htm#banned.

[4] *Id.*

[5] 42 U.S.C. §300h.

[6] 40 CFR § 144.3

existing UIC regulations go further and "protect all ground water of the State of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow for uses designated in the New Mexico Water Quality Standards."[7] The existing standard would also apply to the proposed WCR.

(b) Class I Wells

There are six classes of underground injection wells. These classes are based on the types of fluids injected and, in some cases, the industries that they support. Each well classification has technical standards for well design and construction, injection depth, and operating and monitoring techniques in order to ensure that all wells are designed and operated in a way that protects USDWs.

Class I wells, which are further classified as hazardous and nonhazardous wells, inject industrial or municipal wastewater far beneath the lowermost source of drinking water. Class I wells are used mainly by the following industries: petroleum refining, metal production, chemical production, pharmaceutical production, commercial waste disposal, food production, and municipal wastewater treatment.[8]

Class I wells inject wastewater into geologic formations that lack suitable water quality to qualify as a USDW (or groundwater of the State of New Mexico) and are typically located thousands of feet below the land surface. The geological formation into which the wastewater is injected, known as the injection zone, must be demonstrated to be sufficiently porous and permeable so that the wastewater can enter the rock formation without an excessive buildup of

[7] Section 20.6.2.5001 NMAC.

[8] ENVIRONMENTAL PROTECTION AGENCY, *Industrial & Municipal Waste Disposal Wells (Class I)*, http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.

pressure. The injection zone is typically beneath a large, relatively impermeable layer of rock, known as the confining zone, which along with the natural force of gravity, will hold injected fluids in place and restrict them from moving upward toward a USDW (or groundwater of the State of New Mexico). A diagram depicting the general schematic of a Class I well is attached to this Second Amended Petition as Attachment 2.

According to EPA's most recent data, there are currently 678 Class I injection wells in the United States.[9] 117 of these wells (17%) are Class I hazardous waste injection wells.[10] A significant number of Class I hazardous waste injection wells are located in EPA Region 6 (comprised of Arkansas, Louisiana, New Mexico, Oklahoma, Texas, and 66 Native American Tribes).[11] 21 states currently have Class I hazardous waste injection wells.[12] Texas has the greatest number of Class I hazardous waste injection wells followed by Louisiana.[13]

(c) Federal Regulations For Class I Wells

Federal regulations strictly control the construction and operation of Class I wells. Class I wells must be located in geologically stable areas that are free of fractures or faults through which injected fluids could travel to drinking water sources.[14] Well operators must also show that there are no wells or other artificial pathways between the injection zone and USDWs through which fluids can travel. Further, limitations on the locations where Class I wells can be

---

[9] ENVIRONMENTAL PROTECTION AGENCY, *UIC Inventory by State - 2011*, http://water.epa.gov/type/groundwater/uic/upload/uicinventorybystate2011.pdf.

[10] *Id.*

[11] *Id.*

[12] *Id.*

[13] *Id.*

[14] 40 CFR §146.62.

sited ensures that the site-specific geologic properties of the subsurface around the well provide additional safeguards against the movement of injected wastewaters to a USDW.

All Class I wells are designed and constructed to prevent the movement of injected wastewaters into USDWs. Their stringent, multi-layer construction[15] has many redundant safety features. One of these features is the well's casing, which prevents the borehole from caving in. The casing is made out of a corrosion-resistant material such as steel or fiberglass-reinforced plastic. It consists of an outer surface casing, that extends the entire depth of the well, and an inner "long string" casing that extends from the surface to or through the injection zone. The innermost layer of the well, the injection tubing, brings injected wastewater from the surface to the injection zone.

All of the materials used in Class I injection wells must be corrosion-resistant and compatible with the wastewater, geologic formations, and fluids into which they will come in contact. A constant pressure is maintained at the well head and that pressure is continuously monitored to verify the well's mechanical integrity and proper operational conditions.[16] Trained operators are responsible for day-to-day injection well operation, maintenance, monitoring, and testing.[17] In addition to monitoring the well operation, operators of hazardous waste wells are required to develop and follow a waste analysis plan for monitoring the physical and chemical properties of the injected wastewater.[18]

Finally, Class I injection wells are continuously monitored and controlled, usually with sophisticated computers and digital equipment, which provide real-time data and information to

[15] Wells typically consist of three or more concentric layers of pipe: surface casing, long string casing, and injection tubing. Class I hazardous wells must have 3 layers of casing. 40 CFR § 146.65(c).

[16] 40 CFR §146.67.

[17] 40 CFR § 146.13(b).

[18] 40 CFR §146.68 (a).

the well operator. Thousands of data points about the pumping pressure for fluid disposal, the pressure in the space between the injection tubing and the well casing (that shows there are no leaks in the well), and data on the fluid being disposed of, such as its temperature and flow rate, are monitored and recorded each day.[19]

Alarms are connected to sound if anything out of the ordinary happens, and if unusual pressures are sensed by the monitoring equipment, the well pump automatically shuts off.[20] Disposal in the well does not resume until the cause of the unusual event is investigated, and the parties responsible for operating the well and the regulatory agencies both are sure that no environmental harm has been or will be done by well operations.[21]

The wells are also tested regularly, using special tools that are inserted into the well to record data about the well and surrounding rock formations. Regulators review all the data about the well operations, monitoring and testing frequently, and inspecting the well site to make sure everything is operating according to the requirements put in place to protect drinking water sources.

(d) Safety Factors and Safety Record

Because these Class I wells inject waste far below the deepest USDW, there is very little chance of any adverse effect on ground water that could be used for domestic or agricultural water supply. In fact, in its March 2001 Study of Class I wells, EPA said that "the probability of loss of waste confinement due to Class I injection has been demonstrated to be low" and "existing Class I regulatory controls are strong, adequately protective, and provide an extremely

[19] 40 CFR §146.67(a).

[20] 40 CFR §146.67(f).

[21] 40 CFR 146.67(h).

low-risk option in managing the wastewaters of concern."[22] In other words, the injection zone, the related impermeable confining layers above the injection zone, and the many layers of protection required in the construction, operation, and monitoring of wells, provide many safeguards against upward fluid movement, effectively protect USDWs.

Class I injection wells that meet EPA's design and operating requirements are well studied and pose minimal risks. In 1998, scientists quantitatively estimated the risk of waste containment loss as a result of various sets of events associated with Class I hazardous waste wells.[23] According to the study, because of the redundant safety systems in a typical Class I well, loss of containment would require a series of improbable events to occur in sequence. As a result, the calculated probability of containment loss resulting from each of the scenarios examined ranges from one-in-one-million to one-in-ten-quadrillion.[24]

In the field, the probability of Class I well failures, both nonhazardous and hazardous, has also been demonstrated to be very low. Some early Class I failures were a result of historic practices that are no longer permissible under current federal UIC regulations, such as improper well construction or improper well closure upon cessation of operations. As discussed above, Class I wells now have redundant safety systems and several protective layers; an injection well would fail only when multiple systems fail in sequence without detection. In the unlikely event that a well would fail, the geology of the injection and confining zones serves as a final safety mechanism to prevent movement of wastewater to USDWs. Injection well operators invest millions of dollars in the permitting, construction, and operation of wells and even in the absence

---

[22] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS xiii, 42 (March 2001) (emphasis supplied).

[23] Rish, W.A., T. Ijaz, and T.F. Long, *A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells*, 1998.

[24] *Id.*

of UIC regulations would carefully monitor the integrity of the injection operation to safeguard their investments.

Failures of Class I wells are exceedingly rare and have generally not resulted in significant harm to the environment or fresh water supplies. Typically, any failures of mechanical integrity that have occurred are internal failures, detected by continuous pressure monitoring systems or integrity tests. Any wells that fail are shut down until they are repaired to the satisfaction of the regulatory agency. EPA's study of more than 500 Class I nonhazardous and hazardous wells showed that loss of mechanical integrity contributed to only 4 cases of significant wastewater migration (none of which affected a drinking water source) over several decades of operation.[25] This safety record can be attributed to the rigorous requirements for monitoring and ensuring that the well materials are compatible with the wastewater injected.

IV. Summary of Proposed WCR

The proposed WCR is based on federal regulations for Class I hazardous waste injection wells found in 40 CFR Parts 144, 146, and 148. The proposed WCR draws from these federal provisions in two ways. First, in many cases, entire CFR provisions have been incorporated verbatim from the federal regulations (with minor conforming changes discussed below) and, as a result, are as stringent as the federal regulations. Minor adjustments were made to reflect the fact that (1) the regulations would be administered by OCD rather than by EPA and (2) the regulations will become a part of the NMAC. As a result, names, titles, and cross references have been adjusted to refer to New Mexico agencies and existing provisions in the NMAC. Second, where practicable, the WCR incorporates relevant subparts CFR by reference.

---

[25] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 41 (March 2001).

In most cases, New Mexico's existing UIC requirements are functionally equivalent to EPA's regulations. In turn, the proposed WCR is at a minimum as stringent as EPA's regulations. In a few cases, however, New Mexico's existing UIC program is more stringent than EPA's regulations and, as a result, certain provisions of the proposed WCR provisions are more stringent than their counterparts in the CFR. Finally, the proposed WCR would amend several existing sections of the NMAC because Class I hazardous waste injection wells would no longer be prohibited under New Mexico law. The following paragraphs summarize the proposed regulations, which are included in full as Attachment A to this Second Amended Petition and incorporated by reference into this Second Amended Petition. In addition, Table 1 below provides a cross reference between each applicable federal regulation for Class I hazardous waste injection wells and the corresponding NMAC provision.

A. Existing regulations.

The WCR proposes amendments to Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC. These amendments primarily involve administrative updates to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited and that the State's UIC regulations would be expanded to include 20.6.2.5300 through 20.6.2.5399 NMAC. The only substantive change to existing regulations is an expansion of the reporting requirements for Class I hazardous waste injection wells in 20.6.2.5101(G)(2) NMAC.

B. New regulations.

Sections 20.6.2.5300 through 5309 NMAC. The proposed WCR starts with several new provisions that provide necessary context and state-specific structure that are not based on the federal UIC provisions. Section 20.6.2.5300 NMAC provides the requirements for Class I

hazardous waste injection wells and expressly limits the scope of the Class I hazardous waste injection well program to petroleum refineries. Section 20.6.2.5301 NMAC includes all of the definitions applicable to Class I hazardous waste injection wells (beyond those generally applicable to 20.6.2 NMAC). Section 20.6.2.5302 NMAC provides the fee provisions for Class I hazardous waste injection wells, including a filing fee, permit fee, annual administrative fee, renewal fee, modification fee, and financial assurance fee. Section 20.6.2.5303 authorizes the conversion of existing Class I nonhazardous wells to Class I hazardous wells provided the permit applicant complies with all requirements for Class I hazardous wells and obtains the a Class I hazardous waste permit. Sections 20.6.2.5304 through 20.6.2.5309 NMAC are reserved.

Sections 20.6.2.5310 through 5319 NMAC. Section 20.6.2.3110 NMAC provides the requirements for wells injecting hazardous waste required to be accompanied by a manifest. This provision is substantially similar to the corresponding EPA regulation with updated cross references to the NMAC. Sections 20.6.2.5311 through 5319 NMAC are reserved.

Sections 20.6.2.5320 through 5329 NMAC. These provisions incorporate by reference EPA's financial assurance requirements for Class I hazardous waste injection wells found in 40 CFR Part 144, subpart F. The provisions authorize financial assurance using trust funds, surety bonds, letters of credit, insurance, and corporate guarantees by a permit applicant's corporate parents. To be consistent with OCD's existing UIC regulations, the proposed WCR does not incorporate by reference federal regulations that permit a financial test by a permit applicant. The WCR also does not incorporate by reference federal provisions that address EPA-administered programs or state assumption of responsibility for plugging and abandonment of Class I hazardous waste injection wells.

Sections 20.6.2.5330 through 5339 NMAC. These provisions are based on EPA's conditions applicable to all UIC permits found in 40 CFR Part 144, subpart E, although the WCR limits their applicability to Class I hazardous waste injection wells and does not include EPA regulations applicable to other classes of wells. These provisions include many of the procedural and administrative aspects of the Class I hazardous waste injection well program including, for example, the duty to reapply at the end of the permit term as well as schedules of compliance and monitoring, recordkeeping, and reporting obligations. The requirements are substantially similar to the corresponding EPA regulations applicable to Class I hazardous waste injection wells. One area where WCR is more stringent than EPA is the requirement that the director of OCD provide written approval for the transfer of a Class I hazardous waste injection well permit.

Sections 20.6.2.5351 through 5369 NMAC. These provisions are based on EPA's substantive criteria and standards for Class I hazardous waste injection wells found in 40 CFR Part 146, subpart G. These provisions provide applicability criteria; minimum siting requirements; corrective action provisions; construction and operating requirements; testing, monitoring, and reporting requirements, and closure and post-closure requirements. These provisions also provide the technical requirements that will be applicable to Class I hazardous waste injection wells. The proposed provisions in the WCR are substantially similar to EPA regulations, with appropriate updates to cross references to address New Mexico's existing UIC regulations. There are no substantive additions or deletions to these sections.

Sections 20.6.2.5370 through 5371 NMAC. These provisions incorporate by reference EPA's hazardous waste injection restrictions found in 40 CFR Part 148. The EPA provisions identify wastes that are restricted from disposal in Class I hazardous waste injection wells and define the circumstances under which such restricted wastes may be disposed of in Class I

hazardous waste injection wells. The WCR does not incorporate by reference provisions which have been deleted from the Code of Federal Regulations and are now reserved and those provisions which were applicable only for a fixed period of time which has since lapsed.

Sections 20.6.2.5372 through 5399 are reserved.

Cross Reference Table
for Proposed NM Class I Hazardous Waste UIC Program Rules—New Rule Sections

CFR Cite/Title	NMAC Cite	Notes
40 CFR Part 144 Subpart A - General Provisions (one section)		
§ 144.14 Requirements for wells injecting hazardous waste.	20.6.2.5310	Federal text adopted with conforming changes
40 CFR Part 144 Subpart E - Permit Conditions (all sections)		
§ 144.51 Conditions applicable to all permits.	20.6.2.5341	Federal text adopted with conforming changes
§ 144.52 Establishing permit conditions.	20.6.2.5342	Federal text adopted with conforming changes
§ 144.53 Schedule of compliance.	20.6.2.5343	Federal text adopted with conforming changes
§ 144.54 Requirements for recording and reporting of monitoring results.	20.6.2.5344	Federal text adopted with conforming changes
§ 144.55 Corrective action.	N/A	N/A
40 CFR Part 144 Subpart F - Financial Responsibility: Class I Hazardous Waste Injection Wells (all sections)		
§ 144.60 Applicability.	20.6.2.5320	Incorporated By Reference
§ 144.61 Definitions of terms as used in this subpart.	20.6.2.5320	Incorporated By Reference
§ 144.62 Cost estimate for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.63 Financial assurance for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.64 Incapacity of owners or operators, guarantors, or financial institutions.	20.6.2.5320	Incorporated By Reference
§ 144.65 Use of State-required mechanisms.	N/A	N/A
§ 144.66 State assumption of responsibility.	N/A	N/A
§ 144.70 Wording of the instruments.	20.6.2.5320	Incorporated By Reference
40 CFR Part 146 Subpart G - Criteria and Standards Applicable to Class I Hazardous Waste Injection Wells (all sections)		
§ 146.61 Applicability.	20.6.2.5351	Federal text adopted with conforming changes
§ 146.62 Minimum criteria for siting.	20.6.2.5352	Federal text adopted with conforming changes
§ 146.63 Area of review.	20.6.2.5353	Federal text adopted with conforming changes
§ 146.64 Corrective action for wells in the area of review.	20.6.2.5354	Federal text adopted with conforming changes
§ 146.65 Construction requirements.	20.6.2.5355	Federal text adopted with conforming changes

CFR Cite/Title	NMAC Cite	Notes
§ 146.66 Logging, sampling, and testing prior to new well operation.	20.6.2.5356	Federal text adopted with conforming changes
§ 146.67 Operating requirements.	20.6.2.5357	Federal text adopted with conforming changes
§ 146.68 Testing and monitoring requirements.	20.6.2.5358	Federal text adopted with conforming changes
§ 146.69 Reporting requirements.	20.6.2.5359	Federal text adopted with conforming changes
§ 146.70 Information to be evaluated by the Director.	20.6.2.5360	Federal text adopted with conforming changes
§ 146.71 Closure.	20.6.2.5361	Federal text adopted with conforming changes
§ 146.72 Post-closure care.	20.6.2.5362	Federal text adopted with conforming changes
§ 146.73 Financial responsibility for post-closure care.	20.6.2.5363	Federal text adopted with conforming changes
40 CFR Part 148 Subpart A - General (all sections)		
§ 148.1 Purpose, scope and applicability.	20.6.2.5371	Incorporated By Reference
§ 148.2 Definitions.	20.6.2.5371	Incorporated By Reference
§ 148.3 Dilution prohibited as a substitute for treatment.	20.6.2.5371	Incorporated By Reference
§ 148.4 Procedures for case-by-case extensions to an effective date.	20.6.2.5371	Incorporated By Reference
§ 148.5 Waste analysis.	20.6.2.5371	Incorporated By Reference
40 CFR Part 148 Subpart B - Prohibitions on Injection (all sections)		
§ 148.10 Waste specific prohibitions—solvent wastes	20.6.2.5371	Incorporated By Reference
§ 148.11 Waste specific prohibitions—dioxin-containing wastes.	20.6.2.5371	Incorporated By Reference
§ 148.12 Waste specific prohibitions—California list wastes.	20.6.2.5371	Incorporated By Reference
§ 148.14 Waste specific prohibitions—first third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.15 Waste specific prohibitions—second third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.16 Waste specific prohibitions—third third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.17 Waste specific prohibitions; newly listed wastes.	20.6.2.5371	Incorporated By Reference
§ 148.18 Waste specific prohibitions—newly listed and identified wastes.	20.6.2.5371	Incorporated By Reference
40 CFR Part 148 Subpart C - Petition Standards and Procedures (all sections)		

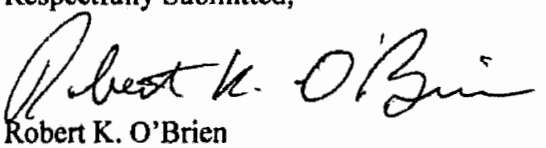
CFR Cite/Title	NMAC Cite	Notes
§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.	20.6.2.5371	Incorporated By Reference
§ 148.21 Information to be submitted in support of petitions.	20.6.2.5371	Incorporated By Reference
§ 148.22 Requirements for petition submission, review and approval or denial.	20.6.2.5371	Incorporated By Reference
§ 148.23 Review of exemptions granted pursuant to a petition.	20.6.2.5371	Incorporated By Reference
§ 148.24 Termination of approved petition.	20.6.2.5371	Incorporated By Reference

V. Request for Hearing

Navajo's First Amended Petition requested that the Commission schedule a rulemaking hearing to consider the proposed Water Conservation Act. Petitioners reiterate that request here. Pursuant to the request in the First Amended Petition the Commission has scheduled a hearing to begin on July 14, 2015. This hearing date will allow the Commission to conduct the hearing in conjunction with the Commission's July 2015 meeting. Official notice of the hearing will be filed separately and will be published in the New Mexico Register and in newspapers of general circulation in the state of New Mexico in accordance with New Mexico law.

It is anticipated that the rulemaking hearing will take approximately one day or less.

Respectfully Submitted,



Robert K. O'Brien
Vice President & Refinery Manager
Navajo Refining Company, L.L.C.
Post Office Box 159
Artesia, New Mexico 88211

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC has been hand delivered to the following party on April 30, 2015.

Pam Castañeda
Administrator
New Mexico Water Quality Control Commission
1190 South Saint Francis Drive, S-2102
Santa Fe, New Mexico 87502

I hereby certify that a copy of the Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC has been served via e-mail and regular U.S Mail to the following parties on April 30, 2015.

Andrew Knight
Assistant General Counsel
Office of General Counsel
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502-6110
Email: Andrew.knight@state.nm.us

Bill Brancard
New Mexico Energy, Minerals, and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us

Wade Jackson
General Counsel
New Mexico Economic Development Department
Joseph Montoya Building
1100 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Wade.jackson@state.nm.us
Counsel for the Commission

Christina C. Sheehan
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
PO Box 2168
Albuquerque, New Mexico 87103
Email: ccs@modrall.com
Counsel for Navajo Refining Company, LLC

PROPOSED WATER CONSERVATION RULE – JUNE 15, 2015

I. Proposed Amendments to Existing Provisions.

Section 20.6.2.3106 NMAC is amended to read:

20.6.2.3106 APPLICATION FOR DISCHARGE PERMITS AND RENEWALS:

A. Any person who, before or on June 18, 1977, is discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall, within 120 days of receipt of written notice from the secretary that a discharge permit is required, or such longer time as the secretary shall for good cause allow, submit a discharge plan to the secretary for approval; such person may discharge without a discharge permit until 240 days after written notification by the secretary that a discharge permit is required or such longer time as the secretary shall for good cause allow.

B. Any person who intends to begin, after June 18, 1977, discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall notify the secretary giving the information enumerated in Subsection B of Section 20.6.2.1201NMAC; the secretary shall, within 60 days, notify such person if a discharge permit is required; upon submission, the secretary shall review the discharge plan pursuant to Sections 20.6.2.3108 and 20.6.2.3109 NMAC. For good cause shown the secretary may allow such person to discharge without a discharge permit for a period not to exceed 120 days.

C. A proposed discharge plan shall set forth in detail the methods or techniques the discharger proposes to use or processes expected to naturally occur which will ensure compliance with this Part. At least the following information shall be included in the plan:

(1) Quantity, quality and flow characteristics of the discharge;

(2) Location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;

(3) Depth to and TDS concentration of the ground water most likely to be affected by the discharge;

(4) Flooding potential of the site;

(5) Location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;

(6) Depth to and lithological description of rock at base of alluvium below the discharge site if such information is available;

(7) Any additional information that may be necessary to demonstrate that the discharge permit will not result in concentrations in excess of the standards of Section 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use. Detailed information on site geologic and hydrologic conditions may be required for a technical evaluation of the applicant's proposed discharge plan; and

(8) Additional detailed information required for a technical evaluation of underground injection control wells as provided in Sections 20.6.2.5000 through [~~20.6.2. 5299~~] 20.6.2.5399 NMAC,

D. An applicant for a discharge permit shall pay fees as specified in [~~Section~~] Sections 20.6.2.3114 and 20.6.2.5302 NMAC.

E. An applicant for a permit to dispose of or use septage or sludge, or within a source category designated by the commission, may be required by the secretary to file a disclosure statement as specified in 74-6-5.1 of the Water Quality Act.

F. If the holder of a discharge permit submits an application for discharge permit renewal at least 120 days before the discharge permit expires, and the discharger is not in violation of the discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge permit continued under this provision remains fully effective and enforceable. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

Section 20.6.2.3107 NMAC is amended to read:

20.6.2.3107 MONITORING, REPORTING, AND OTHER REQUIREMENTS:

A. Each discharge plan shall provide for the following as the secretary may require:

(1) The installation, use, and maintenance of effluent monitoring devices;

(2) The installation, use, and maintenance of monitoring devices for the ground water most likely to be affected by the discharge;

(3) Monitoring in the vadose zone;

(4) Continuation of monitoring after cessation of operations;

(5) Periodic submission to the secretary of results obtained pursuant to any monitoring requirements in the discharge permit and the methods used to obtain these results;

(6) Periodic reporting to the secretary of any other information that may be required as set forth in the discharge permit;

(7) The discharger to retain for a period of at least five years any monitoring data required in the discharge permit;

(8) A system of monitoring and reporting to verify that the permit is achieving the expected results;

(9) Procedures for detecting failure of the discharge system;

(10) Contingency plans to cope with failure of the discharge permit or system;

(11) A closure plan to prevent the exceedance of standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation which includes: a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent and/or abate such contamination. The obligation to implement the closure plan as well as the requirements of the closure plan, if any is required, survives the termination or expiration of the permit. A closure plan for any underground injection control well must also incorporate the applicable requirements of Sections 20.6.2.5005, [~~and~~] 20.6.2.5209, and 20.6.2.5361 NMAC.

B. Sampling and analytical techniques shall conform with the following references unless otherwise specified by the secretary:

(1) Standard Methods for the Examination of Water and Wastewater, latest edition, American Public Health Association; or

(2) Methods for Chemical Analysis of Water and Waste, and other publications of the Analytical Quality Laboratory, EPA; or

(3) Techniques of Water Resource Investigations of the U.S. Geological Survey; or

(4) Annual Book of ASTM Standards. Part 31. Water, latest edition, American Society For Testing and Materials; or

(5) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or

(6) National Handbook of Recommended Methods for Water-Data Acquisition, latest edition, prepared cooperatively by agencies of the United States Government under the sponsorship of the U.S. Geological Survey.

C. The discharger shall notify the secretary of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants.

D. Any discharger of effluent or leachate shall allow any authorized representative of the secretary to:

(1) inspect and copy records required by a discharge permit;

(2) inspect any treatment works, monitoring and analytical equipment;

(3) sample any effluent before or after discharge;

(4) use monitoring systems and wells installed pursuant to a discharge permit requirement in order to collect samples from ground water or the vadose zone.

E. Each discharge permit for an underground injection control well shall incorporate the applicable requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

Section 20.6.2.3109 NMAC is amended to read:

20.6.2.3109 SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENT FOR ABATEMENT PLANS:

A. The department shall evaluate the application for a discharge permit, modification or renewal based on information contained in the department's administrative record. The department may request from the discharger, either before or after the issuance of any public notice, additional information necessary for the evaluation of the application. The administrative record shall consist of the application, any additional information required by the department, any information submitted by the discharger or the general public, other information considered by the department, the proposed approval or disapproval of an application for a discharge permit, modification or renewal prepared pursuant to Subsection G of 20.6.2.3108 NMAC, and, if a public hearing is held, all of the documents filed with the hearing clerk, all exhibits offered into evidence at the hearing, the written transcript or tape recording of the hearing, any hearing officer report, and any post hearing submissions.

B. The secretary shall, within 30 days after the administrative record is complete and all required information is available, approve, approve with conditions or disapprove the proposed discharge permit, modification or renewal based on the administrative record. The secretary shall give written notice of the action taken to the applicant or permittee and any other person who participated in the permitting action who requests a copy in writing.

C. Provided that the other requirements of this part are met and the proposed discharge plan, modification or renewal demonstrates that neither a hazard to public health nor undue risk to property will result, the secretary shall approve the proposed discharge plan, modification or renewal if the following requirements are met:

(1) ground water that has a TDS concentration of 10,000 mg/l or less will not be affected by the discharge; or

(2) the person proposing to discharge demonstrates that approval of the proposed discharge plan, modification or renewal will not result in either concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place

of withdrawal of water for present or reasonably foreseeable future use, except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(3) the proposed discharge plan conforms to either Subparagraph (a) or (b) below and Subparagraph (c) below:

(a) municipal, other domestic discharges, and discharges from sewerage systems handling only animal wastes: the effluent is entirely domestic, is entirely from a sewerage system handling only animal wastes or is from a municipality and conforms to the following:

(i) the discharge is from an impoundment or a leach field existing on February 18, 1977 which receives less than 10,000 gallons per day and the secretary has not found that the discharge may cause a hazard to public health; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment will not exceed 200 pounds per acre per year and that the effluent will meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii)the total nitrogen in effluent that is applied to a crop which is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(b) discharges from industrial, mining or manufacturing operations:

(i) the discharger has demonstrated that the amount of effluent that enters the subsurface from a surface impoundment will not exceed 0.5 acre-feet per acre per year; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment shall not exceed 200 pounds per acre per year and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop that is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(c) all discharges:

(i) the monitoring system proposed in the discharge plan includes adequate provision for sampling of effluent and adequate flow monitoring so that the amount being discharged onto or below the surface of the ground can be determined;

(ii) the monitoring data is reported to the secretary at a frequency determined by the secretary.

D. The secretary shall allow the following unless he determines that a hazard to public health may result:

(1) the weight of water contaminants in water diverted from any source may be discharged provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted; and provided further that contaminants added as a result of the means of diversion shall not be considered to be part of the weight of water contaminants in the water diverted;

(2) the water contaminants leached from undisturbed natural materials may be discharged provided that:

(a) the contaminants were not leached as a product or incidentally pursuant to a solution mining operation; and

(b) the contaminants were not leached as a result of direct discharge into the vadose zone from municipal or industrial facilities used for the storage, disposal, or treatment of effluent;

(3) the water contaminants leached from undisturbed natural materials as a result of discharge into ground water from lakes used as a source of cooling water.

E. If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicates that this part is being or may be violated or that the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present, in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate Streams in New Mexico are being or may be violated in surface water, due to the discharge, except as provided in Subsection D of 20.6.2.3109 NMAC.

(1) The secretary may require a discharge permit modification within the shortest reasonable time so as to achieve compliance with this part and to provide that any exceeding of standards in ground water at any place of withdrawal for present or reasonably foreseeable future use, or in surface water, due to the discharge except as provided in Subsection D of 20.6.2.3109 NMAC will be abated or prevented. If the secretary requires a discharge permit modification to abate water pollution:

(a) the abatement shall be consistent with the requirements and provisions of 20.6.2.4101, 20.6.2.4103, Subsection C and E of 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC; and

(b) the discharger may request of the secretary approval to carry out the abatement under 20.6.2.4000 through 20.6.2.4115 NMAC, in lieu of modifying the discharge permit; the discharger shall make the request in writing and shall include the reasons for the request.

(2) The secretary may terminate a discharge permit when a discharger fails to modify the permit in accordance with Paragraph (1) of Subsection E of 20.6.2.3109 NMAC.

(3) The secretary may require modification, or may terminate a discharge permit for a class I [~~non-hazardous waste injection~~] well, a class III well or other type of well specified in Subsection A of 20.6.2.5101 NMAC, pursuant to the requirements of Subsection I of 20.6.2.5101 NMAC.

F. If a discharge permit expires or is terminated for any reason and the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present in ground water, or that the Water Quality Standards for Interstate and Intrastate Streams in New Mexico are being or may be violated, the secretary may require the discharger to submit an abatement plan pursuant to 20.6.2.4104 and Subsection A of 20.6.2.4106 NMAC.

G. At the request of the discharger, a discharge permit may be modified in accordance with 20.6.2.3000 through 20.6.2.3114 NMAC.

H. The secretary shall not approve a proposed discharge plan, modification, or renewal for:

(1) any discharge for which the discharger has not provided a site and method for flow measurement and sampling;

(2) any discharge that will cause any stream standard to be violated;

(3) the discharge of any water contaminant which may result in a hazard to public health; or

(4) a period longer than five years, except that for new discharges, the term of the discharge permit approval shall commence on the date the discharge begins, but in no event shall the term of the approval exceed seven years from the date the permit was issued; for those permits expiring more than five years from the date of issuance, the discharger shall give prior written notification to the department of the date the discharge is to commence; the term of the permit shall not exceed five years from that date.

Section 20.6.2.5001 NMAC is amended to read:

20.6.2.5001 PURPOSE: The purpose of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC controlling discharges from underground injection control wells is to protect all ground water of the State of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow for

uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC include notification requirements, and requirements for discharges directly into the subsurface through underground injection control wells.

Section 20.6.2.5002 NMAC is amended to read:

20.6.2.5002 UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

A. Underground injection control wells include the following.

(1) Any dug hole or well that is deeper than its largest surface dimension, where the principal function of the hole is emplacement of fluids.

(2) Any septic tank or cesspool used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste.

(3) Any subsurface distribution system, cesspool or other well which is used for the injection of wastes.

B. Underground injection control wells are classified as follows:

(1) Class I wells inject fluids beneath the lowermost formation that contains 10,000 milligrams per liter or less TDS. Class I hazardous or radioactive waste injection wells inject fluids containing any hazardous or radioactive waste as defined in 74-4-3 and 74-4A-4 NMSA 1978 or Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3), including any combination of these wastes. Class I non-hazardous waste injection wells inject non-hazardous and non-radioactive fluids, and they inject naturally-occurring radioactive material (NORM) as provided by Section 20.3.1.1407 NMAC.

(2) Class II wells inject fluids associated with oil and gas recovery.

(3) Class III wells inject fluids for extraction of minerals or other natural resources, including sulfur, uranium, metals, salts or potash by in situ extraction. This classification includes only in situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.

(4) Class IV wells inject fluids containing any radioactive or hazardous waste as defined in 74-4-3 and 74-4A-4 NMSA 1978, including any combination of these wastes, above or into a formation that contains 10,000 mg/l or less TDS.

(5) Class V wells inject a variety of fluids and are those wells not included in Class I, II, III or IV. Types of Class V wells include, but are not limited to, the following:

(a) Domestic liquid waste injection wells

(i) domestic liquid waste disposal wells used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC through subsurface fluid distribution systems or vertical wells;

(ii) septic system wells used to emplace liquid waste volumes greater than that regulated by 20.7.3 NMAC into the subsurface, which are comprised of a septic tank and subsurface fluid distribution system;

(iii) large capacity cesspools used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC, including drywells that sometimes have an open bottom and/or perforated sides.

(b) Industrial waste injection wells

(i) air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling;

(ii) dry wells used for the injection of wastes into a subsurface formation;

(iii) geothermal energy injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electrical power;

(iv) stormwater drainage wells used to inject storm runoff from the surface into the subsurface;

(v) motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities;

(vi) car wash waste disposal wells used to inject fluids from motor vehicle washing activities.

(c) Mining injection wells

(i) stopes leaching wells used for solution mining of conventional mines;

(ii) brine injection wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;

(iii) backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether water injected is a radioactive waste or not;

(iv) injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale.

(d) Ground water management injection wells

(i) ground water remediation injection wells used to inject contaminated ground water that has been treated to ground water quality standards;

(ii) in situ ground water remediation wells used to inject a fluid that facilitates vadose zone or ground water remediation.

(iii) recharge wells used to replenish the water in an aquifer, including use to reclaim or improve the quality of existing ground water;

(iv) barrier wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality;

(v) subsidence control wells (not used for purposes of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

(vi) wells used in experimental technologies.

(e) Agricultural injection wells - drainage wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality.

Section 20.6.2.5003 NMAC is amended to read:

20.6.2.5003 NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS: All operators of underground injection control wells, except those wells regulated under the Oil and Gas Act, the Geothermal Resources Conservation Act, and the Surface Mining Act, shall:

A. For existing underground injection control wells, submit to the secretary the information enumerated in Subsection C of Section 20.6.2.1201 NMAC of this Part; provided, however, that if the information in Subsection C of Section 20.6.2.1201 NMAC has been previously submitted to the secretary and acknowledged by him, the information need not be resubmitted; and

B. Operate and continue to operate in conformance with Sections 20.6.2.1 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

C. For new underground injection control wells, submit to the secretary the information enumerated in Subsection C of Section 20.6.2.1201 NMAC of this Part at least 120 days prior to well construction.

Section 20.6.2.5004 NMAC is amended to read:

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this Subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in Sections 20.6.2.5300 through 20.6.2.5399 NMAC or this Subsection.

(a) Class I [~~hazardous or~~]radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the Environmental Protection Agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.

Section 20.6.2.5101 NMAC is amended to read:

20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Class I [~~non-hazardous waste injection~~] wells and Class III wells must meet the requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC in addition to other applicable requirements of the commission regulations. The secretary may also require that some Class IV and Class V wells comply with the requirements for Class I [~~non-hazardous waste injection~~] wells in Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC if the secretary determines that the additional requirements are necessary to prevent the movement of water contaminants from a specified injection zone into ground water having 10,000 mg/l or less TDS. No Class I [~~non-hazardous waste injection~~] well or Class III well may be approved which allows for movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, or pursuant to a temporary designation as provided in Paragraph (2) of Subsection C of Section 20.6.2.5101 NMAC.

B. Operation of a Class I [~~non-hazardous waste injection~~] well or Class III well must be pursuant to a discharge permit meeting the requirements of Sections 20.6.2.3000 through 20.6.2.3999 NMAC and Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

C. Discharge permits for Class I [~~non-hazardous waste injection~~] wells, or Class III wells affecting ground water of 10,000 mg/l or less TDS submitted for secretary approval shall:

(1) Receive an aquifer designation if required in Section 20.6.2.5103 NMAC prior to discharge permit issuance; or

(2) For Class III wells only, address the methods or techniques to be used to restore ground water so that upon final termination of operations including restoration efforts, ground water at any place of withdrawal for present or reasonably foreseeable future use will not contain either concentrations in excess of the standards of Section 20.6.2.3103 NMAC or any toxic pollutant. Issuance of a discharge permit or project discharge permit for Class III wells that provides for restoration of ground water in accordance with the requirements of this Subsection shall substitute for the aquifer designation provisions of Section 20.6.2.5103 NMAC. The approval shall constitute a temporary aquifer designation for a mineral bearing or producing aquifer, or portion thereof, to allow injection as provided for in the discharge permit. Such temporary designation shall expire upon final termination of operations including restoration efforts.

D. The exemptions from the discharge permit requirement listed in Section 20.6.2.3105 NMAC do not apply to underground injection control wells except as provided below:

(1) Wells regulated by the Oil Conservation Division under the exclusive authority granted under Section 70-2-12 NMSA 1978 or under other Sections of the "Oil and Gas Act";

(2) Wells regulated by the Oil Conservation Division under the "Geothermal Resources Act";

(3) Wells regulated by the New Mexico Coal Surface Mining Bureau under the "Surface Mining Act";

(4) Wells for the disposal of effluent from systems which are regulated under the "Liquid Waste Disposal and Treatment" regulations (20 NMAC 7.3) [20.7.3 NMAC] adopted by the Environmental Improvement Board under the "Environmental Improvement Act".

E. Project permits for Class III wells.

(1) The secretary may consider a project discharge permit for Class III wells, if the wells are:

(a) Within the same well field, facility site or similar unit,

(b) Within the same aquifer and ore deposit,

(c) Of similar construction,

(d) Of the same purpose, and

(e) Operated by a single owner or operator.

(2) A project discharge permit does not allow the discharger to commence injection in any individual operational area until the secretary approves an application for injection in that operational area (operational area approval).

(3) A project discharge permit shall:

(a) Specify the approximate locations and number of wells for which operational area approvals are or will be sought with approximate time frames for operation and restoration (if restoration is required) of each area; and

(b) Provide the information required under the following Sections of this Part, except for such additional site-specific information as needed to evaluate applications for individual operational area approvals: Subsection C of Section 20.6.2.3106, Sections 20.6.2.3107, 20.6.2.5204 through 20.6.2.5209, and Subsection B of Section 20.6.2.5210 NMAC.

(4) Applications for individual operational area approval shall include the following:

(a) Site-specific information demonstrating that the requirements of this Part are met, and

(b) Information required under Sections 20.6.2.5202 through 20.6.2.5210 NMAC and not previously provided pursuant to Subparagraph (b) of Paragraph (3) of Subsection E of this Section.

(5) Applications for project discharge permits and for operational area approval shall be processed in accordance with the same procedures provided for discharge permits under Sections 20.6.2.3000 through 20.6.2.3114 NMAC, allowing for public notice on the project discharge permit and on each application for operational area approval pursuant to Section 20.6.2.3108 NMAC with opportunity for public hearing prior to approval or disapproval.

(6) The discharger shall comply with additional requirements that may be imposed by the secretary pursuant to this Part on wells in each new operational area.

F. If the holder of a discharge permit for a Class I [~~non-hazardous waste injection~~] well, or Class III well submits an application for discharge permit renewal at least 120 days before discharge permit expiration, and the discharger is in compliance with his discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

G. Discharge Permit Signatory Requirements: No discharge permit for a Class I [~~non-hazardous waste injection~~] well or Class III well may be issued unless:

(1) The application for a discharge permit has been signed as follows:

(a) For a corporation: by a principal executive officer of at least the level of vice-president, or a representative who performs similar policy-making functions for the corporation who has authority to sign for the corporation; or

(b) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(c) For a municipality, state, federal, or other public agency: by either a principal executive officer who has authority to sign for the agency, or a ranking elected official; and

(2) All reports required by Class I hazardous waste injection well permits and other information requested by the Director pursuant to a Class I hazardous waste injection well permit shall be signed by a person described in paragraph (1) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(a) The authorization is made in writing by a person described in paragraph (1) of this section;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(c) The written authorization is submitted to the Director.

(3) *Changes to authorization.* If an authorization under paragraph (2) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (2) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

[~~(2)~~] (4) The signature on an application, report or other information requested by the Director must be [~~is~~] directly preceded by the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

H. Transfer of Class I non-hazardous waste injection well and Class III well Discharge Permits.

(1) The transfer provisions of Section 20.6.2.3111 NMAC do not apply to a discharge permit for a Class I non-hazardous waste injection well or Class III well.

(2) A Class I non-hazardous waste injection well or Class III well discharge permit may be transferred if:

(a) The secretary receives written notice 30 days prior to the transfer date; and

(b) The secretary does not object prior to the proposed transfer date. The secretary may require modification of the discharge permit as a condition of transfer, and may require demonstration of adequate financial responsibility.

(3) The written notice required by Subparagraph (b) of Paragraph (2) of Subsection I above shall:

(a) Have been signed by the discharger and the succeeding discharger, including an acknowledgement that the succeeding discharger shall be responsible for compliance with the discharge permit upon taking possession of the facility; and

(b) Set a specific date for transfer of discharge permit responsibility, coverage and liability; and

(c) Include information relating to the succeeding discharger's financial responsibility required by Paragraph (17) of Subsection B of Section 20.6.2.5210 NMAC.

I. Modification or Termination of a Discharge Permit for a Class I [~~non-hazardous waste injection~~] well or Class III well: If data submitted pursuant to any

monitoring requirements specified in the discharge permit or other information available to the secretary indicate that this Part are being or may be violated, the secretary may require modification or, if it is determined by the secretary that the modification may not be adequate, may terminate a discharge permit for a Class I [~~non-hazardous waste injection~~] Well, or Class III well or well field, that was approved pursuant to the requirements of this under Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC for the following causes:

(1) Noncompliance by the discharger with any condition of the discharge permit; or

(2) The discharger's failure in the discharge permit application or during the discharge permit review process to disclose fully all relevant facts, or the discharger's misrepresentation of any relevant facts at any time; or

(3) A determination that the permitted activity may cause a hazard to public health or undue risk to property and can only be regulated to acceptable levels by discharge permit modification or termination.

Section 20.6.2.5102 NMAC is amended to read:

20.6.2.5102 PRE-CONSTRUCTION REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Discharge Permit Requirement for Class I [~~non-hazardous waste injection~~] wells.

(1) Prior to construction of a Class I [~~non-hazardous waste injection~~] well or conversion of an existing well to a Class I [~~non-hazardous waste injection~~] well, an approved discharge permit is required that incorporates the requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC, except Subsection C of Section 20.6.2.5210 NMAC. As a condition of discharge permit issuance, the operation of the Class I [~~non-hazardous waste injection~~] well under the discharge permit will not be authorized until the secretary has:

(a) Reviewed the information submitted for his consideration pursuant to Subsection C of Section 20.6.2.5210 NMAC, and

(b) Determined that the information submitted demonstrates that the operation will be in compliance with this Part and the discharge permit.

(2) If conditions encountered during construction represent a substantial change which could adversely impact ground water quality from those anticipated in the discharge permit, the secretary shall require a discharge permit modification or may terminate the discharge permit pursuant to Subsection I of Section 20.6.2.5101 NMAC, and the secretary shall publish public notice and allow for comments and hearing in accordance with Section 20.6.2.3108 NMAC.

B. Notification Requirement for Class III wells.

(1) The discharger shall notify the secretary in writing prior to the commencement of drilling or construction of wells which are expected to be used for in situ extraction, unless the discharger has previously received a discharge permit or project discharge permit for the Class III well operation.

(a) Any person, proposing to drill or construct a new Class III well or well field, or convert an existing well to a Class III well, shall file plans, specifications and pertinent documents regarding such construction or conversion, with the Ground Water Quality Bureau of the Environment Department.

(b) Plans, specifications, and pertinent documents required by this Section, if pertaining to geothermal installations, carbon dioxide facilities, or facilities for the exploration, production, refinement or pipeline transmission of oil and natural gas, shall be filed instead with the Oil Conservation Division.

(c) Plans, specifications and pertinent documents required to be filed under this Section must be filed 90 days prior to the planned commencement of construction or conversion.

(d) The following plans, specifications and pertinent documents shall be provided with the notification:

(i) Information required in Subsection C of Section 20.6.2.3106 NMAC;

(ii) A map showing the Class III wells which are to be constructed. The map must also show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, that are within the expected area of review (Section 20.6.2.5202 NMAC) of the Class III well or well field perimeter;

(iii) Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within one mile of the site, the position of such ground water within this area relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(iv) Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(v) The proposed formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation;

(vi) The proposed stimulation program;

(vii) The proposed injection procedure;

(viii) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(ix) Proposed construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(x) Information, as described in Paragraph (17) of Subsection B of Section 20.6.2.5210 NMAC, showing the ability of the discharger to undertake measures necessary to prevent groundwater contamination; and

(xi) A plugging and abandonment plan showing that the requirements of Subsections B, C and D of Section 20.6.2.5209 NMAC will be met.

(2) Prior to construction, the discharger shall have received written notice from the secretary that the information submitted under item 10 of Subparagraph (d) of Paragraph (1) of Subsection B of Section 20.6.2.5102 NMAC is acceptable. Within 30 days of submission of the above information the secretary shall notify the discharger that the information submitted is acceptable or unacceptable.

(3) Prior to construction, the secretary shall review said plans, specifications and pertinent documents and shall comment upon their adequacy of design for the intended purpose and their compliance with pertinent Sections of this Part. Review of plans, specifications and pertinent documents shall be based on the criteria contained in Section 20.6.2.5205, Subsection E of Section 20.6.2.5209, and Subparagraph (d) of Paragraph (1) of Subsection B of Section 20.6.2.5102 NMAC.

(4) Within thirty (30) days of receipt, the secretary shall issue public notice, consistent with Subsection B of Section 20.6.2.3108 NMAC, that notification was submitted pursuant to Subsection B of Section 20.6.2.5102 NMAC. The secretary shall allow a period of at least thirty (30) days during which comments may be submitted. The public notice shall include:

(a) Name and address of the proposed discharger;

(b) Location of the discharge;

(c) Brief description of the proposed activities;

(d) Statement of the public comment period; and

(e) Address and telephone number at which interested persons may obtain further information.

(5) The secretary shall comment in writing upon the plans and specifications within sixty (60) days of their receipt by the secretary.

(6) Within thirty (30) days after completion, the discharger shall submit written notice to the secretary that the construction or conversion was completed in accordance with submitted plans and specifications, or shall submit as-built plans detailing changes from the originally submitted plans and specifications.

(7) In the event a discharge permit application is not submitted or approved, all wells which may cause groundwater contamination shall be plugged and abandoned by the applicant pursuant to the plugging and abandonment plan submitted in the notification; these measures shall be consistent with any comments made by the secretary in his review. If the wells are not to be permanently abandoned and the discharger demonstrates that plugging at this time is unnecessary to prevent groundwater contamination, plugging pursuant to the notification is not required. Financial responsibility established pursuant to Sections 20.6.2.5000 through 20.6.2.5299 NMAC will remain in effect until the discharger permanently abandons and plugs the wells in accordance with the plugging and abandonment plan.

Section 20.6.2.5103 NMAC is amended to read:

20.6.2.5103 DESIGNATED AQUIFERS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Any person may file a written petition with the secretary seeking commission consideration of certain aquifers or portions of aquifers as "designated aquifers". The purpose of aquifer designation is:

(1) For Class I [~~non-hazardous waste injection~~] wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS; or

(2) For Class III wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS, and not provide for restoration or complete restoration of that ground water pursuant to Paragraph (2) of Subsection C of Section 20.6.2.5101 NMAC.

B. The applicant shall identify (by narrative description, illustrations, maps or other means) and describe such aquifers, in geologic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite.

C. An aquifer or portion of an aquifer may be considered for aquifer designation under Subsection A. of this Section, if the applicant demonstrates that the following criteria are met:

(1) It is not currently used as a domestic or agricultural water supply; and

(2) There is no reasonable relationship between the economic and social costs of failure to designate and benefits to be obtained from its use as a domestic or agricultural water supply because:

(a) It is situated at a depth or location which makes recovery of water for drinking or agricultural purposes economically or technologically impractical at present and in the reasonably foreseeable future; or

(b) It is already so contaminated that it would be economically or technologically impractical to render that water fit for human consumption or agricultural use at present and in the reasonably foreseeable future.

D. The petition shall state the extent to which injection would add water contaminants to ground water and why the proposed aquifer designation should be approved. For Class III wells, the applicant shall state whether and to what extent restoration will be carried out.

E. The secretary shall either transmit the petition to the commission within sixty (60) days recommending that a public hearing be held, or refuse to transmit the petition and notify the applicant in writing citing reasons for such refusal.

F. If the secretary transmits the petition to the commission, the commission shall review the petition and determine to either grant or deny a public hearing on the petition. If the commission grants a public hearing, it shall issue a public notice, including the following information:

(1) Name and address of the applicant;

(2) Location, depth, TDS, areal extent, general description and common name or other identification of the aquifer for which designation is sought;

(3) Nature of injection and extent to which the injection will add water contaminants to ground water; and

(4) Address and telephone number at which interested persons may obtain further information.

G. If the secretary refuses to transmit the petition to the commission, then the applicant may appeal the secretary's disapproval of the proposed aquifer designation to the commission within thirty (30) days, and address the issue of whether the proposed aquifer designation meets the criteria of Subsections A, B, C, and D of this Section.

H. If the commission grants a public hearing, the hearing shall be held in accordance with the provisions of Section 74-6-6, NMSA 1978.

I. If the commission does not grant a public hearing on the petition, the aquifer designation shall not be approved.

J. After public hearing and consideration of all facts and circumstances included in Section 74-6-4(D), NMSA 1978, the commission may authorize the secretary to approve a proposed designated aquifer if the commission determines that the criteria of Subsection A, B, C, and D of this section are met.

K. Approval of a designated aquifer petition does not alleviate the applicant from complying with other Sections of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC, or of the responsibility for protection, pursuant to this part, of other nondesignated aquifers containing ground water having 10,000 mg/l or less TDS.

L. Persons other than the petitioner may add water contaminants as a result of injection into an aquifer designated for injection, provided the person receives a discharge permit pursuant to the requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC. Persons, other than the original petitioner or his designee, requesting addition of water contaminants as a result of injection into aquifers previously designated only for injection with partial restoration shall file a petition with the commission pursuant to the requirements of Subsections A, B, C, and D of this Section.

Section 20.6.2.5104 NMAC is amended to read:

20.6.2.5104 WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Where a Class I [~~non-hazardous waste injection~~] well or a Class III well or well field, does not penetrate, or inject into or above, and which will not affect, ground water having 10,000 mg/l of less TDS, the secretary may:

(1) Issue a discharge permit for a well or well field with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required by Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC; or

(2) For Class III wells only, issue a discharge permit pursuant to the requirements of Sections 20.6.2.3000 through 20.6.2.3114 NMAC.

B. Authorization of a reduction in requirements under Subsection A of this Section shall be granted only if injection will not result in an increased risk of movement of fluids into ground water having 10,000 mg/l or less TDS, except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

Section 20.6.2.5200 NMAC is amended to read:

20.6.2.5200 TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

Section 20.6.2.5201 NMAC is amended to read:

20.6.2.5201 PURPOSE: Sections 20.6.2.5200 through 20.6.2.5210 NMAC provide the technical criteria and performance standards for Class I [~~non-hazardous waste injection~~] wells and Class III wells. (Sections 20.6.2.5300 through 20.6.2.5399 NMAC provide certain additional technical and performance standards for Class I hazardous waste injection wells.)

Section 20.6.2.5204 NMAC is amended to read:

20.6.2.5204 MECHANICAL INTEGRITY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. A Class I [~~non-hazardous waste injection~~] well or Class III well has mechanical integrity if there is no detectable leak in the casing, tubing or packer which the secretary considers to be significant at maximum operating temperature and pressure; and no detectable conduit for fluid movement out of the injection zone through the well bore or vertical channels adjacent to the well bore which the secretary considers to be significant.

B. Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that a Class I [~~non-hazardous waste injection~~] well or Class III well has mechanical integrity. The demonstration shall be made through use of the following tests:

(1) For evaluation of leaks,

(a) Monitoring of annulus pressure (after an initial pressure test with liquid or gas before operation commences), or

(b) Pressure test with liquid or gas;

(2) For determination of conduits for fluid movement,

(a) The results of a temperature or noise log, or

(b) Where the nature of the casing used for Class III wells precludes use of these logs, cementing records and an appropriate monitoring program as the secretary may require which will demonstrate the presence of adequate cement to prevent such movement;

(3) Other appropriate tests as the secretary may require.

C. The secretary may consider the use by the discharger of equivalent alternative test methods to determine mechanical integrity. The discharger shall submit information on the proposed test and all technical data supporting its use. The secretary may approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. For Class III wells this demonstration may be made by submission of adequate monitoring data after the initial mechanical integrity tests.

D. In conducting and evaluating the tests enumerated in this Section or others to be allowed by the secretary, the discharger and the secretary shall apply methods and standards generally accepted in the affected industry. When the discharger reports the results of mechanical integrity tests to the secretary, he shall include a description of the test(s), the method(s) used, and the test results. In making an evaluation, the secretary's review shall include monitoring and other test data submitted since the previous evaluation.

Section 20.6.2.5209 NMAC is amended to read:

20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I [~~non-hazardous waste injection~~] well or a Class III well that meets the requirements of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

B. Prior to abandonment of a well used in a Class I [~~non-hazardous waste injection~~] well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

C. Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

D. Placement of the plugs shall be accomplished by one of the following:

(1) The Balance Method; or

(2) The Dump Bailer Method; or

(3) The Two-Plug Method; or

(4) An equivalent method with the approval of the secretary.

E. The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan.

(1) The type and number of plugs to be used;

(2) The placement of each plug, including the elevation of the top and bottom;

(3) The type, grade and quantity of cementing slurry to be used;

(4) The method of placement of the plugs;

(5) The procedure to be used to plug and abandon the well; and

(6) Such other factors that may affect the adequacy of the plan.

F. The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

Section 20.6.2.5210 NMAC is amended to read:

20.6.2.5210 INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. This Section sets forth the information to be considered by the secretary in authorizing construction and use of a Class I [~~non-hazardous waste injection~~] well or Class III well or well field. Certain maps, cross-sections, tabulations of all wells within the area of review, and other data may be included in the discharge permit application submittal by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

B. Prior to the issuance of a discharge permit or project discharge permit allowing construction of a new Class I [~~non-hazardous waste injection~~] well, operation of an existing Class I [~~non-hazardous waste injection~~] well, or operation of a new or existing Class III well or well field, or conversion of any well to injection use, the secretary shall consider the following:

(1) Information required in Subsection C of Section 20.6.2.3106 NMAC;

(2) A map showing the Class I [~~non-hazardous waste injection~~] well, or Class III well or well fields, for which approval is sought and the applicable area of review. Within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

(3) A tabulation of data on all wells within the area of review which may penetrate into the proposed injection zone. Such data shall include, as available, a description of each well's type, the distance and direction to the injection well or well field, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the secretary may require;

(4) For wells within the area of review which penetrate the injection zone, but are not properly completed or plugged, the corrective action proposed to be taken under Section 20.6.2.5203 NMAC;

(5) Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within the area of review, the position of such ground water within the area of review relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(6) Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(7) Generalized maps and cross-sections illustrating the regional geologic setting;

(8) Proposed operating data, including:

(a) Average and maximum daily flow rate and volume of the fluid to be injected;

(b) Average and maximum injection pressure;

(c) Source of injection fluids and an analysis or description, whichever the secretary requires, of their chemical, physical, radiological and biological characteristics;

(9) Results of the formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation, provided that the secretary may issue a conditional approval of a discharge permit if he finds that further formation testing is necessary for final approval;

(10) Expected pressure changes, native fluid displacement, and direction of movement of the injected fluid;

(11) Proposed stimulation program;

(12) Proposed or actual injection procedure;

(13) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(14) Construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(15) Contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC;

(16) Plans, including maps, for meeting the monitoring requirements of Section 20.6.2.5207 NMAC; and

(17) The ability of the discharger to undertake measures necessary to prevent contamination of ground water having 10,000 mg/l or less TDS after the cessation of operation, including the proper closing, plugging and abandonment of a well, ground water restoration if applicable, and any post-operational monitoring as may be needed. Methods by which the discharger shall demonstrate the ability to undertake these measures shall include submission of a surety bond or other adequate assurances, such as financial statements or other materials acceptable to the secretary, such as: (1) a surety bond; (2) a trust fund with a New Mexico bank in the name of the State of New Mexico, with the State as Beneficiary; (3) a non-renewable letter of credit made out to the State of New Mexico; (4) liability insurance

specifically covering the contingencies listed in this paragraph; or (5) a performance bond, generally in conjunction with another type of financial assurance. Such bond or materials shall be approved and executed prior to discharge permit issuance and shall become effective upon commencement of construction. If an adequate bond is posted by the discharger to a federal or another state agency, and this bond covers all of the measures referred to above, the secretary shall consider this bond as satisfying the bonding requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC wholly or in part, depending upon the extent to which such bond is adequate to ensure that the discharger will fully perform the measures required hereinabove.

C. Prior to the secretary's approval that allows the operation of a new or existing Class I [~~non-hazardous waste injection~~] well or Class III well or well field, the secretary shall consider the following:

(1) Update of pertinent information required under Subsection B of Section 20.6.2.5210 NMAC;

(2) All available logging and testing program data on the well;

(3) The demonstration of mechanical integrity pursuant to Section 20.6.2.5204 NMAC;

(4) The anticipated maximum pressure and flow rate at which the permittee will operate;

(5) The results of the formation testing program;

(6) The physical, chemical, and biological interactions between the injected fluids and fluids in the injection zone, and minerals in both the injection zone and the confining zone; and

(7) The status of corrective action on defective wells in the area of review.

II. Proposed New UIC Class I Hazardous Waste Injection Well Provisions.

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in Sections 20.6.2.5300 through 20.6.2.5399 NMAC, Class I hazardous waste wells are subject to the minimum permit requirements for all Class I wells in Sections 20.6.2.5000 through 20.6.2.5299 NMAC, in addition to the requirements of Sections 20.6.2.5300 through 20.6.2.5399 NMAC. To the extent any requirement in Sections 20.6.2.5300 through 20.6.2.5399 NMAC conflicts with a requirement of Sections 20.6.2.5000 through 20.6.2.5299 NMAC, Class I hazardous waste injection wells must comply with Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

B. Class I hazardous waste injection wells are only authorized for use by petroleum refineries for the waste generated by the refinery ("generator").

C. The New Mexico energy, minerals and natural resources department, oil conservation division will administer and oversee all permitting of Class I hazardous waste wells pursuant to Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

20.6.2.5301 DEFINITIONS: As used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC:

A. "**cone of influence**" means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into groundwater of the State of New Mexico.

B. "**director**" means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee.

C. "**existing well**" means a Class I hazardous waste injection well which has become a Class I hazardous waste injection well as a result of a change in the definition of the injected waste which would render the waste hazardous under Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3).

D. "**groundwater of the State of New Mexico**" means, consistent with Section 20.6.2.5001 NMAC, an aquifer that contains ground water having a TDS concentration of 10,000 mg/l or less.

E. "**injection interval**" means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

F. "**new well**" means any Class I hazardous waste injection well which is not an existing well.

G. "**transmissive fault or fracture**" is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

20.6.2.5302 FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.3114 NMAC.

A. *Filing Fee.* Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a filing fee of $100 to the Water Quality Management Fund at the time the permit application is submitted. The filing fee is nonrefundable.

B. *Permit Fee.*

(1) Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a permit fee of $30,000 to the Water Quality Management Fund. The permit fee may be paid in a single payment at the time of permit approval or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit approval. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit application review

of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) Facilities applying for permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. *Annual Administration Fee.* Every facility that receives a UIC Class I hazardous waste injection well permit shall pay an annual administrative fee of $20,000 to the Water Quality Management Fund. The initial administrative fee shall be remitted one year after commencement of disposal operations pursuant to the permit. Subsequent administrative fees shall be remitted annually thereafter.

D. *Renewal Fee.*

(1) Every facility submitting a discharge permit application for renewal of a UIC Class I hazardous waste injection well shall pay a renewal fee of $10,000 to the Water Quality Management Fund. The renewal fee may be paid in a single payment at the time of permit renewal or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit renewal. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit renewal review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) The Director may waive or reduce fees for discharge permit renewals which require little or no cost for investigation or issuance.

E. *Modification Fees.*

(1) Every facility submitting an application for a discharge permit modification of a UIC Class I hazardous waste injection well will be assessed a filing fee plus a modification fee of $10,000 to the Water Quality Management Fund.

(2) Every facility submitting an application for other changes to a UIC Class I hazardous waste injection well discharge permit will be assessed a filing fee plus a minor modification fee of $1,000 to the Water Quality Management Fund.

(3) Applications for both renewal and modification shall pay a filing fee plus renewal fee.

(4) If the Director requires a discharge permit change as a component of an enforcement action, the facility shall pay the applicable modification fee. If the Director requires a discharge permit change outside the context of an enforcement action, the facility shall not be assessed a fee.

(5) The Director may waive or reduce fees for discharge permit changes which require little or no cost for investigation or issuance.

F. *Financial Assurance Fees.*

(1) Facilities with approved UIC Class I hazardous waste injection well permits shall pay the financial assurance fees specified in Section 20.6.2.3114, Table 2 NMAC.

(2) Facilities relying on the corporate guarantee for financial assurance shall pay an additional fee of $ 5,000 to the Water Quality Management Fund.

20.6.2.5303 CONVERSION OF EXISTING INJECTION WELLS: An existing Class I non-hazardous waste injection well may be converted to a Class I hazardous waste injection well provided the well meets the modeling, design, compatibility, and other requirements set forth in Sections 20.6.2.5300 through 20.6.2.5399 NMAC and the permittee receives a Class I hazardous waste permit pursuant to those Sections.

20.6.2.5304 – 20.6.2.5309: [RESERVED]

20.6.2.5310 REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

A. *Applicability.* The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also Subsection A(3)(b) of Section 20.6.2.5004 NMAC.)

B. *Authorization.* The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for authorization to inject as specified in Section 20.6.2.5102 NMAC within 6 months after the approval or promulgation of the State UIC program.

C. *Requirements.* In addition to complying with the applicable requirements of this Part, the owner or operator of each facility meeting the requirements of Subsection B of this section, shall comply with the following.

(1) *Notification.* The owner or operator shall comply with the notification requirements of 42 U.S.C. § 6930.

(2) *Identification number.* The owner or operator shall comply with the requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.11).

(3) *Manifest system.* The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.71).

(4) *Manifest discrepancies.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.72).

(5) *Operating record.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Sections 264.73(a), (b)(1), and (b)(2)).

(6) *Annual report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(7) *Unmanifested waste report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.16).

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the Director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in Section 20.6.2.5209 NMAC.

20.6.2.5311 – 20.6.2.5319: [RESERVED]

20.6.2.5320 ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS). Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 144, Subpart F [insert current effective date] are hereby incorporated by reference.

20.6.2.5321 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS. Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following terms defined in 40 CFR Section 144.61 have the meanings set forth herein, in lieu of the meaning set forth in 40 CFR Section 144.61:

(1) "plugging and abandonment plan" means the plan for plugging and abandonment prepared in accordance with the requirements of 20.6.2.5341 NMAC.

B. The following terms not defined in 40 CFR Part 144, Subsection F have the meanings set forth herein when the terms are used in this part:

(1) "administrator," "regional administrator" and other similar variations means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

(2) "United States Environmental Protection Agency" or "EPA" means New Mexico energy, minerals and natural resources department, oil conservation division or OCD, except when used in 40 CFR Section 144.70(f).

C. The following provisions of 40 CFR Part 144, Subpart F are modified in Section 20.6.2.5321 NMAC:

(1) cross references to 40 CFR Part 144 shall be replaced by cross references to Sections 20.6.2.5300 through 20.6.2.5399 NMAC

(2) the cross reference to §§ 144.28 and 144.51 in Section 144.62(a) shall be replaced by a cross reference to Section 20.6.2.5341 NMAC;

(3) the cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H shall be modified to include cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H and Sections 20.4.2.500 and 20.4.2.600 NMAC.

(4) references to EPA Identification Numbers in financial assurance documents shall be replaced by references to API Well Numbers (US Well Numbers);

(5) the first sentence of 40 CFR Section 144.63(f)(1) shall be replaced with the following sentence: "An owner or operator may satisfy the requirements of this section by obtaining a guarantee from a corporate parent that meets the requirements of 40 CFR Section 144.63(f)(10), including the guarantor meeting the requirements for the owner or operator under the financial test specified in this paragraph."

(6) trust agreements prepared in accordance with 40 CFR Section 144.70(a) must state that they will be administered, construed, and enforced according to the laws of New Mexico;

(7) surety companies issuing bonds prepared in accordance with 40 CFR Section 144, Subpart F must be registered with the New Mexico Office of Superintendent of Insurance;

D. The following provisions of 40 CFR Part 144, Subpart F are omitted from Section 20.6.2.5320 NMAC:

(1) section 144.65;

(2) section 144.66;

(3) the third sentence in 40 CFR Section 144.63(h);

20.6.2.5322 – 20.6.2.5340 [RESERVED]

20.6.2.5341 CONDITIONS APPLICABLE TO ALL PERMITS: The following conditions apply to all Class I hazardous permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

A. *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the New Mexico Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in a variance issued under Section 20.6.2.1210 NMAC.

B. *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal pursuant to Subpart F of Section 20.6.2.3106 NMAC.

C. *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F. *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

H. *Duty to provide information.* The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

I. *Duty to provide notice.* Public notice, when required, shall be provided as set forth in 20.6.2.3108 NMAC except that the following notice shall be provided in lieu of the notice required by 20.6.2.3108(B)(2):

A written notice must be sent by certified mail, return receipt requested, to all surface and mineral owners of record within a ½ mile radius of the proposed well or wells.

J. *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Sections 20.6.2.5300 through 20.6.2.5399 NMAC, any substances or parameters at any location.

K. *Monitoring and records.*

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(a) calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and

(b) the nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Subsection A(6) of Section 20.6.2.5342 NMAC, or under Sections 20.6.2.5351 through 20.6.2.5363 NMAC as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.

(3) Records of monitoring information shall include:

(a) the date, exact place, and time of sampling or measurements;

(b) the individual(s) who performed the sampling or measurements;

(c) the date(s) analyses were performed;

(d) the individual(s) who performed the analyses;

(e) the analytical techniques or methods used; and

(f) the results of such analyses.

L. *Signatory requirement.* All applications, reports, or information submitted to the Director shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC.)

M. *Reporting requirements—*

(1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(4) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(5) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(a) any monitoring or other information which indicates that any contaminant may cause an endangerment to groundwater of the State of New Mexico; or

(b) any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between groundwater of the State of New Mexico. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the area affected by the noncompliance, including any groundwater of the State of New Mexicor; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; the date and time the permittee became aware of the noncompliance; and steps taken or planned to reduce, remediate, eliminate, and prevent reoccurrence of the noncompliance.

(6) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under Subsections M(3), (4), and (5) of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in Subsection M(5) of this Section.

(7) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

N. *Requirements prior to commencing injection.* A new injection well may not commence injection until construction is complete, and

(1) the permittee has submitted notice of completion of construction to the Director; and

(2) (a) the Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(b) the permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in Subsection N(1) of this Section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

O. The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well.

P. The permittee shall meet the requirements of Section 20.6.2.5209 NMAC.

Q. *Plugging and abandonment report.* Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the Director. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) a statement that the well was plugged in accordance with the plan previously submitted to the Director; or

(2) where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the Director, specifying the differences.

R. *Duty to establish and maintain mechanical integrity.*

(1) The permittee shall meet the requirements of Section 20.6.2.5204 NMAC.

(2) When the Director determines that a Class I hazardous well lacks mechanical integrity pursuant to Section 20.6.2.5204 NMAC, he/she shall give written notice of his/her determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of Section 20.6.2.5209 NMAC or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between groundwater of the State of New Mexico caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to Sections 20.6.2.5204 and 20.6.2.5358 NMAC.

(3) The Director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Subsection A of Section 20.6.2.5204 NMAC to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between groundwater of the State of New Mexico.

S. *Transfer of a permit.* The operator shall not transfer a permit without the Director's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25 percent or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the Director denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after receipt of the notice. Until the Director approves the transfer and the required financial assurance is in place, the Director shall not release the transferor's financial assurance.

20.6.2.5342 ESTABLISHING PERMIT CONDITIONS:

A. In addition to conditions required in Section 20.6.2.5341 NMAC, the Director shall establish conditions, as required on a case-by-case basis under Subsection H of Section 20.6.2.3109 NMAC (duration of permits), Subsection A of Section 20.3.2.5343 NMAC (schedules of compliance), and Section 20.3.2.5344 NMAC. Permits for owners or operators of hazardous waste injection wells shall also include conditions meeting the requirements of Section 20.6.2.5310 NMAC (requirements for wells injecting hazardous waste), Subsections A(1) and A(2) of this section, and Sections 20.6.2.5351 through 20.6.2.5363 NMAC.

(1) *Financial responsibility.*

(a) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:

(i) the well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Subsection O of Section 20.6.2.5341 NMAC, and Section 20.6.2.5209 NMAC, and submitted a plugging and abandonment report pursuant to Subsection P of Section 20.6.2.5341 NMAC; or

(ii) the well has been converted in compliance with the requirements of Subsection N of Section 20.6.2.5341 NMAC; or

(iii) the transferor of a permit has received notice from the Director that the transfer has been approved and that the transferee's required financial assurance is in place.

(b) The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of Section 20.6.2.5320 NMAC.

(2) *Additional conditions.* The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into groundwater of the state of New Mexico.

B. (1) In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of this part.

(2) An applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit.

(3) New or renewed permits, and to the extent allowed under Section 20.6.2.3109 NMAC modified or terminated permits, shall incorporate each of the applicable requirements referenced in Section 20.6.2.5342 NMAC.

C. *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

20.6.2.5343 SCHEDULE OF COMPLIANCE:

A. *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with this part.

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.

(2) *Interim dates.* Except as provided in Subsection B(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(a) The time between interim dates shall not exceed 1 year.

(b) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if Subsection A(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

B. *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows.

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(a) the permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(b) the permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(a) both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(b) one schedule shall lead to timely compliance with applicable requirements;

(c) the second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(d) each permit containing two schedules shall include a requirement that after the permittee has made a final decision under Subsection B(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.

20.6.2.5344 REQUIERMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS: All permits shall specify:

A. requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

B. required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

C. applicable reporting requirements based upon the impact of the regulated activity and as specified in Section 20.6.2.5359 NMAC. Reporting shall be no less frequent than specified in the above regulations.

20.6.2.5345 – 20.6.2.5350: [RESERVED]

20.6.2.5351 APPLICABILITY: Sections 20.6.2.5351 through 20.6.2.5363 NMAC establish criteria and standards for underground injection control programs to regulate Class I hazardous waste injection wells. Unless otherwise noted in these Sections supplement the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC and apply instead of any inconsistent requirements for Class I non-hazardous waste injection wells.

20.6.2.5352 MINIMUM CRITERIA FOR SITING:

A. All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore groundwater of the State of New Mexico.

B. The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The Director shall determine geologic suitability based upon:

(1) an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

(3) a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

C. Class I hazardous waste injection wells shall be sited such that:

(1) the injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into groundwater of the State of New Mexico; and

(2) the confining zone:

(a) is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into groundwater of the State of New Mexico; and

(b) contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

D. The owner or operator shall demonstrate to the satisfaction of the Director that:

(1) the confining zone is separated from the base of the lowermost groundwater of the State of New Mexico by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for groundwater of the State of New Mexico in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost groundwater of the State of New Mexico, considering density effects, injection pressures and any significant pumping in the overlying groundwater of the State of New Mexico; or

(3) there is no groundwater of the State of New Mexico present.

(4) The Director may approve a site which does not meet the requirements in Subsections D (1), (2), or (3) of this section if the owner or operator can demonstrate to the Director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of groundwater of the State of New Mexico.

20.6.2.5353 AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5202 NMAC. The area of review for Class I hazardous waste injection wells shall be a 2-mile radius around the well bore. The Director may specify a larger area of review based on the calculated cone of influence of the well.

20.6.2.5354 CORRECTIVE ACTION FOR WELLS IN THE AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5203 NMAC.

A. The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the Director outlining the protocol used to:

(1) identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) determine whether wells are adequately completed or plugged.

B. The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in Subsection A of Section 20.6.2.5360 NMAC:

(1) a tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) a description of each well or type of well and any records of its plugging or completion.

C. For wells that the Director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modification as are necessary to prevent movement of fluids into or between groundwater of the State of New Mexico. Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in Subsection E of this section), the Director shall:

(1) require the applicant to revise the plan;

(2) prescribe a plan for corrective action as a condition of the permit; or

(3) deny the application.

D. Requirements:

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under Subsection C of this section. Any such compliance schedule shall provide for compliance no later than 2 years following issuance of the permit and shall require observance of appropriate pressure limitations under Subsection D(3) until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The Director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the Director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between groundwater of the State of New Mexico. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

E. In determining the adequacy of corrective action proposed by the applicant under Subsection C of this section and in determining the additional steps needed to prevent fluid movement into and between groundwater of the State of New Mexico, the following criteria and factors shall be considered by the Director:

(1) nature and volume of injected fluid;

(2) nature of native fluids or byproducts of injection;

(3) geology;

(4) hydrology;

(5) history of the injection operation;

(6) completion and plugging records;

(7) closure procedures in effect at the time the well was closed;

(8) hydraulic connections with groundwater of the State of New Mexico;

(9) reliability of the procedures used to identify abandoned wells; and

(10) any other factors which might affect the movement of fluids into or between groundwater of the State of New Mexico.

20.6.2.5355 CONSTRUCTION REQUIREMENTS:

A. *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) prevent the movement of fluids into or between groundwater of the State of New Mexico or into any unauthorized zones;

(2) permit the use of appropriate testing devices and workover tools; and

(3) permit continuous monitoring of injection tubing and long string casing as required pursuant to Subsection F of Section 20.6.2.5357 NMAC.

B. *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM, or comparable standards acceptable to the Director.

C. *Casing and Cementing of New Wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between groundwater of the State of New Mexico, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the Director shall consider the following information as required by Section 20.6.2.5360 NMAC:

(a) depth to the injection zone;

(b) injection pressure, external pressure, internal pressure and axial loading;

(c) hole size;

(d) size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification and construction material);

(e) corrosiveness of injected fluid, formation fluids and temperature;

(f) lithology of injection and confining zones;

(g) type or grade of cement; and

(h) quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains groundwater of the State of New Mexico and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The Director may require more than 120% when the geology or other circumstances warrant it.

(3) At least one long string casing, using a sufficient number of centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(a) of sufficient quantity and quality to withstand the maximum operating pressure; and

(b) in a quantity no less than 120% of the calculated volume necessary to fill the annular space. The Director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(a) the maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(b) the maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

D. *Tubing and packer.*

(1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the Director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(a) depth of setting;

(b) characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(c) injection pressure;

(d) annular pressure;

(e) rate (intermittent or continuous), temperature and volume of injected fluid;

(f) size of casing; and

(g) tubing tensile, burst, and collapse strengths.

(3) The Director may approve the use of a fluid seal if he determines that the following conditions are met:

(a) the operator demonstrates that the seal will provide a level of protection comparable to a packer;

(b) the operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(c) the permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(d) the design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(e) a secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

20.6.2.5356 LOGGING, SAMPLING, AND TESTING PRIOR TO NEW WELL OPERATION:

A. During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in Section 20.6.2.5355 NMAC, and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the Director. At a minimum, such logs and tests shall include:

(1) deviation checks during drilling on all holes constructed by drilling pilot holes which are enlarged by reaming or another method. Such checks shall be at sufficiently

frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(2) such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses. At a minimum, the following logs shall be required in the following situations:

(a) upon installation of the surface casing:

(i) resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(ii) a cement bond and variable density log, and a temperature log after the casing is set and cemented;

(b) upon installation of the long string casing:

(i) resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(ii) as cement bond and variable density log, and a temperature log after the casing is set and cemented.

(c) The Director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) a mechanical integrity test consisting of:

(a) a pressure test with liquid or gas;

(b) a radioactive tracer survey;

(c) a temperature or noise log;

(d) a casing inspection log, if required by the Director; and

(e) any other test required by the Director.

B. Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The Director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.

C. The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

D. At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) fracture pressure;

(2) other physical and chemical characteristics of the injection and confining zones; and

(3) physical and chemical characteristics of the formation fluids in the injection zone.

E. Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(1) a pump test; or

(2) injectivity tests.

F. The Director shall have the opportunity to witness all logging and testing required by Sections 20.6.2.5351 through 5363 NMAC. The owner or operator shall submit a schedule of such activities to the Director 30 days prior to conducting the first test.

20.6.2.5357 OPERATING REQUIREMENTS:

A. Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into groundwater of the State of New Mexico.

B. Injection between the outermost casing protecting groundwater of the State of New Mexico and the well bore is prohibited.

C. The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the Director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

D. The owner or operator shall maintain mechanical integrity of the injection well at all times.

E. Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) conditions limiting the temperature, pH or acidity of the injected waste; and

(2) procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

F. The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the Director exceed a range and/or gradient specified in the permit; or

(2) automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the Director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

G. If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under Subsection F of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) cease injection of waste fluids unless authorized by the Director to continue or resume injection;

(2) take all necessary steps to determine the presence or absence of a leak; and

(3) notify the Director within 24 hours after the alarm or shutdown.

H. If a loss of mechanical integrity is discovered pursuant to Subsection G of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) immediately cease injection of waste fluids;

(2) take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(3) notify the Director within 24 hours after loss of mechanical integrity is discovered;

(4) notify the Director when injection can be expected to resume; and

(5) restore and demonstrate mechanical integrity to the satisfaction of the Director prior to resuming injection of waste fluids.

I. Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(1) the owner or operator shall immediately case injection of waste fluids, and:

(a) notify the Director within 24 hours of obtaining such evidence;

(b) take all necessary steps to identify and characterize the extent of any release;

(c) comply with any remediation plan specified by the Director;

(d) implement any remediation plan approved by the Director; and

(e) where such release is into groundwater of the State of New Mexico currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The Director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger groundwater of the State of New Mexico.

J. The owner or operator shall notify the Director and obtain his approval prior to conducting any well workover.

20.6.2.5358 TESTING AND MONITORING REQUIREMENTS: Testing and monitoring requirements shall at a minimum include:

A. Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(a) the parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(b) the test methods that will be used to test for these parameters; and

(c) the sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the Director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

B. Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the Director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in Section 20.6.2.5352 NMAC.

C. Compatibility of well materials.

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the Director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under Subsection B of Section 20.6.2.5355 NMAC.

(2) The Director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(a) placing coupons of the well construction materials in contact with the waste stream; or

(b) routing the waste stream through a loop constructed with the material used in the well; or

(c) using an alternative method approved by the Director.

(3) If a corrosion monitoring program is required:

(a) the test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation; and

(b) the owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in Subsection B of Section 20.6.2.5355 NMAC.

D. *Periodic mechanical integrity testing.* In fulfilling the requirements of Section 20.6.2.5204 NMAC, the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

(1) the long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) the bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) an approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole. The Director may require such tests whenever the well is worked over;

(4) casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The Director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) any other test approved by the Director in accordance with the procedures in 40 CFR Section 146.8(d) may also be used.

E. *Ambient monitoring.*

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring program. At a minimum, the Director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the Director may also require:

(a) continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the Director;

(b) the use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the Director, or to provide other site specific data;

(c) periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(d) periodic monitoring of the ground water quality in the lowermost groundwater of the State of New Mexico; and

(e) any additional monitoring necessary to determine whether fluids are moving into or between groundwater of the State of New Mexico.

F. The Director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

20.6.2.5359 REPORTING REQUIREMENTS: Reporting requirements shall, at a minimum, include:

A. Quarterly reports to the Director containing:

(1) the maximum injection pressure;

(2) a description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) a description of any event which triggers an alarm or shutdown device required pursuant to Subsection F of Section 20.6.2.5357 NMAC and the response taken;

(4) the total volume of fluid injected;

(5) any change in the annular fluid volume;

(6) the physical, chemical and other relevant characteristics of injected fluids; and

(7) the results of monitoring prescribed under Section 20.6.2.5358 NMAC.

B. Reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

(1) periodic tests of mechanical integrity;

(2) any other test of the injection well conducted by the permittee if required by the Director; and

(3) any well workover.

20.6.2.5360 INFORMATION TO BE EVALUATED BY THE DIRECTOR: This section sets forth the information which must be evaluated by the Director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application

by reference provided they are current and readily available to the Director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved.

A. Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the Director shall review the following to assure that the requirements of Sections 20.6.2.5000 through 20.6.2.5399 NMAC are met:

(1) information required in Section 20.6.2.5102 NMAC;

(2) a map showing the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads. The map should also show faults, if known or suspected;

(3) a tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the Director may require;

(4) the protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) maps and cross-sections indicating the general vertical and lateral limits of all groundwater of the State of New Mexico within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each groundwater of the State of New Mexico which may be affected by the proposed injection;

(6) maps and cross-sections detailing the geologic structure of the local area;

(7) maps and cross-sections illustrating the regional geologic setting;

(8) proposed operating data;

(a) average and maximum daily rate and volume of the fluid to be injected; and

(b) average and maximum injection pressure;

(9) proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) proposed stimulation program;

(11) proposed injection procedure;

(12) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any groundwater of the State of New Mexico;

(14) plans (including maps) for meeting monitoring requirements of Section 20.6.2.5358 NMAC;

(15) for wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under Section 20.6.2.5354 NMAC;

(16) construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) a demonstration pursuant to Section 20.6.2.5320 NMAC, that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

B. Prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the Director shall review the following information, which shall be included in the completion report:

(1) all available logging and testing program data on the well;

(2) a demonstration of mechanical integrity pursuant to Section 20.6.2.5358 NMAC;

(3) the anticipated maximum pressure and flow rate at which the permittee will operate;

(4) the results of the injection zone and confining zone testing program as required in Subsection A(9) of Section 20.6.2.5360 NMAC;

(5) the actual injection procedure;

(6) the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

(7) the calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Subsections A(2) and (3) of Section 20.6.2.5360 NMAC;

(8) the status of corrective action on wells identified in Subsection A(15) of Section 20.6.2.5360 NMAC; and

(9) evidence that the permittee has obtained an exemption under 40 C.F.R. Part 148, Subpart C for the hazardous wastes permitted for disposal through underground injection.

C. Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the Director shall review the information required in Subsection A(4) of Section 20.6.2.5361 NMAC and Subsection A of Section 20.6.2.5362 NMAC.

D. Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

(1) the generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

20.6.2.5361 CLOSURE:

A. *Closure Plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of Subsection D of this section and is acceptable to the Director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the Director no later than the date on which notice of closure is required to be submitted to the Director under Subsection B of this section.

(3) The plan shall assure financial responsibility as required in Subsection A(7) of Section 20.6.2.5342 NMAC.

(4) The plan shall include the following information:

(a) the type and number of plugs to be used;

(b) the placement of each plug including the elevation of the top and bottom of each plug;

(c) the type and grade and quantity of material to be used in plugging;

(d) the method of placement of the plugs;

(e) any proposed test or measure to be made;

(f) the amount, size, and location (by depth) of casing and any other materials to be left in the well;

(g) the method and location where casing is to be parted, if applicable;

(h) the procedure to be used to meet the requirements of Subsection D(5) of this section;

(i) the estimated cost of closure; and

(j) any proposed test or measure to be made.

(5) The Director may modify a closure plan following the procedures of Section 20.6.2.3109 NMAC.

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(a) has received authorization from the Director; and

(b) has described actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger groundwater of the State of New Mexico during the period of temporary disuse. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the Director 30 days prior to resuming operation of the well.

B. *Notice of intent to close.* The owner or operator shall notify the Director at least 60 days before closure of a well. At the discretion of the Director, a shorter notice period may be allowed.

C. *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the Director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

(1) a statement that the well was closed in accordance with the closure plan previously submitted and approved by the Director; or

(2) where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

D. *Standards for well closure.*

(1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the Director. The Director shall analyze the pressure decay and the transient pressure observations conducted pursuant to Subsection E(1)(i) of Section 20.6.2.5358 NMAC and determine whether the injection activity has conformed with predicted values.

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(a) pressure tests with liquid or gas;

(b) radioactive tracer surveys;

(c) noise, temperature, pipe evaluation, or cement bond logs; and

(d) any other test required by the Director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between groundwater of the State of New Mexico.

(5) Placement of the cement plugs shall be accomplished by one of the following:

(a) the Balance Method;

(b) the Dump Bailer Method;

(c) the Two-Plug Method; or

(d) an alternate method, approved by the Director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).

20.6.2.5362 POST-CLOSURE CARE:

A. The owner or operator of a Class I hazardous waste well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of Subsection B of this section and is acceptable to the Director. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under Subsection C of Section 20.6.2.5361 NMAC.

(3) The plan shall assure financial responsibility as required in Section 20.6.2.5363 NMAC.

(4) The plan shall include the following information:

(a) the pressure in the injection zone before injection began;

(b) the anticipated pressure in the injection zone at the time of closure;

(c) the predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico;

(d) predicted position of the waste front at closure;

(e) the status of any cleanups required under Section 20.6.2.5354 NMAC; and

(f) the estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the Director may modify the post-closure plan after submission of the closure report following the procedures in Section 20.6.2.3109 NMAC.

B. The owner or operator shall:

(1) Continue and complete any cleanup action required under Section 20.6.2.5354 NMAC, if applicable.

(2) Continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico. The

Director may extend the period of post-closure monitoring if he determines that the well may endanger groundwater of the State of New Mexico.

(3) Submit a survey plat to the local zoning authority designated by the Director. The plat shall indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat shall be submitted to the Director.

(4) Provide appropriate notification and information to such State and local authorities as have cognizance over drilling activities to enable such State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone.

(5) Retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids. The Director shall require the owner or operator to deliver the records to the Director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the Director for that purpose.

C. Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) the fact that land has been used to manage hazardous waste;

(2) the name of the State agency or local authority with which the plat was filed, as well as the address of the Director;

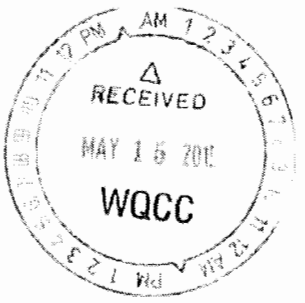
(3) the type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

20.6.2.5363 FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE: The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in Section 20.6.2.5320 NMAC, The amount of the funds available shall be no less than the amount identified in Subsection A(4)(vi) of Section 20.6.2.5362 NMAC. The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

20.6.2.5364 – 20.6.2.5399: [RESERVED]

APPENDIX – G11

PROCEDURAL ORDER



STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT

In the Matter of:
PROPOSED AMENDMENT **WQCC 14-15 (R)**
To 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

PROCEDURAL ORDER

A. HEARING DATE & LOCATION

a. The public hearing will be held on July 14 and 15, 2015 at the Artesia City Hall Chambers, located at 511 W. Texas Ave., Artesia, NM, 88210. The hearing will begin at 9:00 a.m. and conclude at 5:00 p.m. In the event more time is needed, the hearing will continue the next day in the same location beginning at 9:00 a.m.

b. All deadlines set forth below are designed to provide the Hearing Officer with the legal argument and pre-filed technical testimony necessary to begin the hearing on July 14, 2015 and to proceed efficiently until the conclusion of the hearing. The Hearing Officer, Administrator, and counsel of record participated in a teleconference on May 7, 2015, to agree to the deadlines below.

B. FILING AND SERVICE OF DOCUMENTS

a. The filing of any document as required by this Order shall be accomplished by delivering the document to the Commission Administrator ("Administrator"), Pam Castaneda, located at 1190 St. Francis Dr., Suite S-2102, Santa Fe, New Mexico 87502; Telephone: (505) 827-2425. E-mail: pam.castaneda@state.nm.us

b. Any person filing any document shall:

i. Serve a copy thereof on the New Mexico Environment Department ("Department") and on all persons filing an entry of appearance or other pleading (collectively "Parties"), not including those who submit only written public comment.

ii. The original document filed with the Administrator must be single-sided; copies may be double-sided.

c. Wherever these guidelines require service of a document, service shall be made by delivering a copy of the document to the person to be served or by mailing it to that person. If a person is represented by an attorney, service of the document shall be made on the attorney. Service by mail is complete upon mailing the document. "Mail" may include electronic transmission if a Party has provided an e-mail address for that purpose. Service on the Administrator shall be deemed to be accomplished upon receipt of the document by the Administrator.

C. NOTICE OF HEARING

a. Public notice of the hearing shall be given at least 30 days prior to the hearing pursuant to Water Quality Control Commission Guidelines, Section 302.

D. PARTICIPATION BY GENERAL PUBLIC

a. Any member of the general public may present non-technical testimony and exhibits at the hearing. No prior notification shall be required.
b. A member of the general public may submit to the Administrator a written non-technical statement for the record in lieu of oral testimony at any time prior to the close of the hearing.

E. TECHNICAL TESTIMONY

a. In order to present technical testimony at the hearing, a Party must file a notice of intent to present technical testimony no later than 5 p.m. June 15, 2015. The notice shall:
    i. Identify the person or entity for whom the witness (es) will testify;
    ii. Identify each technical witness the person intends to present and state the qualifications of that witness, including a description of their educational and work background;
    iii. Attach the full direct testimony of each technical witness, which shall include an express basis for all expert opinions offered;
    iv. Include the text of any recommended modifications to the proposed regulatory change; and
    v. Identify and attach all exhibits to be offered by the person at the hearing.
b. In order to present technical testimony rebutting the testimony of another Party at the hearing, a person must file a notice of intent to present rebuttal testimony no later than 5 p.m. on June 29, 2015. The notice shall comply with the requirements set out above in Section E(a). In addition, if a Party takes a position on proposed changes to the Petition by other Parties, i.e., either supports or opposes changes to the Petition, the notice shall also include the basis for that support or opposition.
c. The Hearing Officer shall enforce Section E(a) through the exclusion of technical testimony or exhibits, as applicable.
d. At the hearing, persons presenting technical testimony shall not read their full, pre-filed testimony but shall adopt it under oath and may present a brief summary prior to standing for cross-examination.

F. CONDUCT OF HEARINGS

a. The rules of civil procedure and the rules of evidence shall not apply, but may be looked upon for guidance.
b. The Hearing Officer shall conduct the hearing so as to provide a reasonable opportunity for all persons to be heard without making the hearing unreasonably lengthy or cumbersome or burdening the record with unnecessary repetition. The hearing shall proceed as follows:
    i. The hearing shall begin with an opening statement from the Hearing Officer. The statement shall identify the nature and subject matter of the hearing and explain the procedures to be followed.

ii. Parties filing a notice of intent to present technical testimony may make an opening statement.
iii. Each Party will present its case; Cross examination by panel is allowed.
iv. The Parties shall present any rebuttal testimony in the same order.
v. The Parties may present surrebuttal testimony at the discretion of the Hearing Officer.
vi. The Hearing Officer shall provide an opportunity for testimony from members of the general public. Specifically, the Hearing Officer will provide an opportunity for public comment once all of the parties have concluded their cases. The public may also comment during appropriate breaks in testimony, as determined by the Hearing Officer.
vii. Members of the general public who wish to present testimony shall indicate their intent on a sign-in sheet provided by the Administrator.
viii. At the close of the hearing, the Hearing Officer shall announce that the record is closed.

G. TESTIMONY AND CROSS EXAMINATION

a. All testimony and public comment will be taken under oath or affirmation.
b. The Hearing Officer shall admit any relevant evidence, unless the Hearing Officer determines that the evidence is incompetent or unduly repetitious.
c. Any person who testifies at the hearing shall be subject to cross-examination on the subject matter of the direct testimony and any matter affecting the witness's credibility. Any person at the hearing may conduct cross-examination as may be required for a full and true disclosure of matters at the hearing. The Hearing Officer may limit cross-examination to avoid harassment, intimidation, needless expenditure of time, or undue repetition.

H. EXHIBITS

a. Any person offering an exhibit at the hearing that was not appended to a notice of intent shall provide at least one copy for every other Party and the Hearing Officer.
b. All exhibits shall be marked with a designation identifying the person offering the exhibit and shall be numbered or lettered sequentially.
c. Exhibits consisting of large charts, diagrams, models, or other bulky objects are discouraged, but persons may use such demonstrative aids and may submit smaller versions as exhibits for the record. If visual aids (e.g., overhead projections and PowerPoint presentations) are used, legible copies shall be submitted for the record. If demonstrative exhibits, including PowerPoint presentations, are based on technical testimony, said exhibits must be timely filed pursuant to above Sections E(a) and E(b).

I. TRANSCRIPT OF PROCEEDING

a. The petitioner will pay for the preparation of the transcript that is the official record of the proceeding.
b. Any person desiring a copy of the transcript may obtain a copy at his or her own cost, or may review the copy of the transcript maintained by the Administrator.

J. POST HEARING SUBMISSIONS

a. The Hearing Officer will allow the Parties to submit written closing argument and proposed statement of reasons following receipt of the final transcript.

K. DELIBERATION AND DECISION

a. The Commission may attend any part or all of the hearing.
b. The Commission will issue its decision on the proposed changes in a suitable format, which shall include its statement of reasons for the action taken.
c. The Commission's written decision and statement of reasons shall be the official version of the Commission's action.

M. J. C.

Morris J. Chavez
Hearing Officer

STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT

In the Matter of:
PROPOSED AMENDMENT **WQCC 14-15 (R)**
To 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Procedural Order has been served via e-mail, regular U.S. mail and hand-delivered to the following parties on May 15, 2015.

Larry P. Ausherman
Christina C. Sheehan
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
P.O. Box 2168
Albuquerque, New Mexico 87103
Email: ccs@modrall.com
Attorneys for Navajo Refining Company, Inc.

Andrew Knight
Assistant General Counsel
Office of General Counsel
NM Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502-6110
Email: Andrew.knight@state.nm.us

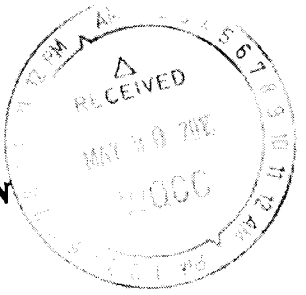
Bill Brancard
NM Energy, Minerals and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us

Wade Jackson, General Counsel
NM Economic Development Department
Joseph Montoya Building
1100 S. St. Francis Drive
Santa Fe, New Mexico 87505
Wade.Jackson@state.nm.us
Counsel for the Commission

Pam Castañeda
Harold Runnels Bldg., Rm. S-2100
1190 St. Francis Drive
Santa Fe, New Mexico 87505
(505) 827-2425
(505) 827-2818 Fax

APPENDIX – G12

NOTICE OF WITHDRAWAL & SUBSTITUTION OF COUNSEL, ENTRY OF APPEARANCE & REQUEST FOR SERVICE LIST AMENDMENT



STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER TO AMEND 20.6.2.3000 AND 20.6.2.5000 NMAC

No. WQCC 14-15 (R)

NOTICE OF WITHDRAWAL AND SUBSTITUTION OF COUNSEL, ENTRY OF APPEARANCE AND REQUEST FOR SERVICE LIST AMENDMENT

Navajo Refining Company, L.L.C. ("Navajo") hereby files this Notice of Withdrawal, Entry of Appearance, and Substitution of Counsel and Request for Service List Amendment in the above referenced matter. Larry P. Ausherman of Modrall, Sperling, Roehl, Harris & Sisk, P.A. ("Modrall Sperling Law Firm") hereby withdrawals as counsel for Navajo, and Paul T. Halajian of the Modrall Sperling Law Firm hereby enters his appearance on behalf of Navajo.

In addition, Roger R. Martella, Jr., Timothy K. Webster, and Joel F. Visser of Sidley Austin LLP hereby enter their appearance on behalf of Navajo and will associate with the Modrall Sperling Law Firm in this matter. Further, Navajo requests the service list be amended as follows:

Service to Navajo by email to the following:

Paul T. Halajian at pth@modrall.com

Christina C. Sheehan at ccs@modrall.com

Roger Martella, Jr. at rmartella@sidley.com

Timothy Webster at twebster@sidley.com

Joel Visser at jvisser@sidley.com

Service to Navajo by regular mail to the following:

Paul T. Halajian
Christina C. Sheehan
Modrall Sperling

P.O. Box 2168
Albuquerque, NM 87103-2168

Roger Martella, Jr.
Timothy Webster
Joel Visser
Sidley Austin, LLP
1501 K Street, N.W.
Washington, DC 20005

Respectfully submitted this 20th day of May, 2015,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: *Christina C. Sheehan*
Christina C. Sheehan
P.O. Box 2168
Albuquerque, NM 87103-2168
Telephone: (505) 848-1850
Facsimile: (505) 848-9710
ccs@modrall.com
Attorneys for Navajo Refinery Company

WE HEREBY CERTIFY that a true and correct copy of the foregoing was mailed/emailed to the following on the 20th day of May, 2015:

Pam Castañeda
Administrator
New Mexico Water Quality Control Commission
1190 South Saint Francis Drive, S-2102
Santa Fe, New Mexico 87502
Email: Pam.Castañeda@state.nm.us

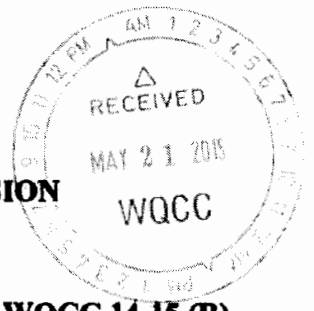
Bill Brancard
New Mexico Energy, Minerals, and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us

Andrew Knight
Assistant General Counsel
Office of General Counsel
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502-6110
Email: Andrew.knight@state.nm.us

Wade Jackson
General Counsel
New Mexico Economic Development Department
Joseph Montoya Building
1100 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Wade.jackson@state.nm.us
Counsel for the Commission

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: */s/ Christina C. Sheehan*
Christina C. Sheehan
Y:\dox\client\81108\0118\PLEADING\W2448798.DOCX



STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

In the Matter of:
PROPOSED AMENDMENT **WQCC 14-15 (R)**
To 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

SECOND NOTICE OF SERVICE LIST

I hereby certify that this Second Notice of Service List shows a complete listing of the parties of record in this matter as of May 21, 2015.

For Navajo Refining Company, Inc.:

Paul T. Halajian
Christina C. Sheehan
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
P.O. Box 2168
Albuquerque, New Mexico 87103
Email: pth@modrall.com
Email: ccs@modrall.com

Attorneys for Navajo Refining Company, Inc.

Roger Martella, Jr.
Timothy Webster
Joel Visser
Sidley Austin LLP
1501 K Street, N.W.
Washington, D.C. 20005
Email: rmartella@sidley.com
Email: twebster@sidley.com
Email: jvisser@sidley.com

For the New Mexico Environment Department:

Andrew Knight
Assistant General Counsel
Office of General Counsel
NM Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502-6110
Email: Andrew.knight@state.nm.us

For the New Mexico Energy, Minerals and Natural Resources Department:

Bill Brancard
General Counsel
New Mexico Energy, Minerals and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us

Counsel for the Commission:

Wade Jackson
General Counsel
NM Economic Development Department
Joseph Montoya Building
1100 S. St. Francis Drive
Santa Fe, New Mexico 87505
Email: Wade.Jackson@state.nm.us

Pam Castañeda

Pam Castañeda
Commission Administrator
Harold Runnels Bldg., Rm. S-2100
1190 St. Francis Drive
Santa Fe, New Mexico 87505
(505) 827-2425
(505) 827-2818 Fax

New Mexico Register / Volume XXVI, Issue 9 / May 14, 2015

Notice Of Public Hearing To Consider Proposed Amendments To The Underground Injection Control Rules, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the New Mexico State Capitol Building, Room 307, 409 Old Santa Fe Trail, Santa Fe, New Mexico to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing must be received by the Office of the Commission Administrator by 5:00 pm on June 30, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

AFFIDAVIT OF LEGAL PUBLICATION

LEGAL # 27229

Copy of Publication

STATE OF NEW MEXICO
COUNTY OF CURRY:

The undersigned, being duly sworn, says:
That she is a Legal Clerk of
The CLOVIS NEWS JOURNAL, a daily
Newspaper of general circulation,
published in English at Clovis,
said county and state, and that the
hereto attached

NOTICE OF PUBLIC HEARING
LEGAL 27229 MAY 15, 2015

was published in said CLOVIS NEWS JOURNAL,
a daily newspaper duly
qualified for that purpose within
the meaning of Chapter 167 of the
1937 Session Laws of the State of
New Mexico for 1 consecutive
days/weeks on the same days as follows:

05/15/2015

Tammy Dewbre
Legal Clerk

Subscribed and sworn to before me
15th day of May, 2015

Notary Public

OFFICIAL SEAL
LESLIE NAGY
NOTARY PUBLIC STATE OF NEW MEXICO
My commission expires

My Commission Expires: 05/24/2015

LEGAL 27229
May 18, 2015

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the New Mexico State Capitol Building, Room 307, 409 Old Santa Fe Trail, Santa Fe, New Mexico to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority (Primacy) from the United States Environmental Protection Agency (EPA) to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would: (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrators office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015. A DRAFT COPY OF THE PROPOSAL MAY BE OBTAINED BY CONTACTING MS. CASTAÑEDA AT THE ABOVE ADDRESS OR BY TELEPHONE AT 505-827-2425 OR PAM.CASTANEDA@STATE.NM.US. PUBLIC DOCUMENTS CAN BE PROVIDED IN VARIOUS ACCESSIBLE FORMATS. CONTACT PAM CASTAÑEDA IF ACCESSIBLE FORMAT IS NEEDED.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commissions Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 16, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en el Edificio Capitolio del Estado de Nuevo México, Sala 307, 409 Old Santa Fe Trail, Santa Fe, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley del Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución (Primacía) de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el tema de la vista del 14 de julio del 2015 procurarían modificar ciertas partes de aquellos reglamentos que rigen los pozos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los pozos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar pozos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de pozos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua aprueba los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que deseen presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015, y deberán citar con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán citar con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

Todos los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102, Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de 2 Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentar-

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
May 16, 2015
and ending with the issue dated
May 16, 2015.

Publisher

Sworn and subscribed to before me this 16th day of May 2015.

Business Manager

My commission expires
January 29, 2019
(Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-19

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE
May 16, 2015

NEW MEXICO WATER QUALITY CONTROL COMMISSION
NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 514 West Texas Avenue, Artesia, New Mexico, 88210, to consider proposed amendments to the New Mexico Water Quality Act rules; 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate, and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address, reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO
AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen, y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible al 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

#30037

Affidavit of Publication

STATE OF NEW MEXICO
) SS
COUNTY OF MCKINLEY

Stacey Fruchey being duly sworn upon oath, deposes and says:

As LEGAL CLERK of The Independent, a newspaper published in and having a general circulation in McKinley County, New Mexico and in the City of Gallup, New Mexico and having a general circulation in Cibola County, New Mexico and in the City of Grants, New Mexico and having a general circulation in Apache County, Arizona and in the City of St. Johns and in the City of Window Rock, Arizona therein: that this affiant makes the affidavit based upon personal knowledge of the facts herein sworn to. That the publication, a copy of which is hereto attached was published in said newspaper during the period time of publication and said notice was published in the newspaper proper, and not in a supplement thereof, for One Time, the first publication being on the _____ day of _____, 2015, the second publication being on the _____ day of _____, 2015, the third publication being on the _____ day of _____, 2015,

and the last publication being on the 16th day of May, 2015. That such newspaper, in which such notice or advertisement was published, is now and has been at all times material hereto, duly qualified for such purpose, and to publish legal notices and advertisements within the meaning of Chapter 12, of the statutes of the State of New Mexico, 1941 compilation,

Stacey Fruchey
Affiant.

Sworn and Subscribed to before me this 16th day of May, A.D., 2015.

Notary Public

My commission expires:
August 27th, 2017.

uest a copy of the Proposal package information on Human Preference, FP receipt.

ublished in The In- 6 & 19, 2015.

, NOTICE
Kinley County
Mexico

NOTICE of
Y DISPOSAL of
OUS WASTE
tanza Army
Depot Activity
Gallup, Historic
, New Mexico
ermit No.
3820974.

tico Environment
Hazardous Waste
3)) has granted
orization for the
AN M66A2 2,000
ise bomb, discov-
nup activities of
Waste Management
gate Depot Activ-
Cleanup activities
g at FWDA since
esource Conserva-
ery Act (RCRA)
320974) issued by

, which contains
the explosive Tri-
TNT and 20 per-
powder), will be
controlled detona-
osal will occur
-owned parcel at
y-trained Unex-
Technicians will
and complete the
Approved engi-
will be employed
t and fragments
the detonation.
placed at access
nce of at least
the disposal area
zed persons will
The public will
(i.e., explosion)
ring the disposal

mined that this
cessary to safely
mb (a form of
in order to pre-
an emergency.
uthorization was
e RCRA permit
for disposal of
nds of explosive

planned for May
te dates for the
y 21, May 27,

formation about
authorization,

District

5102

Building 1
Santa Fe, New Mexico 87505-6303 or phone (505) 476-6055.

Legal# 15947 Published in The Independent May 16, 2015.

LEGAL NOTICE
Gallup - McKinley County
New Mexico

NEW MEXICO WATER QUALITY CONTROL COMMISSION
NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would: (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the proposals, received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

Legal# 15954 Published in The Independent May 16, 2015.

LEGAL NOTICE
Gallup - McKinley County
New Mexico

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO
AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

viduos pueden hacerlo por cuenta propia. Si requiere esta información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia al número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 15 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 o Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

NOTICE
vajo County
ona

R PROPOSAL
MENT AUDIT
VICE

Housing Author-
requesting state-
ions and fee pro-
rizona Licensed
ssist the HTHA
ervices for FY
ed firm will enter
e contract with
k to be performed
is subject to the
Housing Assis-
Determination Act
DA) (25 U.S.C.
ion 7 (b) of the
termination, and
ance Act (25
ection 7 (b) re-
test extent feasi-

proposals is open
and Non-Indian
act Felicia Yaiva
or submit a Let-
by fax (928)

Richard Cruz
Fort Wingate Army Depot
7 Miles east of Gallup, on Historic Hwy 66, Building 1
Fort Wingate, NM 87316
(505) 862-2416

Mark Patterson
FWDA BRAC Environmental Coordinator
Ravenna Army Ammunition Plant
Building 1037
8451 State Route 5
Ravenna, Ohio 44266
(330) 358-7312

Ben Wear
Hazardous Waste Bureau
New Mexico Environment Department
905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
(505) 476-6041

Dave Cobrain
New Mexico Environment Department
Hazardous Waste Bureau
905 Rodeo Park Drive East,

cedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony must

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua aprueba los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102, Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que indi-

Silver City Daily Press and Independent

P.O. Box 1371

Silver City, NM 88062

(575) 388-1576

INVOICE FOR PUBLICATION OF LEGAL NOTICE

Modrall Sperling
Attn: Julie J. Rael, CLA
PO Box 2168
Albuquerque, NM 87103-2168

Date:	Description:	PO#	Lines:	Price/Line:	Total:
5/16/2015	La Comision de Control de Calidad de Agua		184	$0.63	$115.92
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00

Sub Total:	$115.92
Tax:	$8.98
Grand Total:	$124.90

Please include top portion with payment to ensure proper credit.

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF GRANT] S S

Nickolas C. Seibel, being first duly sworn, on his oath says: That he is the publisher of the Silver City Daily Press and Independent, a newspaper published in the Town of Silver City, in the County of Grant and the State of New Mexico, and that said newspaper is now, and was at all times herein mentioned, a newspaper of general circulation.

That the advertisement, copy of which is hereto attached, was published in said hereinbefore mentioned newspaper once each and every week for 1 consecutive week(s), the first publication thereof having been made on 5/16/2015 and the last publication thereof having been made on 5/16/2015. That said newspaper was regularly printed, published and issued with said notice herein upon the following dates, to wit:

5/16/2015

Nickolas C. Seibel

Suscribed and sworn to before me on this 19th day of May 2015.

OFFICIAL SEAL
MELANIE K. ROGERS
Notary Public
State of New Mexico
My Comm. Expires 2/1/18

Melanie K Rogers

Silver City Daily Press and Independent
P.O. Box 1371
Silver City, NM 88062
(575) 388-1576
INVOICE FOR PUBLICATION OF LEGAL NOTICE

Modrall Sperling
Attn: Julie J. Rael, CLA
PO Box 2168
Albuquerque, NM 87103-2168

Date:	Description:	PO#	Lines:	Price/Line:	Total:
5/16/2015	NM Water Quality Control		186	$0.63	$117.18
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00
				$0.49	$0.00

Sub Total:	$117.18
Tax:	$9.08
Grand Total:	$126.26

Please include top portion with payment to ensure proper credit.

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF GRANT] S S

Nickolas C. Seibel, being first duly sworn, on his oath says: That he is the publisher of the Silver City Daily Press and Independent, a newspaper published in the Town of Silver City, in the County of Grant and the State of New Mexico, and that said newspaper is now, and was at all times herein mentioned, a newspaper of general circulation.

That the advertisement, copy of which is hereto attached, was published in said hereinbefore mentioned newspaper once each and every week for 1 consecutive week(s), the first publication thereof having been made on 5/16/2015 and the last publication thereof having been made on 5/16/2015. That said newspaper was regularly printed, published and issued with said notice herein upon the following dates, to wit:

5/16/2015

Nickolas C. Seibel

Suscribed and sworn to before me on this 19th day of May 2015.

OFFICIAL SEAL
MELANIE K. ROGERS
Notary Public
State of New Mexico
My Comm. Expires 6/1/18

Legal

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket


Legal

Legal

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.5000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.500204,20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow petitioners to seek permits to operate Class I underground injection control wells for hazardous waste that they generate, and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102, Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address, reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

My16

SANTA FE NEW MEXICAN

Founded 1849

MODRALL LAW FIRM.
PO BOX 2168
ALBUQUERQUE, NM 87103

ACCOUNT: 1902
AD NUMBER: 0000122497
LEGAL NO 98460 P.O. #:

1 TIME(S)	298.20
AFFIDAVIT	~~20.00~~ 10.00mn
TAX	25.23
TOTAL	333.43

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, W. Barnard, being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe, Rio Arriba, San Miguel, and Los Alamos, State of New Mexico and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the Legal No 98460 a copy of which is hereto attached was published in said newspaper 1 day(s) between 05/16/2015 and 05/16/2015 and that the notice was published in the newspaper proper and not in any supplement; the first date of publication being on the 16th day of May, 2015 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ _____
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscried and sworn to before me on this 19th day of May, 2015

Notary Kristi Leigh Salazar

Commission Expires: August 11, 2018

OFFICIAL SEAL
Kristi Leigh Salazar
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 8/11/18

THE SANTA FE
NEW MEXICAN
Founded 1849

LEGAL #98460

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3009 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, LLC. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulations the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

Published in The Santa Fe New Mexican on May 16, 2015

Continued...

Continued...

Continued...

SANTA FE
NEW MEXICAN

Founded 1849

MODRALL LAW FIRM.
PO BOX 2168
ALBUQUERQUE, NM 87103

ACCOUNT: 1902
AD NUMBER: 0000122556
LEGAL NO 98461 P.O. #:

1 TIME(S)	357.70
AFFIDAVIT	10.00
TAX	30.11
TOTAL	397.81

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, W. Barnard, being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe, Rio Arriba, San Miguel, and Los Alamos, State of New Mexico and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the Legal No 98461 a copy of which is hereto attached was published in said newspaper 1 day(s) between 05/16/2015 and 05/16/2015 and that the notice was published in the newspaper proper and not in any supplement; the first date of publication being on the 16th day of May, 2015 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/_____
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscried and sworn to before me on this 19th day of May, 2015

Notary Kristi Leigh Salazar

Commission Expires: August 11, 2018

OFFICIAL SEAL
Kristi Leigh Salazar
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 8/11/18

THE SANTA FE
NEW MEXICAN
Founded 1849

LEGAL # 98461

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México, para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos, para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que prodocen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102, Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos y no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 o Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

Published in The Santa Fe New Mexican on May 16, 2015

AFFIDAVIT OF PUBLICATION
STATE OF NEW MEXICO

I, Erika Montoya
Legals Clerk

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico do solemnly swear that the clipping hereto attached was published in the regular and entire issue of said paper and not in a supplement thereof for a period of:

One time with the issue dated

May 16, 2015

Clerk

Sworn and subscribed to before me

this 16th day of May, 2015

Notary Public

My Commission expires
June 13, 2018

Roswell Daily Record Paid

Notice of Public Hearing...

Publish May 16, 2015

NEW MEXICO WATER QUALITY CONTROL COMMISSION

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall C Avenue, Artesia, New Mexico 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.53

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Ag the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commis cipal parts of New Mexico s approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prc ground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries th eral construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proj nal rule will be submitted to EPA for approval as part of New Mexico s delegated authority to administer the Underground Injection Control prc

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Ad in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amen el order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to in at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administra

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Q NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed mission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 201

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in v ita, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must t the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do s notice of intent can be found in the Commission s Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written tec received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motic must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulatio and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or se ate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at **505.827.2425** or Pam. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after th tion on the proposal.

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO

AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS

REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de l de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre k de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por s de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuev tes de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de bios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos re posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición a Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar poso subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subte rosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación cc delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pue de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por c más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agu Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con ref pediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disp mente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora d 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administrado las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expedier

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra f servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audier ibte a **505.827.2425** ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Pónga Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta despu considerar acción sobre la propuesta.

Notice of Public Hearing...

Publish May 16, 2015

NEW MEXICO WATER QUALITY CONTROL COMMISSION

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE

UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico s approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico s delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator s office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission s Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at **505.827.2425** or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO

AVISO DE AUDIENCIA PÚBLICA PARA
CONSIDERAR ENMIENDAS PROPUESTAS A LOS

REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañada, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a **505.827.2425** ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

Affidavit of Publication

No. 23498

State of New Mexico

County of Eddy:

Danny Scott Danny Scott

being duly sworn, sayes that he is the **Publisher**

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same day as follows:

First Publication	May 17, 2015
Second Publication	
Third Publication	
Fourth Publication	
Fifth Publication	
Sixth Publication	

Subscribed and sworn before me this

18th day of May 2015

OFFICIAL SEAL
Latisha Romine
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 5/12/2019

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

LEGAL NOTICE

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3900 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules; 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07; 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5289-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102, Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website: http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

Published in the Artesia Daily Press, Artesia, N.M. May 17, 2015 Legal No. 23498.

Affidavit of Publication

No. 23499

State of New Mexico

County of Eddy:

Danny Scott

being duly sworn, sayes that he is the **Publisher**

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same day as follows:

First Publication May 17, 2015

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Sixth Publication

Subscribed and sworn before me this

18th day of May 2015

OFFICIAL SEAL
Latisha Romine
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 5/12/2019

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

LEGAL NOTICE

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo Mexico para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua aprueba los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del órden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención del mismo, de preferencia para un aviso de intención para la audiencia junto con testimonio técnico escrito, que deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede formar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

Published in the Artesia Daily Press, Artesia, N.M., May 17, 2015 Legal No. 23499.

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Rynni Henderson, being first duly sworn, on oath says:

That she is the Publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

May 17 2015

That the cost of publication is **$288.56** and that payment thereof has been made and will be assessed as court costs.

Rynni Henderson

Subscribed and sworn to before me this 21 day of May, 2015

Cynthia Arredondo

My commission Expires 2/13/17

Notary Public

OFFICIAL SEAL
Cynthia Arredondo
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 2/13/17

May 17, 2015

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address, reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Rynni Henderson, being first duly sworn, on oath says:

That she is the Publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

May 17 2015

That the cost of publication is **$337.85** and that payment thereof has been made and will be assessed as court costs.

Subscribed and sworn to before me this 21 day of May, 2015

My commission Expires 2/13/17

Notary Public

OFFICIAL SEAL
Cynthia Arredondo
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 2/13/17

Mayo 17, 2015

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106, 20.6.2.3109, 20.6.2.5102-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procurarían modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I del control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabe de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de la Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 o Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
County of Bernalillo SS

Linda MacEachen, being duly sworn, declares and says that she is Classified Advertising Manager of **The Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made of assessed as court cost; that the notice, copy of which is hereto attached, was published in said paper in the regular daily edition, for 1 times on the following dates:

May 17, 2015

Linda C MacEachen

Sworn and subscribed before me, a Notary Public, in and for the County of Bernalillo and State of New Mexico this 17 day of May of 2015.

OFFICIAL SEAL
Sandra B. Gutierrez
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 2-18-17

Sandra B. Gutierrez

PRICE # 358.62

Statement to come at end of month.

CLA-22-A (R-1/93) ACCOUNT NUMBER 1007603

NEW MEXICO WATER QUALITY CONTROL COMMISSION
NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE
UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO
AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos, (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua aprueba los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico, por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auditiva o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.
Journal: May 17, 2015

AFFIDAVIT OF PUBLICATION

Ad No. 71513

STATE OF NEW MEXICO
County of San Juan:

MIKE KELLOGG, being duly sworn says: That he IS the ADVERTISING DIRECTOR of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication and appeared in the Internet at The Daily Times web site on the following day(s):

Saturday, May 16, 2015

And the cost of the publication is $474.60

ON 5/18/15 MIKE KELLOGG appeared before me, whom I know [illegible] person who signed the

Farmington Daily Times

Paid

COPY OF PUBLICATION

NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterráneo. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

Legal No. 71513 published in The Daily Times on May 16, 2015.

PROOF OF PUBLICATION

STATE OF NEW MEXICO }
§
COUNTY OF CIBOLA }

Donald Jaramillo, being duly sworn deposes and says that he is the publisher of THE CIBOLA BEACON, a newspaper published in Grants, Cibola County, New Mexico, that the notice of

Legal

a copy of which is hereto attached was first published in said newspaper in its issue dated 5/19 and was published in an issue of said newspaper, once a week, and not in any supplement, thereafter for the full period of (1) one consecutive weeks, the last publication thereof being an issue dated.

Donald Jaramillo, Publisher

Subscribed and sworn to before me on May 19, 2015

Notary Public

OFFICIAL SEAL
Alaina Jaramillo
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 02/02/2019

My Commission Expires
February 2, 2019

Publisher's Fees $ 250.00

PUBLIC NOTICE

NEW MEXICO WATER QUALITY CONTROL COMMISSION

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location

will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

Published in the Cibola Beacon May 19, 2015. Invoice #0570.

PROOF OF PUBLICATION

STATE OF NEW MEXICO }
§
COUNTY OF CIBOLA }

Donald Jaramillo, being duly sworn deposes and says that he is the publisher of THE CIBOLA BEACON, a newspaper published in Grants, Cibola County, New Mexico, that the notice of

Legal

a copy of which is hereto attached was first published in said newspaper in its issue dated 5/19 and was published in an issue of said newspaper, once a week, and not in any supplement, thereafter for the full period of (1) one consecutive weeks, the last publication thereof being an issue dated.

Donald Jaramillo, Publisher

Subscribed and sworn to before me on May 19, 2015

Notary Public

OFFICIAL SEAL
Alaina Jaramillo
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 02/08/2019

My Commission Expires
February 2, 2019

Publisher's Fees $ 28340

PUBLIC NOTICE

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO

AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en el Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, Nuevo México 88210 para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los pozos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificarían los prohibición actual sobre los pozos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar pozos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de pozos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua aprueba los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que deseen presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

Published in the Cibola Beacon May 19, 2015. Invoice #0571.

PROOF OF PUBLICATION

The following legal notice has been published in THE weekly newspaper published at Truth or Consequences, Sierr of New Mexico.

............Modrall Sperlin
............Water Quality Pub
............Hearing
............English/Spanish
....
....
....

in said newspaper on May 20 2015, to and includi

20 ...., inserting same in the issue of

....
....
....
....
....
....

SIGNED: Kim
TITLE: Admin

Subscribed and sworn to befoi

Herald (TorC)

I will request a check + remit ASAP

Maureen T.
Notary Public

My Commission expires....................... February 10, 2018....

...posos de Clase I de control de inyeccion subterranea de residuos peligrosos generados por refinerias de petroleo que son coherentes con estandares federales de construccion, operacion, seguimiento, cierre, y garantia financiera. Si la Comision de Control de Calidad de Agua aprueba los cambios propuestos de reglamentos, se los presentara a la EPA para su aprobacion como parte de la autoridad delegada de Nuevo Mexico para administrar el programa de Control de Inyeccion Subterranea.

Los cambios propuestos y el orden procesal que regulan la audiencia podran ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comision que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo Mexico, 87502. Ademas, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo Mexico (por sus siglas en ingles, NMED) en http://www.nmenv.state.nm.us. En la direccion indicada arriba estaran copias disponibles para antes del 14 de julio del 2015.

A todas las personas interesadas les daran oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaracion escrita en terminos no tecnicos en vez de una declaracion verbal debera registrar tal declaracion antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones tecnicas deben registrar con la Comision un aviso por escrito de su intencion de hacerlo. Los requisitos para un aviso de intencion para la audiencia junto con testimonio tecnico por escrito, deberan ser recibidos por la Oficina de la Administradora de Comision antes de las 5:00 de la tarde el 15 de junio del 2015 y deberan ser citados con el nombre del reglamento, la fecha de la audiencia, y el numero de expediente WQCC 14-15 (R). Cualquier testimonio de refutacion al testimonio tecnico por escrito debe ser presentado a la Oficina de la Administradora de Comision antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberan ser recibidas por la Oficina de la Administradora de Comision antes de las 5:00 de la tarde el 6 de julio del 2015, y deberan ser citadas con el nombre del reglamento, la fecha de la audiencia, y el numero de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, interprete calificado de lenguaje de senas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, pongase en contacto con Pam Castaneda con una anterioridad de diez dias de la audiencia o lo mas pronto posible a 505.827.2425 o Pam.Castaneda@state.nm.us. Documentos publicos pueden ser proporcionados en varios formatos accesibles. Pongase en contacto con Pam Castaneda si requiere formato accesible.

La Comision puede tomar una decision sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta despues de la audiencia para considerar accion sobre la propuesta.

Pub: The Herald
Req: Modrall Sperling. P.A.
May 20, 2015
This legal is posted at www.publicnoticeads.com

hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castaneda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castaneda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castaneda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castaneda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

****

LA COMISION DE CONTROL DE CALIDAD DE AGUA DE NUEVO MEXICO
AVISO DE AUDIENCIA PUBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCION SUBTERRANEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comision de Control de Calidad de Agua (por sus siglas en ingles, WQCC) de Nuevo Mexico celebrara una audiencia publica a partir de las 9:00 de la manana el 14 de julio del 2015 en 511 West Texas Avenue, Artesia, Nuevo Mexico para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo Mexico de Calidad de Agua, 20.6.2 NMAC, propuestas en el numero de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyeccion subterranea y enmendaria los Articulos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y anadiria nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo Mexico solicito y le fue concedida Autoridad Principal de Ejecucion ("Primacia") de la Agencia de Proteccion Ambiental (por sus siglas en ingles, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyeccion Subterranea en Nuevo Mexico. Los reglamentos de la Comision de Control de Calidad de Agua de Nuevo Mexico incluyen las partes principales del programa autorizado de delegacion de Nuevo Mexico. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyeccion subterranea. En particular, los cambios propuestos de reglamentos (1) modificaria la prohibicion actual sobre los posos de Clase I de control de inyeccion subterranea de residuos peligrosos para permitir que refinerias de petroleo soliciten permisos para operar posos de control de inyeccion subterranea de residuos peligrosos que producen; y (2) autorizaria la concesion de permisos de posos de Clase I de control de inyeccion subterranea de residuos peligrosos generados por refinerias de petroleo que son que individuos podran sacarlas por cuenta propia. Si requiere más informacion, debera ser dirigida a Pam Castaneda, Administradora de Comision, a la direccion indicada arriba.

La audiencia se llevara a cabo de acuerdo con las Directrices para las Audiencias de Regulacion de la Comision de Control de Calidad de Agua, La Ley de Calidad de Agua, Articulo 74-6-6 Leyes Anotadas de Nuevo Mexico (por sus siglas en ingles, NMSA) 1978, y otros procedimientos aplicables y ordenes procesales. Comentarios por escrito sobre los cambios propuestos podran dirigirse a Pam Castaneda, Administradora de Comision, a la direccion indicada arriba con referencia a numero de expediente WQCC 14-15 (R). Comentarios escritos deberan ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les daran oportunidad razonable en la audiencia para presentar evidencia, material,

PROOF OF PUBLICATION

NEW MEXICO WATER QUALITY CONTROL COMMISSION

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502.

THE TAOS NEWS

ACCOUNT:	10987
AD NUMBER:	0000123159
LEGAL NO	14,522
	P.O. #:

1 TIME(S)	0.00
AFFIDAVIT	6.00
TAX	48.72
TOTAL	643.77

MODRALL SPERLING LAWYERS,
PO BOX 2168
500 FOURTH STREET NW
STE.1000

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF TAOS

I, Moriah Montoya, being first duly sworn declare and say that I am Legal Advertising Representative of THE TAOS NEWS, a weekly newspaper published in the English language, and having a general circulation in the City and County of Taos, State of New Mexico and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the Legal No 14,522 a copy of which is hereto attached was published in said newspaper 1 day(s) between 05/21/2015 and 05/21/2015 and that the notice was published in the newspaper proper and not in any supplement; the first date of publication being on the 21st day of May, 2015 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

Moriah Montoya

/S/_____
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscried and sworn to before me on this 21st day of May, 2015

Mary Chavez

Notary _____

Commission Expires: 1/21/17

OFFICIAL SEAL
MARY CHAVEZ
Notary Public
State of New Mexico
My Comm. Expires 1/21/17

Legal No. 14,522.
NEW MEXICO WATER QUALITY CONTROL COMMISSION

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C.

The Taos News
PO Box 3737 Taos, NM 87571 575-758-2241

...ying and being near Arroyo Taos County, Mexico, within Arroyo Hondo being a portion ts 3 and 4, Map rvey 4 of the aos County Resment Survey, eing more party described by and bound as s:

ning at a #5 rewith alum. cap set, from when losing corner of ns 20 and 21, N., R. 12 E., a 1940 USGLO Cap Monument bears N. 21 1' 55" W. 3911.22

ce N. 14 deg 48' V. 148.37 feet to a ebar with alum #5040 set, ce N. 75 deg 17' 294.18 feet to a ebar with alum. #5040 set, ce S. 11 deg 38' 148.39 feet to a ebar with alum. #5040 set, ce S. 75 deg 17' W. 293.76 feet to point and place of nning;

uding any improvements, fixtures, attachments, as, but not limito, mobile homes. ject to all taxes, ty liens and other rictions and easets of record, and ject to a one (1) nth right of reptions by the Departs upon entry n order approving e. The foregoing e will be made to isfy a foreclosure gment rendered this Court in the ove-entitled and mbered cause on uary 6, 2015, being action to foreclose mortgage on the ove-described operty. Plaintiff's dgment is 83,287.50, and the ment bears interest the rate of 8.500% r annum, which acues at the rate of 2.68 per diem, commencing on February 2014 with the Court serving entry of fial judgment against id Defendant, Andy omero, for the mount due after reclosure sale, for osts and attorney's es, plus interest as ay be assessed by he Court. Plaintiff as the right to bid at uch sale, all of its judgment amount nd submit its bid erbally or in writing. laintiff may apply all r any part of its udgment to the pur-

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at 505.827.2425 or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

****

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO

La audiencia se ... que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a 505.827.2425 ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.

(Legal No. 14,522; Pub. May 21, 2015).

Legal No. 14,523.

STATE OF NEW MEXICO COUNTY OF TAOS, 8th JUDICIAL DISTRICT COURT, NO.: CV-2015-182

IN THE MATTER OF A PETITION FOR CHANGE OF NAME MARK EDWARD ROBINSON.

NOTICE OF NAME CHANGE

TAKE NOTICE that in accordance with the provisions of §40-8-1 through §40-8-3 NMSA 1978, the Petitioner MARK EDWARD ROBINSON will apply to District Judge Sarah C. Backus, on June 17, 2015 at 11:30 am for an Order of Name Change to SONNY BOY ROBINSON.
/S/Vicki Vigil

(Legal No. 14,523; Pub. May 21, 28, 2015).

LEGALS

al No. 14,520.
EGAL NOTICE

ce is hereby giv-
pursuant to 22-8-
NMSA 1978 that
Governing Coun-
of La Jicarita Com-
ity School, Coun-
of Taos, State of
Mexico will be
Monday, June 15,
, 5:30 p.m., at the
ular Board meet-
at La Jicarita
mmunity School,
6 State Rd 75,
asco, N.M., pres-
and publicly re-
the Operating
get for the 2015-
fiscal year. This
a public hearing
all school pa-
is and the general
lic are invited to
nd.

al No. 14,520;
. May 21, 28, 2015).

al No. 14,521.
STATE OF NEW
EXICO COUNTY
F TAOS EIGHTH
DICIAL DISTRICT
COURT No.
0-CV-2012-00048

VEN LOAN SERVIC-
LLC, AS
VICER FOR
TSCHE BANK NA-
NAL TRUST COM-
Y, AS TRUSTEE
THE REGISTERED
DERS OF GSAMP
ST 2003-FM1;
RTGAGE PASS-
OUGH CERTIFI-
ES, SERIES 2003-

aintiff, vs.

Y ROMERO AND
UNKNOWN
USE OF ANDY RO-
O, IF ANY,

endants.

OTICE OF SALE
ice is hereby giv-
that on June 24,
5, at the hour of
0 am the under-
ed Special Mas-
or her designee,
at the front en-
ice of the Taos
nty Courthouse,
Eighth Judicial Dis-
t Court, 105 Al-
ht Street, Suite H,
s, NM 87571, sell
the right, title
interest of the
ve-named De-
dants, in and to
hereinafter de-
bed real estate to
highest bidder for
h. The property to
sold is located at
B State Road 522,
yo Hondo, NM
3 (if there is a
flict between the
l description and
street address,
legal description
l control), and is
e particularly de-
ed as follows:

chase price in lieu of cash. The sale may be postponed and rescheduled at the discretion of the Special Master.

The Court's decree, having duly appointed its Special Master to advertise and immediately offer for sale the subject real estate and to apply the proceeds of sale, first to the costs of sale and the Special Master's fees, then to pay the above-described judgment, interest, and costs of sale, and to pay unto the registry of the Court any balance remaining to satisfy future adjudication of priority mortgage holders;

NOW, THEREFORE, notice is hereby given that in the event that said property is not sooner redeemed, the undersigned will as set forth above, offer for sale and sell to the highest bidder for cash or equivalent, the lands and improvements described above for the purpose of satisfying, in the adjudged order of priorities, the judgment described herein and decree of foreclosure together with any additional costs and attorney's fees, costs of advertisement and publication, a reasonable receiver and Special Master's fee to be fixed by the Court. The total amount of the judgment due is $183,287.50, plus interest to and including date of sale of $21,425.36, for a total judgment plus interest of $204,712.86. Sale is subject to the entry of an order of the Court approving the terms and conditions of this sale.

Witness my hand this 11th day of May, 2015.

/s/ Jennifer Taylor
JENNIFER A. TAYLOR,
Special Master
P.O. Box 91988
Albuquerque, NM
87199
Telephone: (505) 433-4576
Facsimile: (505) 433-4577
E-mail: sales@anciliaryls.com

(Legal No. 14,521; Pub. May 21, 28, Jun. 4, 11, 2015).

Legal No. 14,522.
NEW MEXICO WATER QUALITY CONTROL COMMISSION

federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file

AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en el Despacho de la Municipalidad de Artesia, 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales.

Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015.

Legal No. 14,525.
LEGAL NOTICE

Members of the public are invited to provide comment on hearings for the issuance of or transfers of liquor licenses as outlined below. All hearings will be conducted at the NM Alcohol and Gaming Division Offices on the date specified in the Toney Anaya Building, 2550 Cerrillos Road, 2nd Floor, Santa Fe, New Mexico. The Hearing Officer for this Application is Rose L. Garcia who can be contacted at 505-476-4552 or rosel.garcia@state.nm.us

Application No. 955421 for the Issuance of a Restaurant Liquor License on June 11, 2015 at 11:00 a.m. The Public House, LLC d/b/a The Public House Cafe located at 1014 Paseo del Pueblo Sur, Hwy. 68, Taos, New Mexico.

(Legal No. 14,525; Pub. May 21, 28, 2015).

New Mexico Register / Volume XXVI, Issue 10 / May 29, 2015

Amended Notice of Public Hearing to Consider Proposed Amendments to the Underground Injection Control Rules, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

This Amended Notice of Public Hearing revises the Notice of Hearing published in the New Mexico Register on May 15, 2015. This Notice contains additional deadlines established by the procedural order governing the hearing. The Notice also includes an updated location for the hearing in Artesia, New Mexico.

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at **505.827.2425** or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

English

www.lcsun-news.com

LAS CRUCES SUN-NEWS

PROOF OF PUBLICATION

See Attached

I, being duly sworn, Frank Leto deposes and says that he is the Publisher of the Las Cruces Sun -News, a newspaper published daily in the county of Dona Ana, State of New Mexico; that the notice 55241 is an exact duplicate of the notice that was published once a week/day in regular and entire issue of said newspaper and not in any supplement thereof for 1 consecutive week(s)/day(s), the first publication was in the issue dated June 12, 2015, the last publication was June 12, 2015
Despondent further states this newspaper is duly qualified to publish legal notice or advertisements within the meaning of Sec. Chapter 167, Laws of 1937.

Signed FLeto

Publisher
Official Position

STATE OF NEW MEXICO
ss.
County of Dona Ana
Subscribed and sworn before me this
12th **day of** June 2015

Maria Isabel Del Villar
Notary Public in and for
Dona Ana County, New Mexico
August 6, 2016
My Term Expires

OFFICIAL SEAL
MARIA ISABEL DEL VILLAR
Notary Public
State of New Mexico
My Comm. Expires 8/6/16

Spanish

www.lcsun-news.com

LAS CRUCES SUN-NEWS

PROOF OF PUBLICATION

See Attached

I, being duly sworn, Frank Leto deposes and says that he is the Publisher of the Las Cruces Sun -News, a newspaper published daily in the county of Dona Ana, State of New Mexico; that the notice 55240 is an exact duplicate of the notice that was published once a week/day in regular and entire issue of said newspaper and not in any supplement thereof for 1 consecutive week(s)/day(s), the first publication was in the issue dated June 12, 2015, the last publication was June 12, 2015
Despondent further states this newspaper is duly qualified to publish legal notice or advertisements within the meaning of Sec. Chapter 167, Laws of 1937.

Signed F Leto

Publisher
Official Position

STATE OF NEW MEXICO
ss.
County of Dona Ana
Subscribed and sworn before me this
12th **day of** June 2015

Maria Isabel Del Villar
Notary Public in and for
Dona Ana County, New Mexico

August 6, 2016
My Term Expires

OFFICIAL SEAL
MARIA ISABEL DEL VILLAR
Notary Public
State of New Mexico
My Comm. Expires 8/6/16

Legal Advertising Affidavit

Jamie Pfannenstiel, who, being duly sworn as the Advertising Assistant of the Las Cruces BULLETIN, a weekly newspaper of general distribution published in the City of Las Cruces, County of Doña Ana, State of New Mexico, disposes and states that the legal advertising for

MODRALL SPERLING

In the matter of:
NEW MEXICO WATER QUALITY CONTROL COMMISSION NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

In accordance with the laws of the State of New Mexico, the attached was published in its entirety One time(s) in the **Las Cruces BULLETIN**, the first only publication date being 06/12/2015.

Jamie Pfannenstiel

Sworn to and subscribed
before me this 12th day
of JUNE 2015
in the
CITY OF LAS CRUCES
COUNTY OF DOÑA ANA
STATE OF NEW MEXICO

Notary Public

OFFICIAL SEAL
MELISSA A. ATENCIO
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires: 5-10-16

$320.57
Advertising Costs

NEW MEXICO WATER QUALITY CONTROL COMMISSION
NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE UNDERGROUND INJECTION CONTROL RULES, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

The New Mexico Water Quality Control Commission will hold a public hearing beginning at 9:00 a.m. on July 14, 2015 at the Artesia City Hall Chambers, 511 West Texas Avenue, Artesia, New Mexico, 88210 to consider proposed amendments to the New Mexico Water Quality Act rules, 20.6.2 NMAC, proposed in WQCC Docket Number 14-15 (R) by Navajo Refining Company, L.L.C. The proposal addresses the underground injection control rules and would amend Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and add new text as 20.6.2.5300 through 20.6.2.5399 NMAC.

In 1982, New Mexico applied for and received Primary Enforcement Authority ("Primacy") from the United States Environmental Protection Agency ("EPA") to administer the Federal Safe Drinking Water Act Underground Injection Control Program in New Mexico. The New Mexico Water Quality Control Commission rules contain the principal parts of New Mexico's approved program delegation. The proposed rule changes that are the subject of the July 14, 2015 hearing seek to amend certain parts of those rules governing Class I underground injection control wells. Specifically, the proposed rule changes would (1) modify the current prohibition on Class I underground injection control wells for hazardous waste to allow oil refineries to seek permits to operate Class I underground injection control wells for hazardous waste that they generate; and (2) authorize the permitting of Class I underground injection control wells for hazardous waste generated by oil refineries that are consistent with federal construction, operation, monitoring, closure, and financial assurance standards. If the Water Quality Control Commission adopts the proposed rule changes, the final rule will be submitted to EPA for approval as part of New Mexico's delegated authority to administer the Underground Injection Control program.

The proposed changes and the procedural order governing the hearing may be reviewed during regular business hours at the Commission Administrator's office located in the Harold Runnels Building, 1190 St. Francis Drive, Room S-2102 Santa Fe, New Mexico, 87502. In addition, copies of the proposed amendments and the procedural order governing the hearing are posted on the NMED website at http://www.nmenv.state.nm.us. Copies at this location will be available to individuals for photocopying at their own expense. Requests for further information about the proposed rule should be directed to Pam Castañeda, Commission Administrator, at the above address.

The hearing will be conducted in accordance with the Guidelines for Water Quality Control Commission Regulation Hearings, the Water Quality Act, Section 74-6-6 NMSA 1978, and other applicable procedures and procedural orders. Written comments regarding the proposed revisions may be addressed to Pam Castañeda, Commission Administrator, at the above address; reference docket number WQCC 14-15 (R). Written comments must be received by July 14, 2015.

All interested persons will be given reasonable opportunity at the hearing to submit relevant evidence, data, views and arguments, orally or in writing, to introduce exhibits, and to examine witnesses. Any person who wishes to submit a non-technical written statement for the record in lieu of oral testimony must file such statement prior to the close of the hearing.

Pursuant to the procedural order, persons wishing to present technical testimony must file with the Commission a written notice of intent to do so. The requirements for a notice of intent can be found in the Commission's Guidelines for Regulation Hearings. Notices of intent for the hearing, along with written technical testimony, must be received by the Office of the Commission Administrator by 5:00 pm on June 15, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). Any rebuttal testimony to the written technical testimony must be submitted to the Office of the Commission Administrator by 5:00 pm on June 29, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R). All motions related to the hearing must be received by the Office of the Commission Administrator by 5:00 pm on July 6, 2015, and should reference the name of the regulation, the date of the hearing, and docket number WQCC 14-15 (R).

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, contact Pam Castañeda at least ten days prior to the hearing or as soon as possible at **505.827.2425** or Pam.Castaneda@state.nm.us. Public documents can be provided in various accessible formats. Contact Pam Castañeda if accessible format is needed.

The Commission may make a decision on the proposed regulatory changes at the conclusion of the hearing, or may convene a meeting after the hearing to consider action on the proposal.

Date 06/12/15

Legal Advertising Affidavit

Jamie Pfannenstiel, who, being duly sworn as the Advertising Assistant of the Las Cruces BULLETIN, a weekly newspaper of general distribution published in the City of Las Cruces, County of Doña Ana, State of New Mexico, disposes and states that the legal advertising for

MODRALL SPERLING

In the matter of:
LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERARENMIENDAS PROPUESTAS A LOSREGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

In accordance with the laws of the State of New Mexico, the attached was published in its entirety One time(s) in the **Las Cruces BULLETIN**, the first only publication date being 06/12/2015.

Jamie Pfannenstiel

Sworn to and subscribed
before me this 12th day
of JUNE 2015
in the
CITY OF LAS CRUCES
COUNTY OF DOÑA ANA
STATE OF NEW MEXICO

Notary Public

OFFICIAL SEAL
MELISSA A. ATENCIO
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires: 5-12-14

$320.57
Advertising Costs

LA COMISIÓN DE CONTROL DE CALIDAD DE AGUA DE NUEVO MÉXICO AVISO DE AUDIENCIA PÚBLICA PARA CONSIDERAR ENMIENDAS PROPUESTAS A LOS REGLAMENTOS DE CONTROL DE INYECCIÓN SUBTERRÁNEA, 20.6.2.3000 NMAC Y 20.6.2.5000 NMAC

La Comisión de Control de Calidad de Agua (por sus siglas en inglés, WQCC) de Nuevo México celebrará una audiencia pública a partir de las 9:00 de la mañana el 14 de julio del 2015 en el Despacho de la Municipalidad de Artesia, 511 West Texas Avenue, Artesia, Nuevo México para considerar enmiendas propuestas a los reglamentos de la Ley de Nuevo México de Calidad de Agua, 20.6.2 NMAC, propuestas en el número de expediente WQCC 14-15 (R) por Navajo Refining Company, L.L.C. La propuesta cubre los reglamentos de control de inyección subterránea y enmendaría los Artículos 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, y 20.6.2.5209-10 NMAC y añadiría nuevo texto como 20.6.2.5300 a 20.6.2.5399 NMAC.

En 1982, Nuevo México solicitó y le fue concedida Autoridad Principal de Ejecución ("Primacía") de la Agencia de Protección Ambiental (por sus siglas en inglés, EPA) de los Estados Unidos para administrar la Ley Federal de Agua Limpia Potable para el Programa de Control de Inyección Subterránea en Nuevo México. Los reglamentos de la Comisión de Control de Calidad de Agua de Nuevo México incluyen las partes principales del programa autorizado de delegación de Nuevo México. Los cambios de reglamentos propuestos que son el asunto de la audiencia del 14 de julio del 2015 procuran modificar ciertas partes de aquellos reglamentos que rigen los posos de Clase I de control de inyección subterránea. En particular, los cambios propuestos de reglamentos (1) modificaría la prohibición actual sobre los posos de Clase I de control de inyección subterránea de residuos peligrosos para permitir que refinerías de petróleo soliciten permisos para operar posos de control de inyección subterránea de residuos peligrosos que producen; y (2) autorizaría la concesión de permisos de posos de Clase I de control de inyección subterránea de residuos peligrosos generados por refinerías de petróleo que son coherentes con estándares federales de construcción, operación, seguimiento, cierre, y garantía financiera. Si la Comisión de Control de Calidad de Agua apruebe los cambios propuestos de reglamentos, se los presentará a la EPA para su aprobación como parte de la autoridad delegada de Nuevo México para administrar el programa de Control de Inyección Subterránea.

Los cambios propuestos y el orden procesal que regulan la audiencia podrán ser revisados durante las horas laborales regulares en la oficina de la Administradora de Comisión que se ubica en el edificio de Harold Runnels, 1190 St. Francis Drive, Sala S-2102 Santa Fe, Nuevo México, 87502. Además, se pueden encontrar las copias de las enmiendas propuestas y el orden procesal que regula la audiencia en el sitio Internet del Departamento Ambiental de Nuevo México (por sus siglas en inglés, NMED) en http://www.nmenv.state.nm.us. En la dirección indicada arriba estarán copias disponibles para que individuos podrán sacarlas por cuenta propia. Si requiere más información, deberá ser dirigida a Pam Castañeda, Administradora de Comisión, a la dirección indicada arriba.

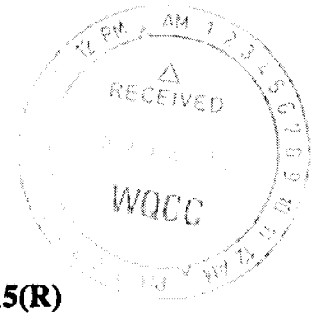
La audiencia se llevará a cabo de acuerdo con las Directrices para las Audiencias de Regulación de la Comisión de Control de Calidad de Agua, La Ley de Calidad de Agua, Artículo 74-6-6 Leyes Anotadas de Nuevo México (por sus siglas en inglés, NMSA) 1978, y otros procedimientos aplicables y órdenes procesales. Comentarios por escrito sobre los cambios propuestos podrán dirigirse a Pam Castañeda, Administradora de Comisión a la dirección indicada arriba con referencia a número de expediente WQCC 14-15 (R). Comentarios escritos deberán ser recibidos antes del 14 de julio del 2015.

A todas las personas interesadas les darán oportunidad razonable en la audiencia para presentar evidencia, material, puntos de vista y disputas importantes, verbalmente o por escrito, para presentar muestras y para interrogar a testigos. Cualquier persona que desea presentar una declaración escrita en términos no técnicos en vez de una declaración verbal deberá registrar tal declaración antes del cierre de la audiencia.

En virtud del orden procesal, las personas que desean presentar declaraciones técnicas deben registrar con la Comisión un aviso por escrito de su intención de hacerlo. Los requisitos para un aviso de intención para la audiencia junto con testimonio técnico por escrito, deberán ser recibidos por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 15 de junio del 2015 y deberán ser citados con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R). Cualquier testimonio de refutación al testimonio técnico por escrito debe ser presentado a la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 29 de junio del 2015. Todas las peticiones relacionadas a la audiencia deberán ser recibidas por la Oficina de la Administradora de Comisión antes de las 5:00 de la tarde el 6 de julio del 2015, y deberán ser citadas con el nombre del reglamento, la fecha de la audiencia, y el número de expediente WQCC 14-15 (R).

Si usted es un individuo con una discapacidad que requiere un lector, amplificador, intérprete calificado de lenguaje de señas, o cualquier otra forma de ayuda auxiliar o servicio para asistir o participar en la audiencia o junta, póngase en contacto con Pam Castañeda con una anterioridad de diez días de la audiencia o lo más pronto posible a **505.827.2425** ó Pam.Castaneda@state.nm.us. Documentos públicos pueden ser proporcionados en varios formatos accesibles. Póngase en contacto con Pam Castañeda si requiere formato accesible.

La Comisión puede tomar una decisión sobre los cambios regulatorios propuestos al concluir la audiencia, o puede convocar una junta después de la audiencia para considerar acción sobre la propuesta.



STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

In the Matter of:	)	
PROPOSED AMENDMENT	)	**No. WQCC 14-15(R)**
To 20.6.2.3000 NMAC and 20.6.2.5000 NMAC	)	

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT'S OIL CONSERVATION DIVISION'S NOTICE OF INTENT TO PRESENT TECHNICAL TESTIMONY

The Oil Conservation Division ("OCD") of the Energy, Minerals and Natural Resources Department ("EMNRD"), pursuant to Section E(a) of the Procedural Order issued on May 15, 2015, hereby files this Notice of Intent to Present Technical Testimony at the Proposed Amendment to 20.6.2.3000 NMAC and 20.6.2.5000 NMAC (the "Rule") hearing scheduled to commence on July 14, 2015.

1. Entity Represented by the Technical Witness

   The technical witness will testify for the OCD of EMNRD.

2. Technical Witness and Qualifications

   EMNRD will call Phillip Goetze to present technical testimony. Mr. Goetze holds a Bachelor of Science in Geology from New Mexico Institute of Mining and Technology and has over thirty years' experience working on environmental, hydrologic, and/or regulatory applications. At present, Mr. Goetze serves as a hearing examiner and senior petroleum geologist for the Engineering and Geological Services Bureau with OCD. In his capacity with OCD, Mr. Goetze provides technical review of administrative applications submitted to OCD and prepares OCD orders for non-standard locations, salt water disposal wells (UIC Class II wells), enhanced oil recovery projects, pool delineations, and non-standard proration

units. Mr. Goetze's qualifications are further detailed in his résumé, attached hereto and made a part hereof as EMNRD Exhibit 1.

3. Full Direct Testimony

Mr. Goetze's full direct testimony is set forth in EMNRD Exhibit 2, said EMNRD Exhibit 2 being attached hereto and made a part hereof.

4. Recommended Modifications

The OCD supports the Navajo's proposed substantive modifications to add 20.6.2.5360 B(9)NMAC and delete proposed rules 20.6.2.5371 NMAC and 20.6.2.5372 NMAC and, therefore, submits no additional proposed text to Navajo's Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC.

5. Identification of Exhibits

EMNRD Exhibit 1 Résumé of Phillip Goetze

EMNRD Exhibit 2 Written Testimony of Phillip Goetze

6. Representation

Mr. William Brancard and Ms. Allison Marks shall serve as counsel to EMNRD and hereby enter their appearances.

Respectfully submitted,
Energy, Minerals and Natural Resources Department
Oil Conservation Division

William Brancard, General Counsel
Allison R. Marks, Assistant General Counsel
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 S. St Francis Drive
Santa Fe, NM 87505
Tel.: (505)476-3206
Bill.Brancard@state.nm.us
AllisonR.Marks@state.nm.us

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

In the Matter of:	)	
PROPOSED AMENDMENT	)	**No. WQCC 14-15(R)**
To 20.6.2.3000 NMAC and 20.6.2.5000 NMAC	)	

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was sent via electronic mail to the following on this 15th day of June, 2015:

Pam Castañeda
Administrator
New Mexico Water Quality Control Commission
1190 S. St. Francis Drive, S-2102
Santa Fe, New Mexico 87502
Pam.Castaneda@state.nm.us

Wade Jackson
General Counsel
New Mexico Economic Development Dept.
1100 S. St. Francis Drive
Santa Fe, New Mexico 87505
Wade.jackson@state.nm.us

Andrew Knight
Billy Jimenez
Office of the General Counsel
New Mexico Environment Department
1190 S. St. Francis Drive
Santa Fe, New Mexico 87502-6110
Andrew.knight@state.nm.us
Billy.jimenez@state.nm.us

Paul T. Halajian
Christina C. Sheehan
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
P.O. Box 2168
Albuquerque, New Mexico 87103-2168
pth@modrall.com
ccs@modrall.com

Roger Martella, Jr.
Timothy Webster
Joel Visser
Sidley Austin, LLP
1501 K Street, N.W.
Washington, DC 20005
rmartella@sidley.com
twebster@sidley.com
jvisser@sidley.com

By: */s/ Allison R. Marks*
Allison R. Marks, Assistant General Counsel
Energy, Minerals and Natural Resources Department
Oil Conservation Division

PHILLIP R. GOETZE
Oil Conservation Division
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Over 30 years of experience developing and implementing a variety of projects with environmental, hydrologic, or regulatory applications.

PROFESSIONAL EXPERIENCES:

February 2013 to Present: Senior Petroleum Geologist / Hearing Examiner
Engineering and Geological Services Bureau, Oil Conservation Division, Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive, Santa Fe, NM 87505

Administrative permitting for development and management of oil and gas resources under the state Oil and Gas Act. These projects include technical review of administrative applications and preparation of orders for non-standard locations, salt water disposal wells (UIC Class II wells), enhanced oil recovery (EOR) projects, pool delineations, and non-standard proration units.
Additional experiences related to the position:

- Provide technical assistance to District personnel and General Counsel staff regarding compliance issues for disposal and EOR wells.
- Prepare quarterly reports for review by the UIC coordinator for submission to the USEPA.
- Recommend changes in policy reflecting application of new technology or processes.
- Provided expert testimony before the Oil Conservation Commission for applications and in support of rulemaking.

Appointed as hearing examiner by the Division Director under 19.15.4.18 NMAC.

March 2007 to February 2013: Hydrogeologist / Environmental Scientist / Project Manager
Gloreita Geoscience, Incorporated
1723 Second Street, Santa Fe, NM 87505

Multiple projects for environmental, hydrologic, and natural resource assessments including:

- Los Alamos National Laboratory (LANL): contract team leader for ground-water sampling (including springs, shallow wells, monitoring wells with Baski and Westbay systems) in support of the Ground Water Stewardship Program; four years of sediment mapping and soil sampling for contaminants as part of the LANL assessment of geomorphic influences following the Cerro Grande and Las Conchas fires; geodetic surveying (with Trimble RTK GPS and Geodimeter total station units) and waste characterization sampling following LANL protocols.
- Oversight of drilling, logging, and construction of deep exploration wells as part of Rio Rancho's City Water Program and the NM Office of the State Engineer (Ft. Sumner project).
- Hydrologic modeling and ground-water abatement plan development for multiple dairy facilities in southern and eastern New Mexico.
- Assistance in development of oil and gas projects for unconventional sources in Galisteo Basin.
- Numerous Phase I Environmental Site Assessments (ESAs) for commercial, industrial, and undeveloped properties in northern New Mexico, Nevada, and Texas.
- Establish protocols, sampling requirements, and compile data for annual reporting for clients with Closure and Post Closure plans for landfills.
- Oversight of petroleum storage tank removals, closures, and Minimum Site Investigations following closure.
- Preparation and annual reporting of NPDES permits for commercial clients in New Mexico.

Preparation and implementation of Stage I Abatement Plans for dairies in violation of the NMWQCC ground-water standards.
Quality assurance for various sampling programs including mandatory monitoring and special client-specific events.

April 2006 to January 2007: Hydrogeologist / Project Manager
Tetra Tech EM Incorporated
6121 Indian School Road NE, Suite 205, Albuquerque, NM 87110

This position included responsibility for redevelopment of previous client relationships while maintaining obligations to state, Federal and private projects. Most significant projects include the following:

Supervising geologist for drilling, construction, and development of deep monitoring wells at Kirtland Air Force Base for Long-Term Monitoring Program.
Preparation of sampling and analysis plans for Texas Department of Criminal Justice landfills.

September 1999 to March 2006: Hydrogeologist / Project Manager
ASCG Incorporated *of New Mexico* (now the WH Pacific Corporation)
6501 Americas Parkway NE, Suite 400, Albuquerque, NM 87110

Responsible for a variety of environmental services for site assessment and remediation of contaminated sites associated with Federal, state, and private clients in New Mexico, Arizona, and the Navajo Nation. Significant projects entail the following:

Field Technical Leader (as subcontractor) for drilling, construction, and development of deep and shallow monitoring wells at LANL for 2005.
Developed and supervised assessment drilling programs for Risk-Based Corrective Action assessments of petroleum-contaminated NMED and Bureau of Indian Affairs (BIA) sites in New Mexico and Arizona.
Responsible for project development and management of soil and ground-water remediation of hydrocarbon and solvent-contaminated sites including quarterly water sampling events and air monitoring for compliance.
Supervised and participated in resolution of correction actions identified under USEPA CA/CO 1998-02 at approximately 35 Bureau of Indian Affairs federal facilities including review of asbestos programs, PCB investigations and remediations, Phase I ESAs for property transfer, AST/UST removals, hazardous waste disposal activities, environmental audits, and validation sampling of previous remedial activities.
Completed development and oversight of voluntary corrective actions of hazardous wastes cited in notice of violations at the Southwestern Polytechnic Indian Institute.
Provided sampling program for the AMAFCA Storm Water Study for assistance in compliance of the MS4 for the City of Albuquerque.
Completed assessment for hydrocarbon contamination and prepared plans for remedial actions for five locations at BIA facilities during the last quarter of 2004.

July 1996 to August 1999: Geologist / Environmental Scientist; General Contractor
Phillip R. Goetze, Consulting Geologist, Edgewood, New Mexico

Subcontractor for environmental firms providing on-site technical support and report preparation. Primary contractors included the following:

Billings and Associates, Inc., Albuquerque, New Mexico
Responsible for acquisition of both soil and water data for assessment and for installation of remediation systems for hydrocarbon-contaminated sites.

Roy F. Weston Inc., Albuquerque, New Mexico
Temporary position with responsibilities for on-site supervisor for data acquisition (three drilling rigs), for health and safety monitoring, and for quality assurance of installation of

multiple ground-water wells at a Department of Energy tailings remediation (UMTRA) site near Tuba City, Arizona.

January 1993 to July 1996: Project Geologist / Project Manager
Billings and Associates, Inc.
6808 Academy Pkwy, E-NE, Suite A-4, Albuquerque, NM 87109

Responsible for acquisition of air, soil, and water data for site assessments related to leaking underground storage tanks throughout New Mexico. Participated and supervised installation, operation, and maintenance of biosparging/SVE remediation systems at five New Mexico locations.

June 1985 to December 1992: Independent Geologist and Environmental Scientist
Phillip R. Goetze, Consulting Geologist, Albuquerque, New Mexico

Subcontracting services for data acquisition in geophysics and mineral exploration. Primary contractors included:

Charles B. Reynolds and Associates, Albuquerque, New Mexico

Performed functions of seismologist and crew chief for consulting group specializing in shallow seismic geophysics for environmental and engineering applications. Projects included USGS hydrologic assessment of Mesilla Bolson; plume and paleosurface mapping at Johnson Space Center facility north of Las Cruces; plume and paleosurface mapping in Mortandad Canyon and TA-22 site, LANL; plume and paleosurface mapping at Western Pipeline facility at Thoreau, NM; plume and paleosurface mapping at UNC Partners mill and tailings site north of Milan; engineering assessment of collapsible soils at Tanoan residential development and along the east edge of Albuquerque.

Glorieta Geoscience, Santa Fe, New Mexico

Initiated and conducted sampling program for assessing economic potential of low-grade gold occurrence in southwest New Mexico.

November 1983 to September 1984: Fluid Minerals Geologist
Bureau of Land Management, Department of Interior, Cheyenne, Wyoming

Temporary detail to Casper office to alleviate backlog of assessments of federal oil and gas leases in Wyoming and Nebraska. Assessments required geologic evaluation of oil and gas potential for lands in Powder River, Wind River, Big Horn and Denver-Julesburg Basins. Determination of "known geologic structure (KGS)" per Secretarial Order for categorizing of federal oil and gas minerals into competitive and non-competitive status. Deposed as expert witness and provide summaries for Interior Board of Land Appeals (example IBLA 84-798).

June 1982 to September 1983: Field Geologist
United States Bureau of Mines, Department of Interior, Lakewood, Colorado

Assisted primary authors with field inventory and evaluation of mineral occurrences in 15 wilderness areas in Colorado (Central Mineralized Region), southern Wyoming, and eastern Utah. Field work included mapping and sampling of abandoned mines and mineral occurrences within these areas and adjacent areas with potential impacts on wilderness designation.

July 1979 to January 1982: Geologist
United States Geological Survey, Department of Interior, Casper, Wyoming and Lakewood, Colorado

First two years exclusively mapping, drilling, and classifying coal resources in south central Wyoming. Detailed for two years to special team for preparation of impact statement: one of four principle authors for the Cache Creek-Bear Thrust Environmental Impact Statement which documented effects of two proposed oil and gas wells in designated wilderness area near

Jackson, Wyoming. Deposed as expert witness in federal court. Final year primarily responsible for assessments of federal oil and gas leases for lands in Wyoming and Nebraska.

July 1977 to July 1979: District Geologist
Bureau of Land Management, Department of Interior, Socorro District Office, Socorro, New Mexico
Responsible for District minerals program for federal lands in west central portion of state. Assisted in environmental reports for land exchanges, classification of saleable mineral sites, mining claim validity determinations, inspection of surface reclamation for mineral extractions, and assessments for location of water wells in support of grazing projects.

EDUCATION:
New Mexico Institute of Mining and Technology, Socorro, New Mexico
Bachelor of Science in Geology, 1977

Additional Courses for: Asbestos Inspector (LA); Licensed Contractor (NM); Lead-Based Paint Risk Assessor (EPA Regions VI and IX); Application of Ground Penetrating Radar

PROFESSIONAL MEMBERSHIPS, LICENSES, OR CERTIFICATIONS:
American Association of Petroleum Geologists, Member No. 51,310
American Institute of Professional Geologist, Certified Professional Geologist No. 6,657
Alliance of Hazardous Materials Professionals, CHMM No. 11,401
ASTM International, Member No. 1314118 (Voting Member); Committees D18 (Soil and Rock) and E50 (Environmental Assessment, Risk Management and Corrective Action)
OSHA 40HR and 8HR Refresher Hazardous Waste Operations and Emergency Response (Current)
OSHA Hazardous Waste Operations and Emergency Response Manager/Supervisor (Current)
State of Alaska, Licensed Professional Geologist No. 514
State of Arizona, Registered Professional Geologist No. 40,812
State of Nevada, Certified Environmental Manager 2,218
State of Texas, Licensed Professional Geologist No. 2,278

SELECTED PUBLICATIONS:
Drakos, P. G., Reneau, S. L., Shultz-Fellenz, E. S., Riesterer, J. W., Kelley, R., Miller, E. D., **Goetze, P. R.**, and Chamberlain, P., 2012, Post-Fire Sediment Transport and Erosion in the Water Canyon and Canon de Valle Watershed, Jemez Mountains, New Mexico; 11th Annual Española Basin Workshop, New Mexico Bureau of Geology and Mineral Resources Open-file Report 547.

Goetze, P. R., 1981, Regional geologic map for the Cache Creek-Bear Thrust Environmental Impact Statement, Teton and Sublette Counties, Wyoming, U. S. Geological Survey Open-File Report 81-856, scale 1:48,000.

Reneau, S. L., Drakos, P. G., Riesterer, J. W., **Goetze, P. R.**, Shultz-Fellenz, E. S., Miller, E. D., and Katzman, D., 2011, Watershed-Scale Investigation of Sediment Contamination-Chromium and PCBs in Sandia Canyon, Pajarito Plateau, New Mexico; 10th Annual Española Basin Workshop, New Mexico Bureau of Geology and Mineral Resources Open-file Report 536.

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

In the Matter of:	)	
PROPOSED AMENDMENT	)	**No. WQCC 14-15(R)**
To 20.6.2.3000 NMAC and 20.6.2.5000 NMAC	)	

TECHNICAL TESTIMONY BY

PHILLIP R. GOETZE, PG, RG, CHMM, CEM

My name is Phillip R. Goetze, and I am employed by the Oil Conservation Division ("OCD" or "Division") of the Energy, Minerals and Natural Resources Department ("ENMRD"), State of New Mexico. I am presenting this written testimony in support of the petition by Navajo Refining Company, LLC ("Navajo") to the New Mexico Water Quality Control Commission ("Commission") to amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC (the "Rule") relating to the type of injection wells permitted by the OCD.

I. Education and Experience

I am a professional geologist licensed in the states of Alaska, Arizona, and Texas. I am also a certified environmental manager and a certified hazardous material manager by the Alliance of Hazardous Materials Professionals. My education includes a Bachelor's degree in Geology and formal courses offered through professional organizations such as the National Ground Water Association.

I have over 30 years of diverse experience involving environmental, hydrologic, mineral extraction, and regulatory projects. My early employment included positions as a field geologist

and fluid minerals geologist for the United States Geological Survey, the United States Bureau of Mines, and the United States Bureau of Land Management.

Beginning in the 1980s, I was employed by a variety of companies in the private sector that were involved in environmental projects. Examples of these projects included investigations and remediation of leaking underground petroleum storage tank sites in Arizona and New Mexico; seismic investigations, geomorphic mapping, media sampling, drilling and sampling supervision at Los Alamos National Laboratory; environmental audits and remediation activities at numerous Bureau of Indian Affairs facilities within the Navajo Nation; project geologist for the drilling of deep and shallow water production wells in New Mexico; and management for compliance of discharge plans and abatement plans for several dairy farms in southeast New Mexico.

I have been employed since 2013 by the OCD as a petroleum geologist within the Engineering and Geological Services Bureau. My primary task involves technical review of administrative applications including applications for injection under the Underground Injection Control ("UIC") Program as established under the Safe Drinking Water Act. My other major responsibilities are hearing examiner for Division as part of the adjudication process authorized under the New Mexico Oil and Gas Act and technical advisor in support of OCD guidance documents and the OCD rule-making process.

I have been qualified as an expert witness in hearings before the Oil Conservation Commission and have provided testimony in mineral and environmental cases heard before the Department of the Interior's Interior Board of Land Appeals and United States District Court. A copy of my résumé is attached as **ENMRD Exhibit 1**.

II. Purpose of Proposed Amendment

The Petitioner for the Rule, Navajo, is currently operating three UIC Class I (non-hazardous) waste injection wells in support of waste water management at its Artesia refinery in southeast New Mexico. These wells are reaching the limits of the available reservoir capacity for the disposal of wastewater. Navajo has made application for approval of a new Class I (non-hazardous) waste injection well to supplement the declining capacities of the existing wells. Navajo has also identified a need to address possible changes in the characteristics of the waste stream that may be disposed in the new Class I (non-hazardous) waste injection well. Navajo has proposed an increase in the operation of the reverse osmosis ("RO") system at the Artesia refinery which may result in a corresponding increase in certain constituents in the waste water. Navajo has identified at least one constituent that may exceed the toxicity characteristic for hazardous waste. The use of the RO system reduces the consumption of potable water resources and a reduction in volume in waste generated from industrial processes at the refinery.

Therefore, Navajo has requested the Rule be considered by the Commission in order to allow the capability of converting the new Class I (non-hazardous) waste injection well to a Class I (hazardous) waste injection well if the waste characteristics of the RO reject change with the increased operation.

Overall, the oil and gas industry has seen a dramatic rise in production with the application of horizontal drilling and multistage fracturing of reservoirs that were once considered uneconomical. This increase in hydrocarbon production has initiated the requirement by industry to develop new processing methods that are more efficient and reduce the need for consumption of limited resources, such as drinking water, for refinery operations. With these improvements, the waste stream produced by refineries will change and may include a portion

that could be characterized as hazardous. Disposal of these wastes into deep formations by using a Class I (hazardous) waste injection well would allow the flexibility in operation required by refineries with the changes in production. Alternative methods for disposal of hazardous waste, such as transportation to an off-site facility, may increase the potential for release and exposure. Approval of the Rule would provide the opportunity for safe and efficient disposal of hazardous waste generated at refineries that are changing procedures or expanding operations.

III. Consideration of the Rule as Proposed

OCD was provided the opportunity to participate in the development of the Rule being proposed before the Commission. This participation allowed for additional content that has been incorporated in the final version. This includes the review of the Class I (hazardous) waste injection well application using procedures currently employed for Class II waste injection wells under Title 19 Chapter 15 of the New Mexico Administrative Code. These procedures include a greater level of notification of affected parties and the assessment of the proposed injection interval for hydrocarbon potential. One of the notification requirements for Class II waste injection wells requires notification within a one-half mile radius of the proposed well of Division-designated operator for the tract, or mineral lessees, if no designated operator is identified, or finally, the mineral estate owner, if neither an operator nor lessee is identified for the tract. This notification process allows for protest of the application with resolution through negotiation or hearing before the Division or Oil Conservation Commission.

The Rule makes the notice radius for property owners one-half mile for Class I (hazardous) waste injection wells as compared to the one-third mile radius for Class I (non-hazardous) waste injection wells. This increase in notification will provide property owners

greater opportunity for participation in the application process including the ability to protest the application.

The assessment of the injection interval provides for the protection of natural resources entrusted to OCD under the New Mexico Oil and Gas Act. The proposed injection interval for a Class I (hazardous) waste injection well application will likely delineate deeper formations that satisfy the requirements for confining layers that may have higher potentials for undiscovered hydrocarbon resources. The proposed changes in the Rule will prevent the waste of hydrocarbon resources while reviewing the injection interval for the engineering and geological criteria required under the UIC Program.

The Rule includes the standard minimum distance of two miles for determining the radius of the Area of Review ("AOR") used to identify wells penetrating the proposed injection interval. This AOR is consistent with the minimum distance required under federal regulation. The Rule also provides the Director of the OCD the authority to increase the AOR should the calculated cone of influence be greater than the standard two-mile radius.

In general, the Rule satisfies all the minimum siting criteria as well as the requirements for construction, operation, monitoring, reporting, closure, and post-closure care currently included in the federal regulations for permitting a Class I (hazardous) waste injection well. The Rule also offers a greater scope of protection and exceeds the federal requirements due to the state's expanded definition of protectable waters

Review of the filing fee, permit fee, annual administration fee, renewal fee, modification fee, and financial assurance fee proposed in the Rule is reasonable and appropriate for the scope of evaluation of an application for a Class I (hazardous) waste injection well associated with a refinery operation and the associated follow-up review associated therewith. A review of other

states' fees indicate the proposed fees are comparable with UIC Class I (hazardous) wells across the nation, and the OCD believes that, if ever needed due to the event of any staffing shortages, the proposed fees will allow the OCD to obtain contract resources to assist in any applicable review.

IV. Division as Administrator of Class I (Hazardous) Waste Injection Wells

OCD currently administers approximately 4025 active UIC Class II injection wells for gas storage, disposal, or enhanced oil recovery. OCD also administers five UIC Class I (non-hazardous) waste injection wells and 10 UIC Class III brine wells. The majority of the UIC wells are located within two OCD Districts, the Hobbs District and the Artesia District, that comprise the Permian Basin of southeast New Mexico. A minor number of UIC wells, including one UIC Class I (non-hazardous) waste injection well, are located in the Aztec District which administers the portion of New Mexico that is within the San Juan Basin. The compliance inspectors in the Districts are supported by the technical staff of the Environmental Bureau and the Engineering and Geological Services Bureau located in Santa Fe.

Both the Environmental Bureau and the Engineering and Geological Services Bureau are responsible for the technical review of applications for injection authority. Participation in the evaluation is based on the type of UIC well application being submitted and the expertise required for proper review. An application of a Class I (non-hazardous) waste injection well currently requires the review of casing and cement programs by a registered petroleum engineer along with an assessment of the siting criteria, such as the hydrology and hydrocarbon potential of the proposed well, by a qualified geologist. This effort includes a comprehensive review of oil and gas wells in the AOR radius that penetrate the proposed injection interval and may become possible conduits for migration of injected fluids out of the interval. This level of

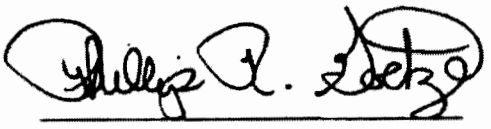
technical review would also be extended to any applications for Class I (hazardous) waste injection wells. The expansion of the OCD UIC program to Class I (hazardous) waste injection wells associated with oil and gas operations is well within the capacity of the OCD program as OCD currently undertakes most of the reviews for injection well applications processed by the state.

The Rule limits the potential applicants, oil and gas refineries, and restricts the source of injection waste, water conservation operations at the facilities. Again, the applications to be submitted under the Rule would be consistent with the experience and expertise found within the Division.

OCD also has available expertise through its long standing relationship with the New Mexico Bureau of Geology and Mineral Resources and New Mexico Institute of Mining and Technology. Both organizations have been employed through contract or public forum to assist OCD when technical issues have developed a need for expertise not available within the Division.

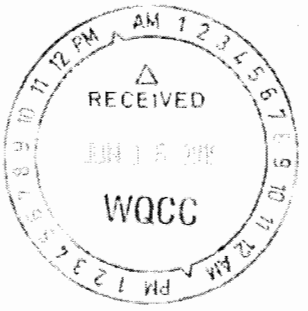
In conclusion, the adoption of the Rule would provide an opportunity for greater beneficial use of hydrocarbon resources, reduction in the use of limited water resources, and, if properly implemented (which would be done through the OCD), provide for the protection of the environment. The OCD believes this Rule should be adopted by the Commission. This concludes my direct testimony. Thank you.

Respectfully submitted,



MODRALL SPERLING

LAWYERS



Christina C. Sheehan
505.848.1868
Fax: 505.848.1891
ccs@modrall.com

June 16, 2015

Pam Castañeda
Administrator
New Mexico Water Quality Control Commission
1190 South Saint Francis Drive, S-2102
Santa Fe, New Mexico 87502

Re: In the Matter of Petition to Amend 20.6.2.300 NMAC and 20.6.2.5000 NMAC

Dear Ms. Castañeda:

Enclosed please find the original and fifteen copies of the following documents, which were all electronically filed on Monday, June 15, 2015:

1. Navajo Refining Company, L.L.C's Notice of Intent to Present Technical Testimony

2. The Direct Testimony of Robert O'Brien

3. The Following Exhibits for Direct Testimony of Robert O'Brien:

   - Pre-filed direct testimony of Robert O'Brien
   - O'Brien Exhibit A – Resume for Robert O'Brien
   - O'Brien Exhibit B – Proposed Water Conservation Rule – June 15, 2015

4. The Direct Testimony of Michael McKee

5. The Following Exhibits for Direct Testimony of Michael McKee:

   - Pre-filed direct testimony of Michael McKee
   - McKee Exhibit A – Resume for Michael McKee

Modrall Sperling
Roehl Harris & Sisk
P.A.

Bank of America
Centre
500 Fourth Street
NW
Suite 1000
Albuquerque,
New Mexico 87102

PO Box 2168
Albuquerque,
New Mexico
87103-2168

Tel: 505.848.1800
www.modrall.com

6. The Direct Testimony of Robert F. Van Voorhees

7. The Following Exhibits for Direct Testimony of Robert F. Van Voorhees:

- Pre-filed direct testimony of Robert F. Van Voorhees
- Van Voorhees Exhibit A – *Curriculum Vitae* for Robert F. Van Voorhees
- Van Voorhees Exhibit B – J.E. Clark, D.K. Bonura & R.F. Van Voorhees, "An Overview of Injection Well History in the United States of America" Underground Injection Science and Technology (C.F. Tsang & J.A. Apps, eds.) (2005)
- Van Voorhees Exhibit C – Van Voorhees, R., "Removed from the Environment," 18 Env. L. Forum 23 (2005)
- Van Voorhees Exhibit D – EPA Poster "Safe Drinking Water Act Underground Injection Control (UIC) Program Protecting Public Health and Drinking Water Resources," (EPA 816-H-10-001) (November 2010)
- Van Voorhees Exhibit E– EPA, "UIC Inventory by State – 2011"
- Van Voorhees Exhibit F – EPA, "Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells," xiii (EPA 816-R-01-007) (2001) ("Class I Study of the Risks")
- Van Voorhees Exhibit G – EPA, U.S. EPA's Program to Regulate the Placement of Waste Water and other Fluids Underground," EPA 816-F-04-040 (June 2004)
- Van Voorhees Exhibit H – Navajo Refining Company, Summary of Proposed Water Conservation Rule
- Van Voorhees Exhibit I – Rish, W.A., Ijaz, T. and Long T.F. (1998). "A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells" in Underground

Injection Science and Technology (C.F. Tsang & J.A. Apps, eds.) (2005)

8. The Direct Testimony of Alberto A. Gutierrez

9. The Following Exhibits for Direct Testimony of Alberto A. Gutierrez:

   - Pre-filed direct testimony of Alberto A. Gutierrez
   - Gutierrez Exhibit A – *Curriculum Vitae* for Alberto A. Gutierrez
   - Gutierrez Exhibit B – Well Design Schematic
   - Gutierrez Exhibit C – Geolex PowerPoint Presentation, "Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC"

10. The Direct Testimony of Francisco Salvarrey

11. The Following Exhibits for Direct Testimony of Francisco Salvarrey:

    - Pre-filed direct testimony of Francisco Salvarrey
    - Exhibit A – Resume for Francisco Salvarrey

Please let me know if you have any questions.

Sincerely,

Christina C. Sheehan

CCS/daa
Enclosures: as stated

Y:\dox\client\81108\0118\CORRES\W2465438.DOCX

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC Navajo Refining Company, L.L.C., Petitioner.	No. WQCC 14-15 (R)

NAVAJO REFINING COMPANY, L.L.C.'S
NOTICE OF INTENT TO PRESENT TECHNICAL TESTIMONY

Navajo Refining Company, L.L.C. ("Navajo Refining"), pursuant to Section E.a. of the Procedural Order issued on May 15, 2015, hereby files this Notice of Intent to Present Technical Testimony at the Proposed Amendments to 20.6.2.3000 NMAC and 20.6.2.5000 NMAC hearing scheduled for July 14, 2015.

1. **Identify the person or entity for whom the witness(es) will testify.**

The technical witnesses identified herein will testify for Navajo Refining.

2. **Identify each technical witness the person intends to present and state the qualifications of that witness, including a description of their educational and work background.**

Navajo Refining will call the following witnesses at the hearing to present direct technical testimony:

a) Robert O'Brien is a technical witness who will testify about the operations of Navajo Refining's refinery, the refinery's wastewater management systems, water conservation initiatives identified by the refinery, the refinery's role in the local community, and the benefits of the proposed regulations. His testimony will also address issues related to whether the proposed regulations are protective of human health and the environment and related matters. His qualifications, education, and work background are included in his written testimony and attached exhibits.

b) Michael McKee is a technical witness who will testify about the operations of Navajo Refining's refinery, water conservation initiatives identified by the refinery, and the benefits of the proposed regulations. His testimony will also address issues related to whether the proposed regulations are protective of human health and the environment and related matters. His qualifications, education, and work background are included in his written testimony and attached exhibits.

c) Robert F. Van Voorhees is a technical witness who will testify regarding the history of the U.S. Environmental Protection Agency's ("EPA's") Underground Injection Control ("UIC") program, the history of the UIC Class I hazardous waste injection well program, and the history of EPA's delegation of authority over the UIC program to New Mexico, the content of the proposed regulations as they relate to EPA and State standards. He will also provide testimony that the proposed regulations are protective of human health and the environment and on other related matters. His qualifications, education, and work background are included in his written testimony and attached exhibits.

d) Alberto A. Gutierrez is a technical witness who will testify regarding the geologic and engineering factors necessary to ensure that Class I hazardous waste underground disposal wells are protective of groundwater of the state of New Mexico and the history of UIC wells in the state of New Mexico. He will also provide testimony that the proposed regulations are protective of human health and the environment more generally and on other related matters. His qualifications, education, and work background are included in his written testimony and attached exhibits.

e) Francisco Salvarrey is a technical witness who will testify about the importance of groundwater resources in New Mexico, the local and regional water supply/demand conditions in

southeast New Mexico, the general relationship between the City of Artesia and Navajo Refining with respect to water demands, the efforts by the City and its citizens and partners to plan for the future of water use and conservation, the impact that water conservation by Navajo Refining may have on those plans, and related matters. His qualifications, education, and work background are included in his written testimony and attached exhibits.

3. Attach the full written direct testimony of each technical witness, which shall include an express basis for all expert opinions offered.

The direct testimony of each technical witness is attached.

4. Include the text of any recommended modifications to the proposed regulatory changes.

Navajo Refining is proposing several recommended modifications to the regulatory changes it proposed in its Second Petition to Amend Sections 20.6.2.3000 NMAC and Sections 20.6.2.5000 NMAC. The basis for the recommended modifications, as well a redline version of the modified text, is included in the direct written testimony of Robert O'Brien. The proposed modifications include a number of clerical changes to reflect the fact that under the proposed regulations certain Class I hazardous waste injection wells would be permitted, and to reflect the fact that the Director of OCD rather than the Administrator of U.S. EPA would be responsible for implementing the program. The proposed modifications also include a recommended change that would have the effect of retaining the authority for reviewing no migration petitions with EPA, which is the current situation. Thus, under the recommended modifications, OCD would retain authority to issue Class I hazardous waste injection well permits, but successful permit applicants would have to obtain a no migration exclusion from EPA Region 6 before they could commence injection of hazardous waste pursuant to a Class I hazardous waste injection well permit. In addition, a complete draft of the proposed regulations that incorporates the

recommended modifications is included as Exhibit B to the direct written testimony of Robert O'Brien.

5. Identify and attach all exhibits to be offered by the person at the hearing.

The following testimony and exhibits will be offered at the hearing:

Exhibits for Direct Testimony of Robert O'Brien:

- Pre-filed direct testimony of Robert O'Brien
- O'Brien Exhibit A – Resume for Robert O'Brien
- O'Brien Exhibit B – Proposed Water Conservation Rule – June 15, 2015

Exhibits for Direct Testimony of Michael McKee:

- Pre-filed direct testimony of Michael McKee
- McKee Exhibit A – Resume for Michael McKee

Exhibits for Direct Testimony of Robert F. Van Voorhees:

- Pre-filed direct testimony of Robert F. Van Voorhees
- Van Voorhees Exhibit A – *Curriculum Vitae* for Robert F. Van Voorhees
- Van Voorhees Exhibit B – J.E. Clark, D.K. Bonura & R.F. Van Voorhees, "An Overview of Injection Well History in the United States of America" Underground Injection Science and Technology (C.F. Tsang & J.A. Apps, eds.) (2005)
- Van Voorhees Exhibit C – Van Voorhees, R., "Removed from the Environment," 18 Env. L. Forum 23 (2005)
- Van Voorhees Exhibit D – EPA Poster "Safe Drinking Water Act Underground Injection Control (UIC) Program Protecting Public Health and Drinking Water Resources," (EPA 816-H-10-001) (November 2010)

- Van Voorhees Exhibit E– EPA, "UIC Inventory by State – 2011"
- Van Voorhees Exhibit F – EPA, "Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells," xiii (EPA 816-R-01-007) (2001) ("Class I Study of the Risks")
- Van Voorhees Exhibit G – EPA, U.S. EPA's Program to Regulate the Placement of Waste Water and other Fluids Underground," EPA 816-F-04-040 (June 2004)
- Van Voorhees Exhibit H – Navajo Refining Company, Summary of Proposed Water Conservation Rule
- Van Voorhees Exhibit I – Rish, W.A., Ijaz, T. and Long T.F. (1998). "A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells" in Underground Injection Science and Technology (C.F. Tsang & J.A. Apps, eds.) (2005)

Exhibits for Direct Testimony of Alberto A. Gutierrez:

- Pre-filed direct testimony of Alberto A. Gutierrez
- Gutierrez Exhibit A – *Curriculum Vitae* for Alberto A. Gutierrez
- Gutierrez Exhibit B – Well Design Schematic
- Gutierrez Exhibit C – Geolex PowerPoint Presentation, "Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC"

Exhibits for Direct Testimony of Francisco Salvarrey:

- Pre-filed direct testimony of Francisco Salvarrey
- Exhibit A – Resume for Francisco Salvarrey

6. Reservation of Rights

Navajo Refining reserves the right to call any other person to present original and/or rebuttal testimony in response to another notice of intent or public comment filed in this matter or any testimony, exhibit, or question presented at the public hearing.

Respectfully submitted this 15th day of June, 2015,

By: _____

Paul Halajian
Christina C. Sheehan
MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A.
P.O. Box 2168
Albuquerque, NM 87103-2168
Telephone: (505) 848-1850
Facsimile: (505) 848-9710
pth@modrall.com
ccs@modrall.com

Roger R. Martella
Timothy K. Webster
Joel F. Visser
SIDLEY AUSTIN LLP
1501 K Street, NW
Washington, DC 20005
Telephone: (202) 736-8000
Facsimile: (202) 736-8711
rmartella@sidley.com
twebster@sidley.com
jvisser@sidley.com

Attorneys for Navajo Refinery Company

I HEREBY CERTIFY that a true and correct copy of the foregoing was emailed to the following on the 15th day of July, 2015:

Pam Castañeda
Administrator
New Mexico Water Quality Control
Commission
1190 South Saint Francis Drive, S-2102
Santa Fe, New Mexico 87502

Andrew Knight
Assistant General Counsel
Office of General Counsel
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502-6110
Email: Andrew.knight@state.nm.us

Bill Brancard
New Mexico Energy, Minerals, and Natural
Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us

Wade Jackson
General Counsel
New Mexico Economic Development
Department
Joseph Montoya Building
1100 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Wade.Jackson@state.nm.us
Counsel for the Commission

By: _____
Christina C. Sheehan

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC **Navajo Refining Company, L.L.C.,** **Petitioner.**	**WQCC 14-15 (R)**

DIRECT TESTIMONY OF

ROBERT O'BRIEN

ON BEHALF OF

NAVAJO REFINING COMPANY, L.L.C.

June 15, 2015

Contents

1. Please state your name and business address.

My name is Robert O'Brien. My business address is 501 E. Main Street, Artesia, New Mexico 88211.

2. Please state your qualifications to provide this testimony.

I am a chemical engineer with nearly 35 years of experience in the oil and gas industry and a focus on refinery operations. I have a B.S. (magna cum laude) in Chemical Engineering from the University of Cincinnati. I am currently the Vice President and Refinery Manager for Navajo Refinery. In that role, I am responsible for the operation of Navajo Refining's facilities in Artesia and Lovington, New Mexico (the "Navajo Refinery"). Prior to joining Navajo Refining, I worked in a variety of capacities for Shell Oil Products, many of which involved Shell's refinery operations. In my current position, I have been involved in all aspects of the refinery's operations and planning, including the submission of this rulemaking petition. My resume is attached to this testimony as Exhibit A.

3. Please provide an overview of Navajo Refinery's operations.

Navajo Refinery's operations involve the conversion of crude oil into transportation fuels and other desirable products. The refinery consists of two facilities in Artesia and Lovington, New Mexico. The Lovington facility processes crude oil into intermediate products. The Artesia facilities process crude oil as well as intermediate products from the Lovington facility into final products. The refinery processes crude oil from the Permian Basin and from western Canada, although the crude slate varies based on availability and on market conditions. Table 1 below provides a representative sample of the refinery's crude slate. The refinery has a nominal rating of 100,000 barrels/day (bpd). Production varies based on the types of crude oil that are processed at the refinery.

Table 1:

Crude Origin	Percent
New Mexico	77%
Texas	20%
Canada	3%
Total	100%

4. What products does the Navajo Refinery produce?

The Navajo Refinery produces transportation fuels and a number of other products. The primary products produced by the refinery are gasoline and diesel fuel, which comprise nearly 90% of total production. Other products produced at the refinery include propane, fuel oil, asphalt, and sulfur. The composition of the final products produced at the refinery can vary depending on the types of crude oil that are processed and on market conditions. Table 2 below is a representative example of the refinery's production.

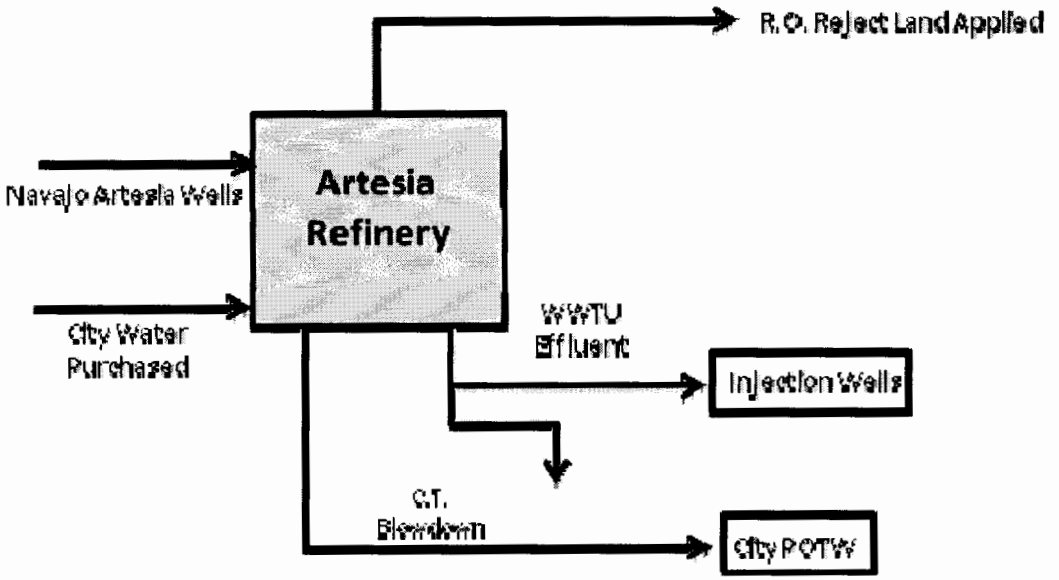
Table 2:

2013 Annualized Production (excluding fuel gas produced)	Barrels per Day	%
Propane	821	0.9%
Gasoline	44,702	49.2%
Ultra Low Sulfur Diesel	36,079	39.7%
Fuel Oil	5,392	5.9%
Asphalt	2,774	3.1%
Sulfur	290	0.3%

5. What byproducts are produced during the refining process?

Navajo Refinery has several waste streams that potentially could be disposed of in an injection well under appropriate conditions and circumstances. First, effluent from the refinery's wastewater treatment plant is currently disposed of in three UIC Class I nonhazardous waste injection wells operated by the refinery. In addition, a small stream of wastewater effluent is processed in Artesia's publicly owned treatment works (POTW). This effluent comes from a number of different processes within the refinery including washdown, sour water stream, wash water from process units and other operations. Second, blowdown from the refinery's cooling towers is sent to Artesia's POTW for treatment prior to discharge. Third, the refinery's reverse osmosis (RO) units produce RO reject fluid which is land applied pursuant to a discharge permit issued by New Mexico Oil Conservation Division (OCD). The RO process purifies fresh water by removing total dissolved solids (TDS), and the RO reject fluid contains those dissolved solids. The solids were contained in the fresh water obtained by the refinery, but they are concentrated by the RO process. A diagram of the refinery's wastewater streams is provided in Figure 1 below:

Figure 1:



In addition to these wastewater streams, Navajo Refinery produces other byproducts which, based on their physical and chemical composition, cannot be disposed of through underground injection. First, the refinery produces air emissions which are subject to separate permitting requirements under state and federal law. Second, the refinery produces solid wastes, sludges, sediments, liquid wastes, and spent catalysts that are transported off-site to landfills, fuel blenders, incinerators, or reclamation facilities for reclamation, treatment, or disposal.

6. Are any of the byproducts described above currently considered hazardous waste under state or federal law?

Yes. Some of the solid waste produced by the refinery (including sediments, sludges, and liquid waste) are considered hazardous waste, but these byproducts are not suitable for underground injection and are reclaimed, treated, or disposed of off-site in accordance with state and federal regulations. Effluent from the wastewater treatment unit does not qualify as a hazardous waste under normal operating conditions.

7. Could any of the wastewater byproducts be considered hazardous waste if they contained constituents in greater concentrations?

Potentially yes, depending on the concentrations of certain constituents. As I understand it, one of the factors for determining whether a substance like wastewater is a hazardous waste relates to the concentrations of specific constituents in that wastewater. Wastewater that is nonhazardous can become hazardous if the ratio of water to those specific constituents exceeds a threshold set by U.S. EPA. Thus, effluent from the refinery's wastewater treatment unit could qualify as characteristic hazardous waste in certain circumstances. Of the relevant constituents, selenium is currently present in the highest concentrations and would be the constituent most likely to trigger a hazardous waste determination, but only if it becomes concentrated. Other relevant chemicals present in effluent from the wastewater treatment unit include arsenic, barium, mercury, and benzene, but these chemicals are present in much lower concentrations than selenium. None of these constituents in the wastewater effluent currently exceed any hazardous waste threshold. The RO reject fluid that is currently land applied and the cooling tower blow-down/wastewater effluent disposed of through the Artesia POTW do not include any potentially hazardous chemical constituents beyond what is in the wastewater effluent, to my knowledge.

In addition, benzene is present in the wastewater that enters the treatment unit. While the wastewater treatment unit is designed to remove benzene from the effluent, it is possible that benzene could be present in effluent from the wastewater treatment unit if, for example, a malfunction were to occur.

8. Could Navajo Refinery reduce or eliminate those potentially hazardous byproducts through changes in refinery operations?

No. Constituents like selenium are naturally present in the crude oil that is processed at the refinery as well as in the fresh groundwater and water purchased from the City of Artesia. As a result, these constituents cannot be reduced or eliminated without reducing or eliminating refining capacity.

Nor are there any feasible alternatives for disposal. In response to previously high selenium concentrations in the wastewater treatment unit, the refinery has already installed a Selenium Reduction Treatment (SeRT) unit which removes selenium from the effluent stream and ensures that selenium concentrations in the wastewater treatment unit effluent remain below characteristically hazardous thresholds. The refinery is currently in the process of upgrading the SeRT unit to improve efficiency, which could further reduce but not eliminate selenium concentrations in the effluent. In addition, the refinery has also installed and operates an Iron Coprecipitation Process (ICP) to remove selenium from the final effluent prior to routing the effluent to the wells. Additional treatment technology for selenium beyond those currently planned are not economically feasible.

Other alternative treatment options such as evaporation ponds or brine crystallization are prohibitively expensive and are not a feasible alternative to underground injection for the entire wastewater effluent stream. Land application, which is currently used for RO reject, is not available for the refinery's wastewater treatment effluent because it would exceed applicable groundwater standards. Further disposal through Artesia's POTW is not available because the facility cannot remove selenium and other components described above to meet the POTW's discharge requirements.

9. Has Navajo Refinery had any compliance issues related to the injection of wastewater treatment unit effluent in UIC Class I nonhazardous waste injection wells?

The refinery has not experienced any issues with the operational integrity of any of its Class I nonhazarous injections wells. In 2013, Navajo Refinery discovered that, on several occasions, selenium concentrations in the wastewater treatment unit effluent exceeded the characteristically hazardous threshold. In response, the refinery entered into a settlement agreement with the state and purchased the ICP and SeRT units to remove selenium from the effluent stream prior to injection. Since that time, I am not aware of any issues related to the UIC Class I nonhazardous waste injection wells.

10. Why is Navajo Refinery interested in regulations that would authorize UIC Class I hazardous waste injection wells in New Mexico?

Navajo Refinery's primary interest in regulations that would authorize UIC Class I hazardous waste injection wells in New Mexico is additional operational flexibility. Having the opportunity to obtain a permit for and, if necessary, inject hazardous wastewater into a UIC disposal well would provide the refinery with the flexibility to make additional operational changes that would provide the following substantial benefits to the refinery and the community without creating productivity risks.

First, obtaining a Class I hazardous waste injection well permit would provide the refinery with the operational flexibility to implement water conservation measures that will have the effect of conserving a significant amount of water resources. The refinery is considering a variety of water conservation and re-use opportunities in the refinery. Implementing such water conservation measures will benefit the refinery and the local community by reducing the refinery's reliance on Artesia's public water supply and/or its well water. But the water

conservation math is simple: conserving water cannot be accomplished without concentrating chemical constituents in the remaining wastewater effluent. The more those constituents are concentrated, the greater the water savings, but the more likely it will be that the remaining effluent will become characteristically hazardous. This process would not itself create any new pollution, however. Receiving a Class I hazardous waste injection well permit would ensure that the refinery can continue to operate at full capacity, even if concentrations of selenium exceed the characteristically hazardous threshold in the future.

Second, Navajo Refinery is interested in constructing a Class I hazardous waste injection well at this time due to other operational needs at the refinery. Separately from any water conservation measures, Navajo Refinery is currently planning to permit and construct a fourth UIC well for disposal of wastewater from the refinery. The refinery's three existing Class I non-hazardous wells have finite storage capacity and due to their age and proximity to other wells, allowable injection rates are declining over time. Installing a fourth UIC well will ensure that the facility has the capacity to dispose of effluent from the wastewater treatment unit and would also provide an alternative to land application for RO reject fluid. Constructing a well that would comply with the more stringent standards for Class I hazardous waste injection wells would provide Navajo Refinery with operational flexibility going forward.

Navajo Refinery does not anticipate injecting any new waste streams into the well if it obtains a Class I hazardous waste injection well permit, aside from the secondary RO reject fluid (which is not projected to be characteristically hazardous).

11. How many people are employed in Artesia by Navajo Refining?

Navajo Refining and its affiliate companies currently employ approximately 850 people in Artesia. In addition, the refinery indirectly manages a significant number of people who work as contractors at the refinery or in support of refinery operations.

12. How large is the Navajo Refinery compared to other employers in the Artesia area?

Navajo Refinery and its affiliate companies are currently the largest private employer in the Artesia community and the second largest employer overall. Table 3 below, which was obtained from the Artesia Chamber of Commerce, lists the largest employers in Artesia.

Table 3:

Artesia's Major Employers	
Company	Employees
Federal Law Enforcement Training Center	920
Navajo Refining & Affiliates	850
Mack Energy and related companies	600
Artesia Public Schools	432
Yates Petroleum and related companies	350
Artesia General Hospital	275
Wal-Mart	225
Halliburton	220
Baker Hughes	210
City of Artesia	202
Concho Oil and Gas	175
J&J Home Care	120
Penasco Valley Telecommunications	102
Devon Energy	100

13. What investments has Navajo Refinery made to support the continued operations of the refinery?

Navajo Refining is committed to the Artesia community and had made significant capital investments in recent years to ensure the long-term viability of the facility. In 2002, our parent company's predecessor, Holly Corporation, commenced a three-phase expansion of the refinery that increased the capacity from approximately 70,000 bpd to a nominal rating of 100,000 bpd. This was a substantial undertaking and required an investment of nearly $1 billion in capital.

Since then Navajo Refining has continued to make capital investments to maintain and improve operations at the facility. For example, as discussed above, in 2013 Navajo Refining invested just over $5 million to install the SeRT unit to remove selenium from the refinery's effluent. In addition, the costs of the ongoing upgrade to the SeRT unit are projected to be approximately $4 million.

These investments demonstrate the commitment that Navajo Refinery and our parent company HollyFrontier Corp. have made to Artesia.

14. What tax benefits does Navajo Refinery provide to New Mexico and to the Artesia community?

In addition to being the largest employer in Artesia, Navajo is one of the largest property owners in the area. In 2014, the Navajo Refinery paid a total of $4,408,062.72 in property taxes, the majority of which support local activities. Our property is located partially inside and partially outside of Artesia's city limits, and the property tax distribution for each portion of the refinery's property is provided in Table 4 below:

Table 4:

	Residential (inside city limits)	Non-residential (outside city limits)
State	6.73%	6.12%
County	33.03%	33.74%
Municipal	8.74%	10.01%
Schools	36.28%	33.55%
Hospital	17.94%	16.57%

15. In what other ways does Navajo Refinery benefit the local community?

Navajo Refinery is an active member of the Artesia community and supports it in a number of ways. It is a major contributor to the new library in Artesia and to the Artesia Chamber of Commerce and the Artesia Main Street Association. The refinery also provides financial support to local schools, community events, social programs, community development initiatives, youth programs, youth sports, the arts, public safety programs, neighborhood programs, and other non-profit organizations.

Navajo Refinery also provides a wide range of non-financial support including a large team of volunteers who work within the community serving civic and social organizations and other non-profit organizations. In addition, Navajo Refinery participates in joint drills with local emergency responders.

16. Is Navajo Refining recommending any changes to the proposed amendments to 20.6.2.3000 NMAC or 20.6.2.5000?

Yes. Navajo Refining is recommending a number of clerical changes to the proposed amendments, as well as one substantive—but uncontroversial—change that would result in EPA rather than OCD administering the no migration petition program after Class I hazardous waste injection well permits are issued. The recommended changes are provided below. A complete set of proposed regulations that includes these recommended changes is included as Exhibit B to my written testimony.

Changes to Section 20.6.2.5004 NMAC. Navajo Refining is recommending a change to Subsection A(3)(a) of Section 20.6.2.5004 to reflect the fact that this provision would prohibit only to Class I radioactive waste injection wells and not other Class I wells, including hazardous waste. In particular, this is intended to clarify that Class I hazardous waste injection wells, which are subject to the requirement in Subsection A(3) of Section 20.6.2.5004, would no longer absolutely prohibited. Instead, they would be subject to the permitting requirements of the proposed regulations. The proposed change is highlighted below:

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

* * * * *

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in Sections 20.6.2.5300 through 20.6.2.5399 NMAC or this Subsection.

(a) Class I [~~hazardous or~~] radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

Changes to Sections 20.6.2.5101, 20.6.2.5209, and 20.6.2.5210 NMAC. Navajo Refining is recommending changes to Sections 20.6.2.5101, 20.6.2.5209, and 20.6.2.5210, each of which deletes the phrase "non-hazardous waste injection" to indicate that under this proposal, Class I hazardous waste injection wells would also be authorized in New Mexico (subject to permitting). These recommended changes are highlighted below:

20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

* * * * *

I. Modification or Termination of a Discharge Permit for a Class I [~~non-hazardous waste injection~~] well or Class III well: If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicate that this Part are being or may be violated, the secretary may require modification or, if it is determined by the secretary that the modification may not be adequate, may terminate a discharge permit for a Class I [~~non-hazardous waste injection~~] Well, or Class III well or well field, that was approved pursuant to the requirements of this under Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC for the following causes:

20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I [~~non-hazardous waste injection~~] well or a Class III well that meets the requirements of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

B. Prior to abandonment of a well used in a Class I [~~non-hazardous waste injection~~] well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

20.6.2.5210 INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

* * * * *

B. Prior to the issuance of a discharge permit or project discharge permit allowing construction of a new Class I [~~non-hazardous waste injection~~] well, operation of an existing Class I [~~non-hazardous waste injection~~] well, or operation of a new or existing Class III well or well field, or conversion of any well to injection use, the secretary shall consider the following:

* * * * *

(2) A map showing the Class I [~~non-hazardous waste injection~~] well, or Class III well or well fields, for which approval is sought and the applicable area of review. Within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

Changes to Section 20.6.2.5341 NMAC. Navajo Refinery is recommending a change to Subsection L of Section 20.6.2.5341 NMAC to reflect the fact that reports required by these provisions would be submitted to the Director of OCD rather than the Administrator of the U.S. Environmental Protection Agency (EPA). The proposed change is highlighted below:

20.6.2.5341 CONDITIONS APPLICABLE TO ALL PERMITS:

* * * * *

L. *Signatory requirement.* All applications, reports, or information submitted to the Director~~Administrator~~ shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC.)

Changes to Sections 20.6.2.5360, 20.6.2.5371, and 20.6.2.5372 NMAC. Navajo Refining is recommending several changes that would have the effect of retaining authority for reviewing No Migration Petitions and approving No Migration Exemptions with EPA Region 6, which is the current situation. Under these recommended changes, OCD would retain authority to issue Class I hazardous waste injection well permits. However, successful permit applicants would have to obtain a No Migration Exclusion from EPA Region 6 before they could commence injection of hazardous waste pursuant to a Class I hazardous waste injection well permit. As I understand it, this division of authority between OCD and EPA would be consistent with the manner in which Class I hazardous waste injection wells permit applications and No Migration Exclusions are processed in all other states that have authorized Class 1 hazardous waste injection wells. To effect this change, Navajo Refining is recommending the deletion of Sections 20.6.2.5371-72 NMAC, which incorporate by reference 40 C.F.R. Part 148. To clarify that permit applicants must obtain a No Migration Exclusion prior to commencing injection we are also recommending a new provision in Subsection B of Section 20.6.2.5360 NMAC that clarifies that a permittee must provide the Director of OCD with evidence that a No Migration Exemption has been granted before the Director can grant approval to operate a Class I hazardous waste injection well. The proposed changes are highlighted below:

20.6.2.5360 INFORMATION TO BE EVALUATED BY THE DIRECTOR:

* * * * *

B. Prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the Director shall review the following information, which shall be included in the completion report:

* * * * *

(7) the calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Subsections A(2) and (3) of Section 20.6.2.5360 NMAC; ~~and~~

(8) the status of corrective action on wells identified in Subsection A(15) of Section 20.6.2.5360 NMAC.~~; and~~

(9) evidence that the permittee has obtained an exemption under 40 C.F.R. Part 148, Subpart C for the hazardous wastes permitted for disposal through underground injection.

20.6.2.5364 – 20.6.2.539~~970~~: [RESERVED]

~~20.6.2.5371 ADOPTION OF 40 CFR PART 148 (HAZARDOUS WASTE INJECTION RESTRICTIONS). Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 148 [insert current effective date] are hereby incorporated by reference.~~

~~20.6.2.5372 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS. Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.~~

~~A. The following terms used in 40 CFR Part 148 have the meanings set forth herein when the terms are used in this part:~~

~~(1) "administrator" means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee.~~

~~B. The following provisions of 40 CFR Part 148 are modified in Section 20.6.2.5381 NMAC:~~

~~(1) the cross reference to 40 C.F.R. § 146.6(a) in Section 148.1(d)(1) shall be replaced by a cross reference to Subsection B(1) of Section 20.6.2.5002 NMAC;~~

~~(2) the cross reference to § 146.63 in Section 148.20(a)(2) shall be replaced by a cross reference to Section 20.6.2.5353 NMAC;~~

~~(3) the cross reference to § 146.64 in Section 148.20(a)(2) shall be replaced by a cross reference to Section 20.6.2.5354 NMAC;~~

~~(4) the cross reference to § 124.10 in Section 148.22(b) shall be replaced by a cross reference to Section 20.6.2.3108 NMAC;~~

~~(5) the cross reference to § 146.67(i) in Section 148.24(b)(2)(ii) shall be replaced by a cross reference to Subsection I of Section 20.6.2.5357 NMAC;~~

~~(6) the cross reference to § 124.5 in Section 148.24(c) shall be replaced by a cross reference to Sections 20.6.2.3108 through 20.6.2.3112 NMAC;~~

~~(7) references to "Underground Source of Drinking Water" or "USDW" shall be replaced with references to "groundwater of the State of New Mexico" as defined in 20.6.2.5301 NMAC.~~

~~C. The following provisions of 40 CFR Part 148, Subpart B are omitted from Section 20.6.2.5371 NMAC:~~

~~(1) Section 148.15(c);~~

~~(2) Section 148.16(d).~~

Robert O'Brien

Robert K. O'Brien

Summary

Enthusiastic, results-oriented leader with extensive refining experience. Proven ability to lead organizational change and process improvements to standardize and significantly improve performance across manufacturing sites. Success in building a strong team environment focused on achieving world class performance. Specific skills also include

- Coaching and People Development
- Work Process Focus and Execution
- Maintenance and Reliability Management
- Community Relations
- Management/Union Relations
- Project Management
- Technical Assurance Management
- Health & Safety Management

Professional Experience

HOLLYFRONTIER **2014 –**
Vice President and Refinery Manager – Navajo Refinery

Responsible for the safe, environmentally compliant, reliable and profitable operation of the Artesia and Lovington, NM refineries.

SHELL OIL PRODUCTS **2012 – 2014**
Operations Excellence Team Leader

Assess and implement standard work processes to achieve industry leading performance results in downstream manufacturing and upstream oil sands operations.

- Cost leadership team leader that identified and delivered over **$400 million** of cost improvements to ensure top tier producer of synthetic bitumen
- Provided staffing assessments and recommendations to operate chemical complex more efficiently and effectively by **15%** and deliver top tier business results
- Implement and assess multi-element reliability management framework across multiple sites

SHELL OIL PRODUCTS, Anacortes, WA **2006 – 2012**
Production Manager

Responsible for the safe, environmentally-compliant, reliable, and profitable operation of the Shell Puget Sound refinery. This leadership role includes management of 230 operators and staff with an annual operating budget of $150MM; and motivating 700 Shell and contract employees to achieve world class performance.

- Championed and resourced major improvements to process safety processes (Management of Change, Ensure Safe Production, Instrument Protective Functions, Equipment Integrity) which led to the refinery receiving the prestigious **2011 Process Safety Excellence Award.**

- Led and resourced significant improvements to improving reliability and profitability of the site. Over 300 refinery threats were mitigated through operational and project activities from 2007-2011. These sustained efforts improved **unplanned downtime by 100%** and **profitability by over $100MM annually.**
- Site operating expenses were reduced by $20MM annually from 3rd quartile Solomon to 1st quartile Solomon from 2007 to 2010 through rigorous risk prioritization (ME process), cost management, and focus on improving reliability.
- Improved refinery profitability by $70MM annually through processing lower cost alternative crude requiring operating changes without capital investment.

SHELL OIL PRODUCTS, Bakersfield, CA **2004 – 2006**
Regional Manager – Contracts & Procurement

Responsible for support of the Americas region contracts and procurement for 6 refineries.

- Staffed the refineries' team leaders and integrated the Buenos Aires refinery and the two Canadian refineries into the Americas region.
- C&P efforts provided over $15MM annually of value improvements to the business plans

Production Manager **1998 – 2004**

Responsible for the safe, environmentally-compliant, reliable, and profitable operation of the Shell Bakersfield refinery. This leadership role includes management of 120 operators and staff with an annual operating budget of $80MM, and motivating 450 Shell and contract employees to achieve world class performance.

- Promoted safe and healthy environment by serving on the refinery Safety Steering Group, as chairman of the Joint Health and Safety Committee, and as Safety Awareness team captain. Bakersfield's safety performance significantly improved over this time as demonstrated by the significant reduction in OSHA recordable rate and all-time refinery record of over **320 consecutive days without an OSHA injury**.
- Sponsored two cross-functional teams to identify and implement corrective actions to improve environmental compliance. Key efforts include extensive operator training, preventative maintenance of equipment, improved monitoring, and development of employee expectations and reporting. Bakersfield's environmental performance improved by over 70% from 2000-2003 and the refinery won **Shell's 2003 President award for leadership in Environmental performance.**
- Established cross-functional Operations, Engineering, Maintenance, and Inspection team to prioritize repair and project work to ensure cost-effective and reliable operation. Unscheduled downtime significantly decreased by over 70% from 2001-2004. Bakersfield performed at world class levels in reliability in 2003 and 2004.
- Promoted highly leverage cost reduction projects and risk assessment approach to reduce operating and maintenance costs by 45% from 2001-2004.
- Sponsored pump surveillance improvement team that increased mean time between failures from 2 years to more than 5 years.
- Developed and implemented a centralized control room project that standardized control, reduced console alarm flood, improved teamwork and energy utilization and yields by 5%.

SHELL OIL PRODUCTS, Houston, TX, Norco, LA, Wood River, IL **1981 – 1998**
Various Support and Management Roles

Assignments included major projects startups, process engineering support and leadership, and technology and operations management roles both in refineries and corporate locations.

Refining Customer Support Manager **1996 – 1998**

Responsible for developing the relationship between the Shell Technical Service Center and the Shell U.S. refineries to provide highly valued services. Managed an annual budget of $38MM of technical services delivered by over 20 separate departments and 300 employees.

Operations/Technical Manager **1994 – 1996**

Responsible for developing the operating plan and strategic capital investment options for Shell's six U.S. refineries. Interfaced between Head Office Manufacturing and the refineries to ensure operating plan commitments were communicated, resourced, and achieved.

Process Engineering Manager **1992 – 1994**

Responsible for technical assurance and technology application for sixteen technical professionals including their personal development and growth. This team provided daily technical assurance to process units and development of small capital projects that resulted in bottom-line profitability improvements of over $30MM annually. Technical support was provided for a $900MM asset base including the clean startup of a grassroots residual catalytic cracker unit.

Hydroprocessing Manager **1989 – 1992**

Responsible for the safe, environmentally sound, and reliable operation for the Norco hydroprocessing units with 40 operations employees and a budget of $15MM annually.

Process Support Engineer **1981 – 1989**

Provided technical and project support for six years at the Wood River refinery and two years in Head Office process engineering to six US refineries. Provided process startup support to a major cat cracker revamp and daily troubleshooting and surveillance to hydrocracking, distilling, reforming, and hydrotreating units.

Education

Bachelor of Science in Chemical Engineering – University of Cincinnati, Cincinnati, OH ▪ 1981

- Graduated Magna Cum Laude
- Four year varsity letter for Bearcat baseball team; named most valuable pitcher for 2 years
- Co-op experience for Ashland Oil Co.

PROPOSED WATER CONSERVATION RULE – JUNE 15, 2015

I. Proposed Amendments to Existing Provisions.

Section 20.6.2.3106 NMAC is amended to read:

20.6.2.3106 APPLICATION FOR DISCHARGE PERMITS AND RENEWALS:

A. Any person who, before or on June 18, 1977, is discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall, within 120 days of receipt of written notice from the secretary that a discharge permit is required, or such longer time as the secretary shall for good cause allow, submit a discharge plan to the secretary for approval; such person may discharge without a discharge permit until 240 days after written notification by the secretary that a discharge permit is required or such longer time as the secretary shall for good cause allow.

B. Any person who intends to begin, after June 18, 1977, discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall notify the secretary giving the information enumerated in Subsection B of Section 20.6.2.1201NMAC; the secretary shall, within 60 days, notify such person if a discharge permit is required; upon submission, the secretary shall review the discharge plan pursuant to Sections 20.6.2.3108 and 20.6.2.3109 NMAC. For good cause shown the secretary may allow such person to discharge without a discharge permit for a period not to exceed 120 days.

C. A proposed discharge plan shall set forth in detail the methods or techniques the discharger proposes to use or processes expected to naturally occur which will ensure compliance with this Part. At least the following information shall be included in the plan:

(1) Quantity, quality and flow characteristics of the discharge;

(2) Location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;

(3) Depth to and TDS concentration of the ground water most likely to be affected by the discharge;

(4) Flooding potential of the site;

(5) Location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;

(6) Depth to and lithological description of rock at base of alluvium below the discharge site if such information is available;

(7) Any additional information that may be necessary to demonstrate that the discharge permit will not result in concentrations in excess of the standards of Section 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use. Detailed information on site geologic and hydrologic conditions may be required for a technical evaluation of the applicant's proposed discharge plan; and

(8) Additional detailed information required for a technical evaluation of underground injection control wells as provided in Sections 20.6.2.5000 through [~~20.6.2. 5299~~] 20.6.2.5399 NMAC,

D. An applicant for a discharge permit shall pay fees as specified in [~~Section~~] Sections 20.6.2.3114 and 20.6.2.5302 NMAC.

E. An applicant for a permit to dispose of or use septage or sludge, or within a source category designated by the commission, may be required by the secretary to file a disclosure statement as specified in 74-6-5.1 of the Water Quality Act.

F. If the holder of a discharge permit submits an application for discharge permit renewal at least 120 days before the discharge permit expires, and the discharger is not in violation of the discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge permit continued under this provision remains fully effective and enforceable. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

Section 20.6.2.3107 NMAC is amended to read:

20.6.2.3107 MONITORING, REPORTING, AND OTHER REQUIREMENTS:

A. Each discharge plan shall provide for the following as the secretary may require:

(1) The installation, use, and maintenance of effluent monitoring devices;

(2) The installation, use, and maintenance of monitoring devices for the ground water most likely to be affected by the discharge;

(3) Monitoring in the vadose zone;

(4) Continuation of monitoring after cessation of operations;

(5) Periodic submission to the secretary of results obtained pursuant to any monitoring requirements in the discharge permit and the methods used to obtain these results;

(6) Periodic reporting to the secretary of any other information that may be required as set forth in the discharge permit;

(7) The discharger to retain for a period of at least five years any monitoring data required in the discharge permit;

(8) A system of monitoring and reporting to verify that the permit is achieving the expected results;

(9) Procedures for detecting failure of the discharge system;

(10) Contingency plans to cope with failure of the discharge permit or system;

(11) A closure plan to prevent the exceedance of standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation which includes: a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent and/or abate such contamination. The obligation to implement the closure plan as well as the requirements of the closure plan, if any is required, survives the termination or expiration of the permit. A closure plan for any underground injection control well must also incorporate the applicable requirements of Sections 20.6.2.5005, [~~and~~] 20.6.2.5209, and 20.6.2.5361 NMAC.

B. Sampling and analytical techniques shall conform with the following references unless otherwise specified by the secretary:

(1) Standard Methods for the Examination of Water and Wastewater, latest edition, American Public Health Association; or

(2) Methods for Chemical Analysis of Water and Waste, and other publications of the Analytical Quality Laboratory, EPA; or

(3) Techniques of Water Resource Investigations of the U.S. Geological Survey; or

(4) Annual Book of ASTM Standards. Part 31. Water, latest edition, American Society For Testing and Materials; or

(5) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or

(6) National Handbook of Recommended Methods for Water-Data Acquisition, latest edition, prepared cooperatively by agencies of the United States Government under the sponsorship of the U.S. Geological Survey.

C. The discharger shall notify the secretary of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants.

D. Any discharger of effluent or leachate shall allow any authorized representative of the secretary to:

(1) inspect and copy records required by a discharge permit;

(2) inspect any treatment works, monitoring and analytical equipment;

(3) sample any effluent before or after discharge;

(4) use monitoring systems and wells installed pursuant to a discharge permit requirement in order to collect samples from ground water or the vadose zone.

E. Each discharge permit for an underground injection control well shall incorporate the applicable requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

Section 20.6.2.3109 NMAC is amended to read:

20.6.2.3109 SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENT FOR ABATEMENT PLANS:

A. The department shall evaluate the application for a discharge permit, modification or renewal based on information contained in the department's administrative record. The department may request from the discharger, either before or after the issuance of any public notice, additional information necessary for the evaluation of the application. The administrative record shall consist of the application, any additional information required by the department, any information submitted by the discharger or the general public, other information considered by the department, the proposed approval or disapproval of an application for a discharge permit, modification or renewal prepared pursuant to Subsection G of 20.6.2.3108 NMAC, and, if a public hearing is held, all of the documents filed with the hearing clerk, all exhibits offered into evidence at the hearing, the written transcript or tape recording of the hearing, any hearing officer report, and any post hearing submissions.

B. The secretary shall, within 30 days after the administrative record is complete and all required information is available, approve, approve with conditions or disapprove the proposed discharge permit, modification or renewal based on the administrative record. The secretary shall give written notice of the action taken to the applicant or permittee and any other person who participated in the permitting action who requests a copy in writing.

C. Provided that the other requirements of this part are met and the proposed discharge plan, modification or renewal demonstrates that neither a hazard to public health nor undue risk to property will result, the secretary shall approve the proposed discharge plan, modification or renewal if the following requirements are met:

(1) ground water that has a TDS concentration of 10,000 mg/l or less will not be affected by the discharge; or

(2) the person proposing to discharge demonstrates that approval of the proposed discharge plan, modification or renewal will not result in either concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place

of withdrawal of water for present or reasonably foreseeable future use, except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(3) the proposed discharge plan conforms to either Subparagraph (a) or (b) below and Subparagraph (c) below:

(a) municipal, other domestic discharges, and discharges from sewerage systems handling only animal wastes: the effluent is entirely domestic, is entirely from a sewerage system handling only animal wastes or is from a municipality and conforms to the following:

(i) the discharge is from an impoundment or a leach field existing on February 18, 1977 which receives less than 10,000 gallons per day and the secretary has not found that the discharge may cause a hazard to public health; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment will not exceed 200 pounds per acre per year and that the effluent will meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii)the total nitrogen in effluent that is applied to a crop which is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(b) discharges from industrial, mining or manufacturing operations:

(i) the discharger has demonstrated that the amount of effluent that enters the subsurface from a surface impoundment will not exceed 0.5 acre-feet per acre per year; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment shall not exceed 200 pounds per acre per year and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop that is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(c) all discharges:

(i) the monitoring system proposed in the discharge plan includes adequate provision for sampling of effluent and adequate flow monitoring so that the amount being discharged onto or below the surface of the ground can be determined;

(ii) the monitoring data is reported to the secretary at a frequency determined by the secretary.

D. The secretary shall allow the following unless he determines that a hazard to public health may result:

(1) the weight of water contaminants in water diverted from any source may be discharged provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted; and provided further that contaminants added as a result of the means of diversion shall not be considered to be part of the weight of water contaminants in the water diverted;

(2) the water contaminants leached from undisturbed natural materials may be discharged provided that:

(a) the contaminants were not leached as a product or incidentally pursuant to a solution mining operation; and

(b) the contaminants were not leached as a result of direct discharge into the vadose zone from municipal or industrial facilities used for the storage, disposal, or treatment of effluent;

(3) the water contaminants leached from undisturbed natural materials as a result of discharge into ground water from lakes used as a source of cooling water.

E. If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicates that this part is being or may be violated or that the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present, in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate Streams in New Mexico are being or may be violated in surface water, due to the discharge, except as provided in Subsection D of 20.6.2.3109 NMAC.

(1) The secretary may require a discharge permit modification within the shortest reasonable time so as to achieve compliance with this part and to provide that any exceeding of standards in ground water at any place of withdrawal for present or reasonably foreseeable future use, or in surface water, due to the discharge except as provided in Subsection D of 20.6.2.3109 NMAC will be abated or prevented. If the secretary requires a discharge permit modification to abate water pollution:

(a) the abatement shall be consistent with the requirements and provisions of 20.6.2.4101, 20.6.2.4103, Subsection C and E of 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC; and

(b) the discharger may request of the secretary approval to carry out the abatement under 20.6.2.4000 through 20.6.2.4115 NMAC, in lieu of modifying the discharge permit; the discharger shall make the request in writing and shall include the reasons for the request.

(2) The secretary may terminate a discharge permit when a discharger fails to modify the permit in accordance with Paragraph (1) of Subsection E of 20.6.2.3109 NMAC.

(3) The secretary may require modification, or may terminate a discharge permit for a class I [~~non-hazardous waste injection~~] well, a class III well or other type of well specified in Subsection A of 20.6.2.5101 NMAC, pursuant to the requirements of Subsection I of 20.6.2.5101 NMAC.

F. If a discharge permit expires or is terminated for any reason and the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present in ground water, or that the Water Quality Standards for Interstate and Intrastate Streams in New Mexico are being or may be violated, the secretary may require the discharger to submit an abatement plan pursuant to 20.6.2.4104 and Subsection A of 20.6.2.4106 NMAC.

G. At the request of the discharger, a discharge permit may be modified in accordance with 20.6.2.3000 through 20.6.2.3114 NMAC.

H. The secretary shall not approve a proposed discharge plan, modification, or renewal for:

(1) any discharge for which the discharger has not provided a site and method for flow measurement and sampling;

(2) any discharge that will cause any stream standard to be violated;

(3) the discharge of any water contaminant which may result in a hazard to public health; or

(4) a period longer than five years, except that for new discharges, the term of the discharge permit approval shall commence on the date the discharge begins, but in no event shall the term of the approval exceed seven years from the date the permit was issued; for those permits expiring more than five years from the date of issuance, the discharger shall give prior written notification to the department of the date the discharge is to commence; the term of the permit shall not exceed five years from that date.

Section 20.6.2.5001 NMAC is amended to read:

20.6.2.5001 PURPOSE: The purpose of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC controlling discharges from underground injection control wells is to protect all ground water of the State of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow for

uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC include notification requirements, and requirements for discharges directly into the subsurface through underground injection control wells.

Section 20.6.2.5002 NMAC is amended to read:

20.6.2.5002 UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

A. Underground injection control wells include the following.

(1) Any dug hole or well that is deeper than its largest surface dimension, where the principal function of the hole is emplacement of fluids.

(2) Any septic tank or cesspool used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste.

(3) Any subsurface distribution system, cesspool or other well which is used for the injection of wastes.

B. Underground injection control wells are classified as follows:

(1) Class I wells inject fluids beneath the lowermost formation that contains 10,000 milligrams per liter or less TDS. Class I hazardous or radioactive waste injection wells inject fluids containing any hazardous or radioactive waste as defined in 74-4-3 and 74-4A-4 NMSA 1978 or Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3), including any combination of these wastes. Class I non-hazardous waste injection wells inject non-hazardous and non-radioactive fluids, and they inject naturally-occurring radioactive material (NORM) as provided by Section 20.3.1.1407 NMAC.

(2) Class II wells inject fluids associated with oil and gas recovery.

(3) Class III wells inject fluids for extraction of minerals or other natural resources, including sulfur, uranium, metals, salts or potash by in situ extraction. This classification includes only in situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.

(4) Class IV wells inject fluids containing any radioactive or hazardous waste as defined in 74-4-3 and 74-4A-4 NMSA 1978, including any combination of these wastes, above or into a formation that contains 10,000 mg/l or less TDS.

(5) Class V wells inject a variety of fluids and are those wells not included in Class I, II, III or IV. Types of Class V wells include, but are not limited to, the following:

(a) Domestic liquid waste injection wells

(i) domestic liquid waste disposal wells used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC through subsurface fluid distribution systems or vertical wells;

(ii) septic system wells used to emplace liquid waste volumes greater than that regulated by 20.7.3 NMAC into the subsurface, which are comprised of a septic tank and subsurface fluid distribution system;

(iii) large capacity cesspools used to inject liquid waste volumes greater than that regulated by 20.7.3 NMAC, including drywells that sometimes have an open bottom and/or perforated sides.

(b) Industrial waste injection wells

(i) air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling;

(ii) dry wells used for the injection of wastes into a subsurface formation;

(iii) geothermal energy injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electrical power;

(iv) stormwater drainage wells used to inject storm runoff from the surface into the subsurface;

(v) motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities;

(vi) car wash waste disposal wells used to inject fluids from motor vehicle washing activities.

(c) Mining injection wells

(i) stopes leaching wells used for solution mining of conventional mines;

(ii) brine injection wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;

(iii) backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether water injected is a radioactive waste or not;

(iv) injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale.

(d) Ground water management injection wells

(i) ground water remediation injection wells used to inject contaminated ground water that has been treated to ground water quality standards;

(ii) in situ ground water remediation wells used to inject a fluid that facilitates vadose zone or ground water remediation.

(iii) recharge wells used to replenish the water in an aquifer, including use to reclaim or improve the quality of existing ground water;

(iv) barrier wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality;

(v) subsidence control wells (not used for purposes of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

(vi) wells used in experimental technologies.

(e) Agricultural injection wells - drainage wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality.

Section 20.6.2.5003 NMAC is amended to read:

20.6.2.5003 NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS: All operators of underground injection control wells, except those wells regulated under the Oil and Gas Act, the Geothermal Resources Conservation Act, and the Surface Mining Act, shall:

A. For existing underground injection control wells, submit to the secretary the information enumerated in Subsection C of Section 20.6.2.1201 NMAC of this Part; provided, however, that if the information in Subsection C of Section 20.6.2.1201 NMAC has been previously submitted to the secretary and acknowledged by him, the information need not be resubmitted; and

B. Operate and continue to operate in conformance with Sections 20.6.2.1 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

C. For new underground injection control wells, submit to the secretary the information enumerated in Subsection C of Section 20.6.2.1201 NMAC of this Part at least 120 days prior to well construction.

Section 20.6.2.5004 NMAC is amended to read:

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this Subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in Sections 20.6.2.5300 through 20.6.2.5399 NMAC or this Subsection.

(a) Class I [~~hazardous or~~]radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the Environmental Protection Agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.

Section 20.6.2.5101 NMAC is amended to read:

20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Class I [~~non-hazardous waste injection~~] wells and Class III wells must meet the requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC in addition to other applicable requirements of the commission regulations. The secretary may also require that some Class IV and Class V wells comply with the requirements for Class I [~~non-hazardous waste injection~~] wells in Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC if the secretary determines that the additional requirements are necessary to prevent the movement of water contaminants from a specified injection zone into ground water having 10,000 mg/l or less TDS. No Class I [~~non-hazardous waste injection~~] well or Class III well may be approved which allows for movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, or pursuant to a temporary designation as provided in Paragraph (2) of Subsection C of Section 20.6.2.5101 NMAC.

B. Operation of a Class I [~~non-hazardous waste injection~~] well or Class III well must be pursuant to a discharge permit meeting the requirements of Sections 20.6.2.3000 through 20.6.2.3999 NMAC and Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC.

C. Discharge permits for Class I [~~non-hazardous waste injection~~] wells, or Class III wells affecting ground water of 10,000 mg/l or less TDS submitted for secretary approval shall:

(1) Receive an aquifer designation if required in Section 20.6.2.5103 NMAC prior to discharge permit issuance; or

(2) For Class III wells only, address the methods or techniques to be used to restore ground water so that upon final termination of operations including restoration efforts, ground water at any place of withdrawal for present or reasonably foreseeable future use will not contain either concentrations in excess of the standards of Section 20.6.2.3103 NMAC or any toxic pollutant. Issuance of a discharge permit or project discharge permit for Class III wells that provides for restoration of ground water in accordance with the requirements of this Subsection shall substitute for the aquifer designation provisions of Section 20.6.2.5103 NMAC. The approval shall constitute a temporary aquifer designation for a mineral bearing or producing aquifer, or portion thereof, to allow injection as provided for in the discharge permit. Such temporary designation shall expire upon final termination of operations including restoration efforts.

D. The exemptions from the discharge permit requirement listed in Section 20.6.2.3105 NMAC do not apply to underground injection control wells except as provided below:

(1) Wells regulated by the Oil Conservation Division under the exclusive authority granted under Section 70-2-12 NMSA 1978 or under other Sections of the "Oil and Gas Act";

(2) Wells regulated by the Oil Conservation Division under the "Geothermal Resources Act";

(3) Wells regulated by the New Mexico Coal Surface Mining Bureau under the "Surface Mining Act";

(4) Wells for the disposal of effluent from systems which are regulated under the "Liquid Waste Disposal and Treatment" regulations (20 NMAC 7.3) [20.7.3 NMAC] adopted by the Environmental Improvement Board under the "Environmental Improvement Act".

E. Project permits for Class III wells.

(1) The secretary may consider a project discharge permit for Class III wells, if the wells are:

(a) Within the same well field, facility site or similar unit,

(b) Within the same aquifer and ore deposit,

(c) Of similar construction,

(d) Of the same purpose, and

(e) Operated by a single owner or operator.

(2) A project discharge permit does not allow the discharger to commence injection in any individual operational area until the secretary approves an application for injection in that operational area (operational area approval).

(3) A project discharge permit shall:

(a) Specify the approximate locations and number of wells for which operational area approvals are or will be sought with approximate time frames for operation and restoration (if restoration is required) of each area; and

(b) Provide the information required under the following Sections of this Part, except for such additional site-specific information as needed to evaluate applications for individual operational area approvals: Subsection C of Section 20.6.2.3106, Sections 20.6.2.3107, 20.6.2.5204 through 20.6.2.5209, and Subsection B of Section 20.6.2.5210 NMAC.

(4) Applications for individual operational area approval shall include the following:

(a) Site-specific information demonstrating that the requirements of this Part are met, and

(b) Information required under Sections 20.6.2.5202 through 20.6.2.5210 NMAC and not previously provided pursuant to Subparagraph (b) of Paragraph (3) of Subsection E of this Section.

(5) Applications for project discharge permits and for operational area approval shall be processed in accordance with the same procedures provided for discharge permits under Sections 20.6.2.3000 through 20.6.2.3114 NMAC, allowing for public notice on the project discharge permit and on each application for operational area approval pursuant to Section 20.6.2.3108 NMAC with opportunity for public hearing prior to approval or disapproval.

(6) The discharger shall comply with additional requirements that may be imposed by the secretary pursuant to this Part on wells in each new operational area.

F. If the holder of a discharge permit for a Class I [~~non-hazardous waste injection~~] well, or Class III well submits an application for discharge permit renewal at least 120 days before discharge permit expiration, and the discharger is in compliance with his discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

G. Discharge Permit Signatory Requirements: No discharge permit for a Class I [~~non-hazardous waste injection~~] well or Class III well may be issued unless:

(1) The application for a discharge permit has been signed as follows:

(a) For a corporation: by a principal executive officer of at least the level of vice-president, or a representative who performs similar policy-making functions for the corporation who has authority to sign for the corporation; or

(b) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(c) For a municipality, state, federal, or other public agency: by either a principal executive officer who has authority to sign for the agency, or a ranking elected official; and

(2) All reports required by Class I hazardous waste injection well permits and other information requested by the Director pursuant to a Class I hazardous waste injection well permit shall be signed by a person described in paragraph (1) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(a) The authorization is made in writing by a person described in paragraph (1) of this section;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(c) The written authorization is submitted to the Director.

(3) *Changes to authorization.* If an authorization under paragraph (2) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (2) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

[~~(2)~~] (4) The signature on an application, report or other information requested by the Director must be [~~is~~] directly preceded by the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

H. Transfer of Class I non-hazardous waste injection well and Class III well Discharge Permits.

(1) The transfer provisions of Section 20.6.2.3111 NMAC do not apply to a discharge permit for a Class I non-hazardous waste injection well or Class III well.

(2) A Class I non-hazardous waste injection well or Class III well discharge permit may be transferred if:

(a) The secretary receives written notice 30 days prior to the transfer date; and

(b) The secretary does not object prior to the proposed transfer date. The secretary may require modification of the discharge permit as a condition of transfer, and may require demonstration of adequate financial responsibility.

(3) The written notice required by Subparagraph (b) of Paragraph (2) of Subsection I above shall:

(a) Have been signed by the discharger and the succeeding discharger, including an acknowledgement that the succeeding discharger shall be responsible for compliance with the discharge permit upon taking possession of the facility; and

(b) Set a specific date for transfer of discharge permit responsibility, coverage and liability; and

(c) Include information relating to the succeeding discharger's financial responsibility required by Paragraph (17) of Subsection B of Section 20.6.2.5210 NMAC.

I. Modification or Termination of a Discharge Permit for a Class I [~~non-hazardous waste injection~~] well or Class III well: If data submitted pursuant to any

monitoring requirements specified in the discharge permit or other information available to the secretary indicate that this Part are being or may be violated, the secretary may require modification or, if it is determined by the secretary that the modification may not be adequate, may terminate a discharge permit for a Class I [~~non-hazardous waste injection~~] Well, or Class III well or well field, that was approved pursuant to the requirements of this under Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC for the following causes:

(1) Noncompliance by the discharger with any condition of the discharge permit; or

(2) The discharger's failure in the discharge permit application or during the discharge permit review process to disclose fully all relevant facts, or the discharger's misrepresentation of any relevant facts at any time; or

(3) A determination that the permitted activity may cause a hazard to public health or undue risk to property and can only be regulated to acceptable levels by discharge permit modification or termination.

Section 20.6.2.5102 NMAC is amended to read:

20.6.2.5102 PRE-CONSTRUCTION REQUIREMENTS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Discharge Permit Requirement for Class I [~~non-hazardous waste injection~~] wells.

(1) Prior to construction of a Class I [~~non-hazardous waste injection~~] well or conversion of an existing well to a Class I [~~non-hazardous waste injection~~] well, an approved discharge permit is required that incorporates the requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC, except Subsection C of Section 20.6.2.5210 NMAC. As a condition of discharge permit issuance, the operation of the Class I [~~non-hazardous waste injection~~] well under the discharge permit will not be authorized until the secretary has:

(a) Reviewed the information submitted for his consideration pursuant to Subsection C of Section 20.6.2.5210 NMAC, and

(b) Determined that the information submitted demonstrates that the operation will be in compliance with this Part and the discharge permit.

(2) If conditions encountered during construction represent a substantial change which could adversely impact ground water quality from those anticipated in the discharge permit, the secretary shall require a discharge permit modification or may terminate the discharge permit pursuant to Subsection I of Section 20.6.2.5101 NMAC, and the secretary shall publish public notice and allow for comments and hearing in accordance with Section 20.6.2.3108 NMAC.

B. Notification Requirement for Class III wells.

(1) The discharger shall notify the secretary in writing prior to the commencement of drilling or construction of wells which are expected to be used for in situ extraction, unless the discharger has previously received a discharge permit or project discharge permit for the Class III well operation.

(a) Any person, proposing to drill or construct a new Class III well or well field, or convert an existing well to a Class III well, shall file plans, specifications and pertinent documents regarding such construction or conversion, with the Ground Water Quality Bureau of the Environment Department.

(b) Plans, specifications, and pertinent documents required by this Section, if pertaining to geothermal installations, carbon dioxide facilities, or facilities for the exploration, production, refinement or pipeline transmission of oil and natural gas, shall be filed instead with the Oil Conservation Division.

(c) Plans, specifications and pertinent documents required to be filed under this Section must be filed 90 days prior to the planned commencement of construction or conversion.

(d) The following plans, specifications and pertinent documents shall be provided with the notification:

(i) Information required in Subsection C of Section 20.6.2.3106 NMAC;

(ii) A map showing the Class III wells which are to be constructed. The map must also show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, that are within the expected area of review (Section 20.6.2.5202 NMAC) of the Class III well or well field perimeter;

(iii) Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within one mile of the site, the position of such ground water within this area relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(iv) Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(v) The proposed formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation;

(vi) The proposed stimulation program;

(vii) The proposed injection procedure;

(viii) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(ix) Proposed construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(x) Information, as described in Paragraph (17) of Subsection B of Section 20.6.2.5210 NMAC, showing the ability of the discharger to undertake measures necessary to prevent groundwater contamination; and

(xi) A plugging and abandonment plan showing that the requirements of Subsections B, C and D of Section 20.6.2.5209 NMAC will be met.

(2) Prior to construction, the discharger shall have received written notice from the secretary that the information submitted under item 10 of Subparagraph (d) of Paragraph (1) of Subsection B of Section 20.6.2.5102 NMAC is acceptable. Within 30 days of submission of the above information the secretary shall notify the discharger that the information submitted is acceptable or unacceptable.

(3) Prior to construction, the secretary shall review said plans, specifications and pertinent documents and shall comment upon their adequacy of design for the intended purpose and their compliance with pertinent Sections of this Part. Review of plans, specifications and pertinent documents shall be based on the criteria contained in Section 20.6.2.5205, Subsection E of Section 20.6.2.5209, and Subparagraph (d) of Paragraph (1) of Subsection B of Section 20.6.2.5102 NMAC.

(4) Within thirty (30) days of receipt, the secretary shall issue public notice, consistent with Subsection B of Section 20.6.2.3108 NMAC, that notification was submitted pursuant to Subsection B of Section 20.6.2.5102 NMAC. The secretary shall allow a period of at least thirty (30) days during which comments may be submitted. The public notice shall include:

(a) Name and address of the proposed discharger;

(b) Location of the discharge;

(c) Brief description of the proposed activities;

(d) Statement of the public comment period; and

(e) Address and telephone number at which interested persons may obtain further information.

(5) The secretary shall comment in writing upon the plans and specifications within sixty (60) days of their receipt by the secretary.

(6) Within thirty (30) days after completion, the discharger shall submit written notice to the secretary that the construction or conversion was completed in accordance with submitted plans and specifications, or shall submit as-built plans detailing changes from the originally submitted plans and specifications.

(7) In the event a discharge permit application is not submitted or approved, all wells which may cause groundwater contamination shall be plugged and abandoned by the applicant pursuant to the plugging and abandonment plan submitted in the notification; these measures shall be consistent with any comments made by the secretary in his review. If the wells are not to be permanently abandoned and the discharger demonstrates that plugging at this time is unnecessary to prevent groundwater contamination, plugging pursuant to the notification is not required. Financial responsibility established pursuant to Sections 20.6.2.5000 through 20.6.2.5299 NMAC will remain in effect until the discharger permanently abandons and plugs the wells in accordance with the plugging and abandonment plan.

Section 20.6.2.5103 NMAC is amended to read:

20.6.2.5103 DESIGNATED AQUIFERS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Any person may file a written petition with the secretary seeking commission consideration of certain aquifers or portions of aquifers as "designated aquifers". The purpose of aquifer designation is:

(1) For Class I [~~non-hazardous waste injection~~] wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS; or

(2) For Class III wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS, and not provide for restoration or complete restoration of that ground water pursuant to Paragraph (2) of Subsection C of Section 20.6.2.5101 NMAC.

B. The applicant shall identify (by narrative description, illustrations, maps or other means) and describe such aquifers, in geologic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite.

C. An aquifer or portion of an aquifer may be considered for aquifer designation under Subsection A. of this Section, if the applicant demonstrates that the following criteria are met:

(1) It is not currently used as a domestic or agricultural water supply; and

(2) There is no reasonable relationship between the economic and social costs of failure to designate and benefits to be obtained from its use as a domestic or agricultural water supply because:

(a) It is situated at a depth or location which makes recovery of water for drinking or agricultural purposes economically or technologically impractical at present and in the reasonably foreseeable future; or

(b) It is already so contaminated that it would be economically or technologically impractical to render that water fit for human consumption or agricultural use at present and in the reasonably foreseeable future.

D. The petition shall state the extent to which injection would add water contaminants to ground water and why the proposed aquifer designation should be approved. For Class III wells, the applicant shall state whether and to what extent restoration will be carried out.

E. The secretary shall either transmit the petition to the commission within sixty (60) days recommending that a public hearing be held, or refuse to transmit the petition and notify the applicant in writing citing reasons for such refusal.

F. If the secretary transmits the petition to the commission, the commission shall review the petition and determine to either grant or deny a public hearing on the petition. If the commission grants a public hearing, it shall issue a public notice, including the following information:

(1) Name and address of the applicant;

(2) Location, depth, TDS, areal extent, general description and common name or other identification of the aquifer for which designation is sought;

(3) Nature of injection and extent to which the injection will add water contaminants to ground water; and

(4) Address and telephone number at which interested persons may obtain further information.

G. If the secretary refuses to transmit the petition to the commission, then the applicant may appeal the secretary's disapproval of the proposed aquifer designation to the commission within thirty (30) days, and address the issue of whether the proposed aquifer designation meets the criteria of Subsections A, B, C, and D of this Section.

H. If the commission grants a public hearing, the hearing shall be held in accordance with the provisions of Section 74-6-6, NMSA 1978.

I. If the commission does not grant a public hearing on the petition, the aquifer designation shall not be approved.

J. After public hearing and consideration of all facts and circumstances included in Section 74-6-4(D), NMSA 1978, the commission may authorize the secretary to approve a proposed designated aquifer if the commission determines that the criteria of Subsection A, B, C, and D of this section are met.

K. Approval of a designated aquifer petition does not alleviate the applicant from complying with other Sections of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC, or of the responsibility for protection, pursuant to this part, of other nondesignated aquifers containing ground water having 10,000 mg/l or less TDS.

L. Persons other than the petitioner may add water contaminants as a result of injection into an aquifer designated for injection, provided the person receives a discharge permit pursuant to the requirements of Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC. Persons, other than the original petitioner or his designee, requesting addition of water contaminants as a result of injection into aquifers previously designated only for injection with partial restoration shall file a petition with the commission pursuant to the requirements of Subsections A, B, C, and D of this Section.

Section 20.6.2.5104 NMAC is amended to read:

20.6.2.5104 WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. Where a Class I [~~non-hazardous waste injection~~] well or a Class III well or well field, does not penetrate, or inject into or above, and which will not affect, ground water having 10,000 mg/l of less TDS, the secretary may:

(1) Issue a discharge permit for a well or well field with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required by Sections 20.6.2.5000 through [~~20.6.2.5299~~] 20.6.2.5399 NMAC; or

(2) For Class III wells only, issue a discharge permit pursuant to the requirements of Sections 20.6.2.3000 through 20.6.2.3114 NMAC.

B. Authorization of a reduction in requirements under Subsection A of this Section shall be granted only if injection will not result in an increased risk of movement of fluids into ground water having 10,000 mg/l or less TDS, except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

Section 20.6.2.5200 NMAC is amended to read:

20.6.2.5200 TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

Section 20.6.2.5201 NMAC is amended to read:

20.6.2.5201 PURPOSE: Sections 20.6.2.5200 through 20.6.2.5210 NMAC provide the technical criteria and performance standards for Class I [~~non-hazardous waste injection~~] wells and Class III wells. (Sections 20.6.2.5300 through 20.6.2.5399 NMAC provide certain additional technical and performance standards for Class I hazardous waste injection wells.)

Section 20.6.2.5204 NMAC is amended to read:

20.6.2.5204 MECHANICAL INTEGRITY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. A Class I [~~non-hazardous waste injection~~] well or Class III well has mechanical integrity if there is no detectable leak in the casing, tubing or packer which the secretary considers to be significant at maximum operating temperature and pressure; and no detectable conduit for fluid movement out of the injection zone through the well bore or vertical channels adjacent to the well bore which the secretary considers to be significant.

B. Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that a Class I [~~non-hazardous waste injection~~] well or Class III well has mechanical integrity. The demonstration shall be made through use of the following tests:

(1) For evaluation of leaks,

(a) Monitoring of annulus pressure (after an initial pressure test with liquid or gas before operation commences), or

(b) Pressure test with liquid or gas;

(2) For determination of conduits for fluid movement,

(a) The results of a temperature or noise log, or

(b) Where the nature of the casing used for Class III wells precludes use of these logs, cementing records and an appropriate monitoring program as the secretary may require which will demonstrate the presence of adequate cement to prevent such movement;

(3) Other appropriate tests as the secretary may require.

C. The secretary may consider the use by the discharger of equivalent alternative test methods to determine mechanical integrity. The discharger shall submit information on the proposed test and all technical data supporting its use. The secretary may approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. For Class III wells this demonstration may be made by submission of adequate monitoring data after the initial mechanical integrity tests.

D. In conducting and evaluating the tests enumerated in this Section or others to be allowed by the secretary, the discharger and the secretary shall apply methods and standards generally accepted in the affected industry. When the discharger reports the results of mechanical integrity tests to the secretary, he shall include a description of the test(s), the method(s) used, and the test results. In making an evaluation, the secretary's review shall include monitoring and other test data submitted since the previous evaluation.

Section 20.6.2.5209 NMAC is amended to read:

20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I [~~non-hazardous waste injection~~] well or a Class III well that meets the requirements of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

B. Prior to abandonment of a well used in a Class I [~~non-hazardous waste injection~~] well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

C. Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

D. Placement of the plugs shall be accomplished by one of the following:

(1) The Balance Method; or

(2) The Dump Bailer Method; or

(3) The Two-Plug Method; or

(4) An equivalent method with the approval of the secretary.

E. The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan.

(1) The type and number of plugs to be used;

(2) The placement of each plug, including the elevation of the top and bottom;

(3) The type, grade and quantity of cementing slurry to be used;

(4) The method of placement of the plugs;

(5) The procedure to be used to plug and abandon the well; and

(6) Such other factors that may affect the adequacy of the plan.

F. The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

Section 20.6.2.5210 NMAC is amended to read:

20.6.2.5210 INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I [~~NON-HAZARDOUS WASTE INJECTION~~] WELLS AND CLASS III WELLS:

A. This Section sets forth the information to be considered by the secretary in authorizing construction and use of a Class I [~~non-hazardous waste injection~~] well or Class III well or well field. Certain maps, cross-sections, tabulations of all wells within the area of review, and other data may be included in the discharge permit application submittal by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

B. Prior to the issuance of a discharge permit or project discharge permit allowing construction of a new Class I [~~non-hazardous waste injection~~] well, operation of an existing Class I [~~non-hazardous waste injection~~] well, or operation of a new or existing Class III well or well field, or conversion of any well to injection use, the secretary shall consider the following:

(1) Information required in Subsection C of Section 20.6.2.3106 NMAC;

(2) A map showing the Class I [~~non-hazardous waste injection~~] well, or Class III well or well fields, for which approval is sought and the applicable area of review. Within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

(3) A tabulation of data on all wells within the area of review which may penetrate into the proposed injection zone. Such data shall include, as available, a description of each well's type, the distance and direction to the injection well or well field, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the secretary may require;

(4) For wells within the area of review which penetrate the injection zone, but are not properly completed or plugged, the corrective action proposed to be taken under Section 20.6.2.5203 NMAC;

(5) Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within the area of review, the position of such ground water within the area of review relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(6) Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(7) Generalized maps and cross-sections illustrating the regional geologic setting;

(8) Proposed operating data, including:

(a) Average and maximum daily flow rate and volume of the fluid to be injected;

(b) Average and maximum injection pressure;

(c) Source of injection fluids and an analysis or description, whichever the secretary requires, of their chemical, physical, radiological and biological characteristics;

(9) Results of the formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation, provided that the secretary may issue a conditional approval of a discharge permit if he finds that further formation testing is necessary for final approval;

(10) Expected pressure changes, native fluid displacement, and direction of movement of the injected fluid;

(11) Proposed stimulation program;

(12) Proposed or actual injection procedure;

(13) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(14) Construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(15) Contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC;

(16) Plans, including maps, for meeting the monitoring requirements of Section 20.6.2.5207 NMAC; and

(17) The ability of the discharger to undertake measures necessary to prevent contamination of ground water having 10,000 mg/l or less TDS after the cessation of operation, including the proper closing, plugging and abandonment of a well, ground water restoration if applicable, and any post-operational monitoring as may be needed. Methods by which the discharger shall demonstrate the ability to undertake these measures shall include submission of a surety bond or other adequate assurances, such as financial statements or other materials acceptable to the secretary, such as: (1) a surety bond; (2) a trust fund with a New Mexico bank in the name of the State of New Mexico, with the State as Beneficiary; (3) a non-renewable letter of credit made out to the State of New Mexico; (4) liability insurance

specifically covering the contingencies listed in this paragraph; or (5) a performance bond, generally in conjunction with another type of financial assurance. Such bond or materials shall be approved and executed prior to discharge permit issuance and shall become effective upon commencement of construction. If an adequate bond is posted by the discharger to a federal or another state agency, and this bond covers all of the measures referred to above, the secretary shall consider this bond as satisfying the bonding requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC wholly or in part, depending upon the extent to which such bond is adequate to ensure that the discharger will fully perform the measures required hereinabove.

C. Prior to the secretary's approval that allows the operation of a new or existing Class I [~~non-hazardous waste injection~~] well or Class III well or well field, the secretary shall consider the following:

(1) Update of pertinent information required under Subsection B of Section 20.6.2.5210 NMAC;

(2) All available logging and testing program data on the well;

(3) The demonstration of mechanical integrity pursuant to Section 20.6.2.5204 NMAC;

(4) The anticipated maximum pressure and flow rate at which the permittee will operate;

(5) The results of the formation testing program;

(6) The physical, chemical, and biological interactions between the injected fluids and fluids in the injection zone, and minerals in both the injection zone and the confining zone; and

(7) The status of corrective action on defective wells in the area of review.

II. Proposed New UIC Class I Hazardous Waste Injection Well Provisions.

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in Sections 20.6.2.5300 through 20.6.2.5399 NMAC, Class I hazardous waste wells are subject to the minimum permit requirements for all Class I wells in Sections 20.6.2.5000 through 20.6.2.5299 NMAC, in addition to the requirements of Sections 20.6.2.5300 through 20.6.2.5399 NMAC. To the extent any requirement in Sections 20.6.2.5300 through 20.6.2.5399 NMAC conflicts with a requirement of Sections 20.6.2.5000 through 20.6.2.5299 NMAC, Class I hazardous waste injection wells must comply with Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

B. Class I hazardous waste injection wells are only authorized for use by petroleum refineries for the waste generated by the refinery ("generator").

C. The New Mexico energy, minerals and natural resources department, oil conservation division will administer and oversee all permitting of Class I hazardous waste wells pursuant to Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

20.6.2.5301 DEFINITIONS: As used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC:

A. "**cone of influence**" means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into groundwater of the State of New Mexico.

B. "**director**" means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee.

C. "**existing well**" means a Class I hazardous waste injection well which has become a Class I hazardous waste injection well as a result of a change in the definition of the injected waste which would render the waste hazardous under Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3).

D. "**groundwater of the State of New Mexico**" means, consistent with Section 20.6.2.5001 NMAC, an aquifer that contains ground water having a TDS concentration of 10,000 mg/l or less.

E. "**injection interval**" means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

F. "**new well**" means any Class I hazardous waste injection well which is not an existing well.

G. "**transmissive fault or fracture**" is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

20.6.2.5302 FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.3114 NMAC.

A. *Filing Fee.* Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a filing fee of $100 to the Water Quality Management Fund at the time the permit application is submitted. The filing fee is nonrefundable.

B. *Permit Fee.*

(1) Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a permit fee of $30,000 to the Water Quality Management Fund. The permit fee may be paid in a single payment at the time of permit approval or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit approval. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit application review

of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) Facilities applying for permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. *Annual Administration Fee.* Every facility that receives a UIC Class I hazardous waste injection well permit shall pay an annual administrative fee of $20,000 to the Water Quality Management Fund. The initial administrative fee shall be remitted one year after commencement of disposal operations pursuant to the permit. Subsequent administrative fees shall be remitted annually thereafter.

D. *Renewal Fee.*

(1) Every facility submitting a discharge permit application for renewal of a UIC Class I hazardous waste injection well shall pay a renewal fee of $10,000 to the Water Quality Management Fund. The renewal fee may be paid in a single payment at the time of permit renewal or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit renewal. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit renewal review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) The Director may waive or reduce fees for discharge permit renewals which require little or no cost for investigation or issuance.

E. *Modification Fees.*

(1) Every facility submitting an application for a discharge permit modification of a UIC Class I hazardous waste injection well will be assessed a filing fee plus a modification fee of $10,000 to the Water Quality Management Fund.

(2) Every facility submitting an application for other changes to a UIC Class I hazardous waste injection well discharge permit will be assessed a filing fee plus a minor modification fee of $1,000 to the Water Quality Management Fund.

(3) Applications for both renewal and modification shall pay a filing fee plus renewal fee.

(4) If the Director requires a discharge permit change as a component of an enforcement action, the facility shall pay the applicable modification fee. If the Director requires a discharge permit change outside the context of an enforcement action, the facility shall not be assessed a fee.

(5) The Director may waive or reduce fees for discharge permit changes which require little or no cost for investigation or issuance.

F. *Financial Assurance Fees.*

(1) Facilities with approved UIC Class I hazardous waste injection well permits shall pay the financial assurance fees specified in Section 20.6.2.3114, Table 2 NMAC.

(2) Facilities relying on the corporate guarantee for financial assurance shall pay an additional fee of $ 5,000 to the Water Quality Management Fund.

20.6.2.5303 CONVERSION OF EXISTING INJECTION WELLS: An existing Class I non-hazardous waste injection well may be converted to a Class I hazardous waste injection well provided the well meets the modeling, design, compatibility, and other requirements set forth in Sections 20.6.2.5300 through 20.6.2.5399 NMAC and the permittee receives a Class I hazardous waste permit pursuant to those Sections.

20.6.2.5304 – 20.6.2.5309: [RESERVED]

20.6.2.5310 REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

A. *Applicability.* The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also Subsection A(3)(b) of Section 20.6.2.5004 NMAC.)

B. *Authorization.* The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for authorization to inject as specified in Section 20.6.2.5102 NMAC within 6 months after the approval or promulgation of the State UIC program.

C. *Requirements.* In addition to complying with the applicable requirements of this Part, the owner or operator of each facility meeting the requirements of Subsection B of this section, shall comply with the following.

(1) *Notification.* The owner or operator shall comply with the notification requirements of 42 U.S.C. § 6930.

(2) *Identification number.* The owner or operator shall comply with the requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.11).

(3) *Manifest system.* The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.71).

(4) *Manifest discrepancies.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.72).

(5) *Operating record.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Sections 264.73(a), (b)(1), and (b)(2)).

(6) *Annual report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(7) *Unmanifested waste report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.16).

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the Director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in Section 20.6.2.5209 NMAC.

20.6.2.5311 – 20.6.2.5319: [RESERVED]

20.6.2.5320 ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS). Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 144, Subpart F [insert current effective date] are hereby incorporated by reference.

20.6.2.5321 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS. Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following terms defined in 40 CFR Section 144.61 have the meanings set forth herein, in lieu of the meaning set forth in 40 CFR Section 144.61:

(1) "plugging and abandonment plan" means the plan for plugging and abandonment prepared in accordance with the requirements of 20.6.2.5341 NMAC.

B. The following terms not defined in 40 CFR Part 144, Subsection F have the meanings set forth herein when the terms are used in this part:

(1) "administrator," "regional administrator" and other similar variations means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

(2) "United States Environmental Protection Agency" or "EPA" means New Mexico energy, minerals and natural resources department, oil conservation division or OCD, except when used in 40 CFR Section 144.70(f).

C. The following provisions of 40 CFR Part 144, Subpart F are modified in Section 20.6.2.5321 NMAC:

(1) cross references to 40 CFR Part 144 shall be replaced by cross references to Sections 20.6.2.5300 through 20.6.2.5399 NMAC

(2) the cross reference to §§ 144.28 and 144.51 in Section 144.62(a) shall be replaced by a cross reference to Section 20.6.2.5341 NMAC;

(3) the cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H shall be modified to include cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H and Sections 20.4.2.500 and 20.4.2.600 NMAC.

(4) references to EPA Identification Numbers in financial assurance documents shall be replaced by references to API Well Numbers (US Well Numbers);

(5) the first sentence of 40 CFR Section 144.63(f)(1) shall be replaced with the following sentence: "An owner or operator may satisfy the requirements of this section by obtaining a guarantee from a corporate parent that meets the requirements of 40 CFR Section 144.63(f)(10), including the guarantor meeting the requirements for the owner or operator under the financial test specified in this paragraph."

(6) trust agreements prepared in accordance with 40 CFR Section 144.70(a) must state that they will be administered, construed, and enforced according to the laws of New Mexico;

(7) surety companies issuing bonds prepared in accordance with 40 CFR Section 144, Subpart F must be registered with the New Mexico Office of Superintendent of Insurance;

D. The following provisions of 40 CFR Part 144, Subpart F are omitted from Section 20.6.2.5320 NMAC:

(1) section 144.65;

(2) section 144.66;

(3) the third sentence in 40 CFR Section 144.63(h);

20.6.2.5322 – 20.6.2.5340 [RESERVED]

20.6.2.5341 CONDITIONS APPLICABLE TO ALL PERMITS: The following conditions apply to all Class I hazardous permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

A. *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the New Mexico Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in a variance issued under Section 20.6.2.1210 NMAC.

B. *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal pursuant to Subpart F of Section 20.6.2.3106 NMAC.

C. *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F. *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

H. *Duty to provide information.* The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

I. *Duty to provide notice.* Public notice, when required, shall be provided as set forth in 20.6.2.3108 NMAC except that the following notice shall be provided in lieu of the notice required by 20.6.2.3108(B)(2):

A written notice must be sent by certified mail, return receipt requested, to all surface and mineral owners of record within a ½ mile radius of the proposed well or wells.

J. *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Sections 20.6.2.5300 through 20.6.2.5399 NMAC, any substances or parameters at any location.

K. *Monitoring and records.*

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(a) calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and

(b) the nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Subsection A(6) of Section 20.6.2.5342 NMAC, or under Sections 20.6.2.5351 through 20.6.2.5363 NMAC as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.

(3) Records of monitoring information shall include:

(a) the date, exact place, and time of sampling or measurements;

(b) the individual(s) who performed the sampling or measurements;

(c) the date(s) analyses were performed;

(d) the individual(s) who performed the analyses;

(e) the analytical techniques or methods used; and

(f) the results of such analyses.

L. *Signatory requirement.* All applications, reports, or information submitted to the Director shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC.)

M. *Reporting requirements—*

(1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(4) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(5) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(a) any monitoring or other information which indicates that any contaminant may cause an endangerment to groundwater of the State of New Mexico; or

(b) any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between groundwater of the State of New Mexico. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the area affected by the noncompliance, including any groundwater of the State of New Mexicor; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; the date and time the permittee became aware of the noncompliance; and steps taken or planned to reduce, remediate, eliminate, and prevent reoccurrence of the noncompliance.

(6) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under Subsections M(3), (4), and (5) of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in Subsection M(5) of this Section.

(7) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

N. *Requirements prior to commencing injection.* A new injection well may not commence injection until construction is complete, and

(1) the permittee has submitted notice of completion of construction to the Director; and

(2) (a) the Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(b) the permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in Subsection N(1) of this Section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

O. The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well.

P. The permittee shall meet the requirements of Section 20.6.2.5209 NMAC.

Q. *Plugging and abandonment report.* Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the Director. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) a statement that the well was plugged in accordance with the plan previously submitted to the Director; or

(2) where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the Director, specifying the differences.

R. *Duty to establish and maintain mechanical integrity.*

(1) The permittee shall meet the requirements of Section 20.6.2.5204 NMAC.

(2) When the Director determines that a Class I hazardous well lacks mechanical integrity pursuant to Section 20.6.2.5204 NMAC, he/she shall give written notice of his/her determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of Section 20.6.2.5209 NMAC or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between groundwater of the State of New Mexico caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to Sections 20.6.2.5204 and 20.6.2.5358 NMAC.

(3) The Director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Subsection A of Section 20.6.2.5204 NMAC to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between groundwater of the State of New Mexico.

S. *Transfer of a permit.* The operator shall not transfer a permit without the Director's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25 percent or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the Director denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after receipt of the notice. Until the Director approves the transfer and the required financial assurance is in place, the Director shall not release the transferor's financial assurance.

20.6.2.5342 ESTABLISHING PERMIT CONDITIONS:

A. In addition to conditions required in Section 20.6.2.5341 NMAC, the Director shall establish conditions, as required on a case-by-case basis under Subsection H of Section 20.6.2.3109 NMAC (duration of permits), Subsection A of Section 20.3.2.5343 NMAC (schedules of compliance), and Section 20.3.2.5344 NMAC. Permits for owners or operators of hazardous waste injection wells shall also include conditions meeting the requirements of Section 20.6.2.5310 NMAC (requirements for wells injecting hazardous waste), Subsections A(1) and A(2) of this section, and Sections 20.6.2.5351 through 20.6.2.5363 NMAC.

(1) *Financial responsibility.*

(a) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:

(i) the well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Subsection O of Section 20.6.2.5341 NMAC, and Section 20.6.2.5209 NMAC, and submitted a plugging and abandonment report pursuant to Subsection P of Section 20.6.2.5341 NMAC; or

(ii) the well has been converted in compliance with the requirements of Subsection N of Section 20.6.2.5341 NMAC; or

(iii) the transferor of a permit has received notice from the Director that the transfer has been approved and that the transferee's required financial assurance is in place.

(b) The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of Section 20.6.2.5320 NMAC.

(2) *Additional conditions.* The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into groundwater of the state of New Mexico.

B. (1) In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of this part.

(2) An applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit.

(3) New or renewed permits, and to the extent allowed under Section 20.6.2.3109 NMAC modified or terminated permits, shall incorporate each of the applicable requirements referenced in Section 20.6.2.5342 NMAC.

C. *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

20.6.2.5343 SCHEDULE OF COMPLIANCE:

A. *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with this part.

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.

(2) *Interim dates.* Except as provided in Subsection B(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(a) The time between interim dates shall not exceed 1 year.

(b) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if Subsection A(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

B. *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows.

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(a) the permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(b) the permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(a) both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(b) one schedule shall lead to timely compliance with applicable requirements;

(c) the second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(d) each permit containing two schedules shall include a requirement that after the permittee has made a final decision under Subsection B(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.

20.6.2.5344 REQUIERMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS: All permits shall specify:

A. requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

B. required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

C. applicable reporting requirements based upon the impact of the regulated activity and as specified in Section 20.6.2.5359 NMAC. Reporting shall be no less frequent than specified in the above regulations.

20.6.2.5345 – 20.6.2.5350: [RESERVED]

20.6.2.5351 APPLICABILITY: Sections 20.6.2.5351 through 20.6.2.5363 NMAC establish criteria and standards for underground injection control programs to regulate Class I hazardous waste injection wells. Unless otherwise noted in these Sections supplement the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC and apply instead of any inconsistent requirements for Class I non-hazardous waste injection wells.

20.6.2.5352 MINIMUM CRITERIA FOR SITING:

A. All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore groundwater of the State of New Mexico.

B. The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The Director shall determine geologic suitability based upon:

(1) an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

(3) a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

C. Class I hazardous waste injection wells shall be sited such that:

(1) the injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into groundwater of the State of New Mexico; and

(2) the confining zone:

(a) is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into groundwater of the State of New Mexico; and

(b) contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

D. The owner or operator shall demonstrate to the satisfaction of the Director that:

(1) the confining zone is separated from the base of the lowermost groundwater of the State of New Mexico by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for groundwater of the State of New Mexico in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost groundwater of the State of New Mexico, considering density effects, injection pressures and any significant pumping in the overlying groundwater of the State of New Mexico; or

(3) there is no groundwater of the State of New Mexico present.

(4) The Director may approve a site which does not meet the requirements in Subsections D (1), (2), or (3) of this section if the owner or operator can demonstrate to the Director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of groundwater of the State of New Mexico.

20.6.2.5353 AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5202 NMAC. The area of review for Class I hazardous waste injection wells shall be a 2-mile radius around the well bore. The Director may specify a larger area of review based on the calculated cone of influence of the well.

20.6.2.5354 CORRECTIVE ACTION FOR WELLS IN THE AREA OF REVIEW: For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5203 NMAC.

A. The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the Director outlining the protocol used to:

(1) identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) determine whether wells are adequately completed or plugged.

B. The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in Subsection A of Section 20.6.2.5360 NMAC:

(1) a tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) a description of each well or type of well and any records of its plugging or completion.

C. For wells that the Director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modification as are necessary to prevent movement of fluids into or between groundwater of the State of New Mexico. Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in Subsection E of this section), the Director shall:

(1) require the applicant to revise the plan;

(2) prescribe a plan for corrective action as a condition of the permit; or

(3) deny the application.

D. Requirements:

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under Subsection C of this section. Any such compliance schedule shall provide for compliance no later than 2 years following issuance of the permit and shall require observance of appropriate pressure limitations under Subsection D(3) until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The Director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the Director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between groundwater of the State of New Mexico. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

E. In determining the adequacy of corrective action proposed by the applicant under Subsection C of this section and in determining the additional steps needed to prevent fluid movement into and between groundwater of the State of New Mexico, the following criteria and factors shall be considered by the Director:

(1) nature and volume of injected fluid;

(2) nature of native fluids or byproducts of injection;

(3) geology;

(4) hydrology;

(5) history of the injection operation;

(6) completion and plugging records;

(7) closure procedures in effect at the time the well was closed;

(8) hydraulic connections with groundwater of the State of New Mexico;

(9) reliability of the procedures used to identify abandoned wells; and

(10) any other factors which might affect the movement of fluids into or between groundwater of the State of New Mexico.

20.6.2.5355 CONSTRUCTION REQUIREMENTS:

A. *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) prevent the movement of fluids into or between groundwater of the State of New Mexico or into any unauthorized zones;

(2) permit the use of appropriate testing devices and workover tools; and

(3) permit continuous monitoring of injection tubing and long string casing as required pursuant to Subsection F of Section 20.6.2.5357 NMAC.

B. *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM, or comparable standards acceptable to the Director.

C. *Casing and Cementing of New Wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between groundwater of the State of New Mexico, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the Director shall consider the following information as required by Section 20.6.2.5360 NMAC:

(a) depth to the injection zone;

(b) injection pressure, external pressure, internal pressure and axial loading;

(c) hole size;

(d) size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification and construction material);

(e) corrosiveness of injected fluid, formation fluids and temperature;

(f) lithology of injection and confining zones;

(g) type or grade of cement; and

(h) quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains groundwater of the State of New Mexico and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The Director may require more than 120% when the geology or other circumstances warrant it.

(3) At least one long string casing, using a sufficient number of centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(a) of sufficient quantity and quality to withstand the maximum operating pressure; and

(b) in a quantity no less than 120% of the calculated volume necessary to fill the annular space. The Director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(a) the maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(b) the maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

D. *Tubing and packer.*

(1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the Director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(a) depth of setting;

(b) characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(c) injection pressure;

(d) annular pressure;

(e) rate (intermittent or continuous), temperature and volume of injected fluid;

(f) size of casing; and

(g) tubing tensile, burst, and collapse strengths.

(3) The Director may approve the use of a fluid seal if he determines that the following conditions are met:

(a) the operator demonstrates that the seal will provide a level of protection comparable to a packer;

(b) the operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(c) the permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(d) the design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(e) a secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

20.6.2.5356 LOGGING, SAMPLING, AND TESTING PRIOR TO NEW WELL OPERATION:

A. During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in Section 20.6.2.5355 NMAC, and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the Director. At a minimum, such logs and tests shall include:

(1) deviation checks during drilling on all holes constructed by drilling pilot holes which are enlarged by reaming or another method. Such checks shall be at sufficiently

frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(2) such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses. At a minimum, the following logs shall be required in the following situations:

(a) upon installation of the surface casing:

(i) resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(ii) a cement bond and variable density log, and a temperature log after the casing is set and cemented;

(b) upon installation of the long string casing:

(i) resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(ii) as cement bond and variable density log, and a temperature log after the casing is set and cemented.

(c) The Director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) a mechanical integrity test consisting of:

(a) a pressure test with liquid or gas;

(b) a radioactive tracer survey;

(c) a temperature or noise log;

(d) a casing inspection log, if required by the Director; and

(e) any other test required by the Director.

B. Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The Director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.

C. The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

D. At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) fracture pressure;

(2) other physical and chemical characteristics of the injection and confining zones; and

(3) physical and chemical characteristics of the formation fluids in the injection zone.

E. Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(1) a pump test; or

(2) injectivity tests.

F. The Director shall have the opportunity to witness all logging and testing required by Sections 20.6.2.5351 through 5363 NMAC. The owner or operator shall submit a schedule of such activities to the Director 30 days prior to conducting the first test.

20.6.2.5357 OPERATING REQUIREMENTS:

A. Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into groundwater of the State of New Mexico.

B. Injection between the outermost casing protecting groundwater of the State of New Mexico and the well bore is prohibited.

C. The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the Director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

D. The owner or operator shall maintain mechanical integrity of the injection well at all times.

E. Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) conditions limiting the temperature, pH or acidity of the injected waste; and

(2) procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

F. The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the Director exceed a range and/or gradient specified in the permit; or

(2) automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the Director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

G. If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under Subsection F of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) cease injection of waste fluids unless authorized by the Director to continue or resume injection;

(2) take all necessary steps to determine the presence or absence of a leak; and

(3) notify the Director within 24 hours after the alarm or shutdown.

H. If a loss of mechanical integrity is discovered pursuant to Subsection G of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) immediately cease injection of waste fluids;

(2) take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(3) notify the Director within 24 hours after loss of mechanical integrity is discovered;

(4) notify the Director when injection can be expected to resume; and

(5) restore and demonstrate mechanical integrity to the satisfaction of the Director prior to resuming injection of waste fluids.

I. Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(1) the owner or operator shall immediately case injection of waste fluids, and:

(a) notify the Director within 24 hours of obtaining such evidence;

(b) take all necessary steps to identify and characterize the extent of any release;

(c) comply with any remediation plan specified by the Director;

(d) implement any remediation plan approved by the Director; and

(e) where such release is into groundwater of the State of New Mexico currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The Director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger groundwater of the State of New Mexico.

J. The owner or operator shall notify the Director and obtain his approval prior to conducting any well workover.

20.6.2.5358 TESTING AND MONITORING REQUIREMENTS: Testing and monitoring requirements shall at a minimum include:

A. Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(a) the parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(b) the test methods that will be used to test for these parameters; and

(c) the sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the Director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

B. Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the Director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in Section 20.6.2.5352 NMAC.

C. Compatibility of well materials.

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the Director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under Subsection B of Section 20.6.2.5355 NMAC.

(2) The Director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(a) placing coupons of the well construction materials in contact with the waste stream; or

(b) routing the waste stream through a loop constructed with the material used in the well; or

(c) using an alternative method approved by the Director.

(3) If a corrosion monitoring program is required:

(a) the test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation; and

(b) the owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in Subsection B of Section 20.6.2.5355 NMAC.

D. *Periodic mechanical integrity testing.* In fulfilling the requirements of Section 20.6.2.5204 NMAC, the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

(1) the long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) the bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) an approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole. The Director may require such tests whenever the well is worked over;

(4) casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The Director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) any other test approved by the Director in accordance with the procedures in 40 CFR Section 146.8(d) may also be used.

E. *Ambient monitoring.*

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring program. At a minimum, the Director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the Director may also require:

(a) continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the Director;

(b) the use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the Director, or to provide other site specific data;

(c) periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(d) periodic monitoring of the ground water quality in the lowermost groundwater of the State of New Mexico; and

(e) any additional monitoring necessary to determine whether fluids are moving into or between groundwater of the State of New Mexico.

F. The Director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

20.6.2.5359 REPORTING REQUIREMENTS: Reporting requirements shall, at a minimum, include:

A. Quarterly reports to the Director containing:

(1) the maximum injection pressure;

(2) a description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) a description of any event which triggers an alarm or shutdown device required pursuant to Subsection F of Section 20.6.2.5357 NMAC and the response taken;

(4) the total volume of fluid injected;

(5) any change in the annular fluid volume;

(6) the physical, chemical and other relevant characteristics of injected fluids; and

(7) the results of monitoring prescribed under Section 20.6.2.5358 NMAC.

B. Reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

(1) periodic tests of mechanical integrity;

(2) any other test of the injection well conducted by the permittee if required by the Director; and

(3) any well workover.

20.6.2.5360 INFORMATION TO BE EVALUATED BY THE DIRECTOR: This section sets forth the information which must be evaluated by the Director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application

by reference provided they are current and readily available to the Director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved.

A. Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the Director shall review the following to assure that the requirements of Sections 20.6.2.5000 through 20.6.2.5399 NMAC are met:

(1) information required in Section 20.6.2.5102 NMAC;

(2) a map showing the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads. The map should also show faults, if known or suspected;

(3) a tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the Director may require;

(4) the protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) maps and cross-sections indicating the general vertical and lateral limits of all groundwater of the State of New Mexico within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each groundwater of the State of New Mexico which may be affected by the proposed injection;

(6) maps and cross-sections detailing the geologic structure of the local area;

(7) maps and cross-sections illustrating the regional geologic setting;

(8) proposed operating data;

(a) average and maximum daily rate and volume of the fluid to be injected; and

(b) average and maximum injection pressure;

(9) proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) proposed stimulation program;

(11) proposed injection procedure;

(12) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any groundwater of the State of New Mexico;

(14) plans (including maps) for meeting monitoring requirements of Section 20.6.2.5358 NMAC;

(15) for wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under Section 20.6.2.5354 NMAC;

(16) construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) a demonstration pursuant to Section 20.6.2.5320 NMAC, that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

B. Prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the Director shall review the following information, which shall be included in the completion report:

(1) all available logging and testing program data on the well;

(2) a demonstration of mechanical integrity pursuant to Section 20.6.2.5358 NMAC;

(3) the anticipated maximum pressure and flow rate at which the permittee will operate;

(4) the results of the injection zone and confining zone testing program as required in Subsection A(9) of Section 20.6.2.5360 NMAC;

(5) the actual injection procedure;

(6) the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

(7) the calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Subsections A(2) and (3) of Section 20.6.2.5360 NMAC;

(8) the status of corrective action on wells identified in Subsection A(15) of Section 20.6.2.5360 NMAC; and

(9) evidence that the permittee has obtained an exemption under 40 C.F.R. Part 148, Subpart C for the hazardous wastes permitted for disposal through underground injection.

C. Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the Director shall review the information required in Subsection A(4) of Section 20.6.2.5361 NMAC and Subsection A of Section 20.6.2.5362 NMAC.

D. Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

(1) the generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

20.6.2.5361 CLOSURE:

A. *Closure Plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of Subsection D of this section and is acceptable to the Director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the Director no later than the date on which notice of closure is required to be submitted to the Director under Subsection B of this section.

(3) The plan shall assure financial responsibility as required in Subsection A(7) of Section 20.6.2.5342 NMAC.

(4) The plan shall include the following information:

(a) the type and number of plugs to be used;

(b) the placement of each plug including the elevation of the top and bottom of each plug;

(c) the type and grade and quantity of material to be used in plugging;

(d) the method of placement of the plugs;

(e) any proposed test or measure to be made;

(f) the amount, size, and location (by depth) of casing and any other materials to be left in the well;

(g) the method and location where casing is to be parted, if applicable;

(h) the procedure to be used to meet the requirements of Subsection D(5) of this section;

(i) the estimated cost of closure; and

(j) any proposed test or measure to be made.

(5) The Director may modify a closure plan following the procedures of Section 20.6.2.3109 NMAC.

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(a) has received authorization from the Director; and

(b) has described actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger groundwater of the State of New Mexico during the period of temporary disuse. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the Director 30 days prior to resuming operation of the well.

B. *Notice of intent to close.* The owner or operator shall notify the Director at least 60 days before closure of a well. At the discretion of the Director, a shorter notice period may be allowed.

C. *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the Director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

(1) a statement that the well was closed in accordance with the closure plan previously submitted and approved by the Director; or

(2) where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

D. *Standards for well closure.*

(1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the Director. The Director shall analyze the pressure decay and the transient pressure observations conducted pursuant to Subsection E(1)(i) of Section 20.6.2.5358 NMAC and determine whether the injection activity has conformed with predicted values.

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(a) pressure tests with liquid or gas;

(b) radioactive tracer surveys;

(c) noise, temperature, pipe evaluation, or cement bond logs; and

(d) any other test required by the Director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between groundwater of the State of New Mexico.

(5) Placement of the cement plugs shall be accomplished by one of the following:

(a) the Balance Method;

(b) the Dump Bailer Method;

(c) the Two-Plug Method; or

(d) an alternate method, approved by the Director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).

20.6.2.5362 POST-CLOSURE CARE:

A. The owner or operator of a Class I hazardous waste well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of Subsection B of this section and is acceptable to the Director. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under Subsection C of Section 20.6.2.5361 NMAC.

(3) The plan shall assure financial responsibility as required in Section 20.6.2.5363 NMAC.

(4) The plan shall include the following information:

(a) the pressure in the injection zone before injection began;

(b) the anticipated pressure in the injection zone at the time of closure;

(c) the predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico;

(d) predicted position of the waste front at closure;

(e) the status of any cleanups required under Section 20.6.2.5354 NMAC; and

(f) the estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the Director may modify the post-closure plan after submission of the closure report following the procedures in Section 20.6.2.3109 NMAC.

B. The owner or operator shall:

(1) Continue and complete any cleanup action required under Section 20.6.2.5354 NMAC, if applicable.

(2) Continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico. The

Director may extend the period of post-closure monitoring if he determines that the well may endanger groundwater of the State of New Mexico.

(3) Submit a survey plat to the local zoning authority designated by the Director. The plat shall indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat shall be submitted to the Director.

(4) Provide appropriate notification and information to such State and local authorities as have cognizance over drilling activities to enable such State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone.

(5) Retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids. The Director shall require the owner or operator to deliver the records to the Director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the Director for that purpose.

C. Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) the fact that land has been used to manage hazardous waste;

(2) the name of the State agency or local authority with which the plat was filed, as well as the address of the Director;

(3) the type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

20.6.2.5363 FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE: The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in Section 20.6.2.5320 NMAC, The amount of the funds available shall be no less than the amount identified in Subsection A(4)(vi) of Section 20.6.2.5362 NMAC. The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

20.6.2.5364 – 20.6.2.5399: [RESERVED]

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC **Navajo Refining Company, L.L.C.,** **Petitioner.**	**WQCC 14-15 (R)**

DIRECT TESTIMONY OF

MICHAEL McKEE

ON BEHALF OF

NAVAJO REFINING COMPANY, L.L.C.

June 15, 2015

Contents

1. Please state your name and business address.

My name is Michael McKee. My business address is 2828 N. Hardwood St., Dallas, Texas 75201.

2. Please state your qualifications to provide this testimony.

I am a chemical engineer with more than 36 years of experience in the petroleum refining industry. I have a B.S. in Chemical Engineering, History, and Macroeconomics from Cornell University, and have also completed an Executive Education program at the University of Pennsylvania's Wharton School. I am currently the Vice President of Refining Operations at HollyFrontier Corporation, a corporate affiliate of Petitioner Navajo Refining Company, L.L.C. (Navajo Refining). Previously, from June 2011 to December 2014 I served as the Refinery Manager for Navajo Refining in Artesia, New Mexico. Prior to joining Navajo Refining, I have worked in the petroleum refining industry for Sunoco, Murphy Oil, HIVENSA, and Amerada Hess. A copy of my resume is attached as Exhibit A to this testimony. In my current position and in my prior capacity as the Refinery Manager at Navajo Refining, I have been personally involved in projects to identify and implement water conservation efforts at Navajo Refining and in the decision-making process to pursue a new underground injection well for wastewater disposal.

3. Why is water conservation important to Navajo Refining?

Water conservation provides important benefits to both Navajo Refining and to the local community. In southeast New Mexico, we face significant constraints on both water availability and on wastewater disposal options. Implementing water conservation measures will allow the refinery to alleviate both of these concerns by reducing water intake and by reducing wastewater disposal. This provides important benefits to the local community by freeing up water resources for other current or future uses. It also provides important benefits to the refinery. Reducing water intake and wastewater disposal can result in significant cost savings for the refinery. At the same time, water conservation efforts provide the refinery with additional operational flexibility to expand operations and processing capacity without being constrained by existing limitations on water intake or wastewater disposal.

4. What water conservation measures are currently under consideration at Navajo Refining?

Navajo Refining has identified a series of water conservation measures that could be implemented at the facility if certain conditions are met. A summary of these water conservation measures is provided in Table 1 below. If all of the measures were adopted, we estimate that water use at the refinery could be reduced by 39%. A number of these water conservation measures are related to the long-term goal of becoming a zero-discharge facility. While this goal may not be attainable in the near term, it has forced us to consider opportunities to reduce water intake and water disposal through the reuse and recycling of wastewater streams throughout the facility. For example, we have approved initiatives to implement a secondary reverse osmosis (RO) unit to recover RO reject fluid from primary RO units as well as boiler condensate recovery and H2 plant condensate recovery. We are also evaluating an initiative to install a RO system at

our wastewater treatment unit. Other water conservation measures are focused on alternative water intake sources that will reduce our demand for groundwater and for water purchased from Artesia. These include initiatives to use Artesia's publicly owned treatment works (POTW) effluent for makeup water and to capture and use stormwater that is otherwise processed through the refinery's wastewater treatment unit and discharged. Taken together, these initiatives represent significant opportunities for the refinery and the local community.

However, as I discuss below in response to the next question, not all of these measures—or other future measures—may be possible due to the lack of a Class I hazardous waste injection well program in New Mexico.

Table 1:

Navajo Water Conservation Efforts

Summary

No.	Initiative	Status	Conservation (gpm)
1	3RD RO Skid	In Service	100
2	Secondary RO	Approved - Construction kickoff complete	210
3	Boiler Condensate Recovery	Approved - Engineering kickoff complete	100
4	H2 Plant Condensate Recovery	Approved - Engineering kickoff complete	50
5	Use City POTW Effluent for Makeup (annual average)	Evaluation complete - engineering proposal received	600
6	Additional POTW water via increase in Navajo Discharge*	Se Removal, TDS segregation complete / TBLL near complete	150
7	Stormwater Re-use	Evaluation complete - engineering proposal received	varied
8	Steam Optimization	Evaluation complete - engineering proposal received	50
9	Navajo WWTP RO System**	Approval pending - Engineering complete	240
	Potential Total Reduction (gpm)		1210
	Potential Total Reduction (%)		39%

* Water for re-use via POTW decreases as refinery conserves water
** WWTP RO system would eliminate savings from 6 above

5. How would a UIC Class I hazardous waste injection well program benefit Navajo Refining?

Having a UIC Class I hazardous waste injection well program in New Mexico would provide Navajo Refining with operational flexibility as it evaluates potential opportunities for water conservation and for plant expansion.

As described above, many of the water conservation initiatives identified by Navajo Refining involve reuse or recycling of current wastewater streams. While these initiatives can reduce the total volume of wastewater from the refinery, they also have the effect of concentrating the chemical constituents of the wastewater effluent. As more and more of these initiatives are implemented, the concentrations of certain chemical constituents such as Selenium may approach or exceed thresholds for characteristically hazardous waste which cannot be discharged in Navajo Refining's existing Class I non-hazardous waste injection wells.

While Navajo Refining's current effluent steams are below characteristically hazardous waste thresholds, it is critical that changes to the refinery's operations—including adoption of water conservation measures—do not jeopardize the productivity of the refinery. Thus obtaining a Class I hazardous waste injection well permit would allow the refinery to continue discharging effluent even if it exceeds hazardous waste concentration thresholds for non-hazardous injection wells. This will allow the refinery to pursue additional opportunities related to water conservation measures, changes to the current crude oil slate, and facility expansion. It will also provide an additional safeguard in the event that there is a problem with the refinery's existing treatment units for wastewater effluent. Further installing a disposal well that complies with the Class I hazardous waste injection well regulations and can be operated subject to a Class I hazardous waste injection well permit will provide further assurance that discharge of effluent from the refinery will not increase the risk of harm to the environment.

Finally, Navajo Refining is uniquely situated to design and install a Class I hazardous waste injection well at this time. Navajo Refining currently disposes of wastewater treatment plant effluent through three Class I nonhazardous waste injection wells. However, due to their age and competition from other wells in their immediate vicinity, maximum injection rates have slowed. As a result, the refinery is considering options for constructing the fourth well as a hazardous waste injection well. If the fourth well is initially permitted as a Class I nonhazardous well, the proposed regulations would permit the refinery to convert the Class I nonhazardous waste injection well permit into a hazardous well permit once it complies with all of the Class I hazardous waste injection well requirements required by the proposed regulations and completes a no migration petition process required by U.S. EPA. By constructing the well to comply with the more stringent requirements for Class I hazardous waste injection wells, the refinery would have the ability to convert the well if hazardous waste injection well regulations are approved by the WQCC. Again, by adopting the regulations now while Navajo Refining is evaluating options to construct a new well, the refinery will increase its flexibility going forward.

6. How would approval of a Class I hazardous waste injection well permit change effluent that Navajo Refining disposes through underground injection?

As explained earlier, approval of a Class I hazardous waste injection well permit would provide Navajo additional operational flexibility.

At this time, we do not anticipate any changes that would increase the amount of pollutants disposed of by the refinery on a mass basis. The primary effect of the water conservation measures described above would be to concentrate the wastewater effluent streams, not to change the chemicals that are present. As a result, the concentration of chemicals would increase due to decreased water volume, but neither the identity of the chemical constituents nor their masses would change. However, the amount of chemicals disposed of through underground injection could increase as a result of changes to the RO process. If a secondary RO unit is added, the more concentrated RO reject fluid would be disposed of in an injection well rather than through land application. Because the water treated in the RO units has the same source as the makeup water that is eventually processed through the wastewater treatment unit, this would not introduce any new chemical constituents that are not already disposed of through underground injection at the existing Class I nonhazardous waste injection wells. Instead, it

would simply increase the mass of constituents that are already being injected into the Class I nonhazardous waste injection wells.

Additional changes in the chemical composition or mass of chemicals in the wastewater effluent could occur in the future as a result of the flexibility afforded by a fourth injection well that would be permitted for the disposal of hazardous waste. For example, new crude sources in the Permian Basin could have different chemical compositions than those currently processed at the refinery. Likewise, an increase in production capacity would result in a greater quantity of chemical constituents that must be disposed of through underground injection. However, these changes would likely be modest and, as explained below, any significant change in the chemical composition of the effluent would likely require Navajo Refining to engage in a new permitting process.

7. Does Navajo Refining currently have plans to seek approval for a UIC Class I hazardous waste injection well if the proposed regulations are adopted?

Yes. As discussed above, the refinery will soon need to install a fourth underground injection well to address reduced injection rates at the three existing wells. Navajo Refining intends to construct the fourth well so that it would be meet the requirements for a Class I hazardous wastes injection well and, under the proposed regulations, could be converted to a Class I hazardous waste injection well if such regulations are approved in New Mexico. At this time, the refinery is evaluating options for potential well locations and injection formations to ensure that the fourth well will have sufficient capacity to meet the refinery's projected disposal needs going forward. No final decision has been made with respect to the location of the fourth well.

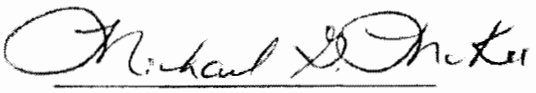
8. What additional steps would Navajo Refining have to take before operating that well as a UIC Class I hazardous waste injection well?

If the fourth well is initially approved as a Class I non-hazardous waste injection well, Navajo Refining would have to go through a number of steps before operating the well as a Class I hazardous waste injection well.

First, the refinery would have to obtain a Class I hazardous waste injection well permit. This would involve submitting a new application to the New Mexico Oil Conservation Division and demonstrating that the well meets all of the criteria for a Class I hazardous waste injection well.

Second, after obtaining a state permit, the refinery would have to obtain a "no migration petition" from the U.S. Environmental Protection Agency (EPA). Under federal law, the land disposal of hazardous waste is prohibited unless a facility first obtains an exclusion from EPA. For underground injection control wells, such an exclusion can be obtained on a case-by-case basis by demonstrating that the hazardous wastes disposed of in the well will not migrate out of the injection zone and pose a risk to groundwater for 10,000 years. While the refinery does not currently discharge any hazardous waste in its wastewater effluent, we intend to seek a no migration exemption for all chemical constituents that are currently found in our wastewater effluent and that would meet the definition of characteristically hazardous waste if present sufficiently high concentrations, regardless of the anticipated concentrations of those chemicals in our waste stream. This will ensure that the permit is broad enough to cover any future water

conservation measures that will concentrate the wastewater effluent. We do not intend to seek a no migration exemption for any hazardous substances that are not currently present in our wastewater effluent. Thus, before an entirely new hazardous waste stream could be disposed of in the well, the refinery would have to modify its permit and obtain a new no migration exemption from EPA.



Michael McKee

McKee, Michael

Vice President Refining Operations at HollyFrontier Corporation

Michael.McKee@Hollyfrontier.com

Summary

Experienced Chemical Engineer from Cornell University with over 36 years of manufacturing experience in the petroleum refining industry. Presently VP of Refining Operations heading HollyFrontier's Refining system consisting of five mid-continent refineries. Previously served in New Mexico as VP & Refinery Manager for HollyFrontier's NAVAJO Refining Company. Served 4 years as the Refinery Manager at SUNOCO's Philadelphia Refinery. Served over 10 years as Operations Manager for Amerada HESS, Murphy and SUNOCO petroleum refineries. Headed SUNOCO's initial bio-fuels venture implementing the conversion and startup of a 100 Mgal/year ethanol production facility in New York. Specialties: Specialized in FCC and Reforming Processes. Implemented centralized control room and DCS conversion in 4 refineries including two grass roots projects. Headed startup teams on grass roots construction of MTBE, sulfuric acid alkylation and hydrocracker units.

Experience

Vice President Refining Operations at HollyFrontier Corporation

December 2014 - Present (7 months)

Responsible for the safe, reliable and environmentally compliant operation of the five refineries in the HollyFrontier system. Refineries are located in Artesia, NM, Tulsa, OK, El Dorado, KS, Cheyenne, WY and Salt Lake City, UT. Our goal is to continue to operate this 450 MB/D network taking advantage of our mid-continent crude slate and highly complex facilities. We will continue to push our personal and process safety performance to industry leading levels while maximizing the reliable production of transportation products. We will look to capture the synergies of this refining system by integrating assets and maximizing utilization of each facility with strategic inter-refinery trading.

VP & Refinery Manager Navajo Refining Company at HollyFrontier Corporation

June 2011 - December 2014 (3 years 7 months)

Head of the Navajo Refining Company for Holly Frontier Corp. based around facilities in Artesia and Lovington, New Mexico. Company consists of 2 refineries with 100 MB/D of nominal crude capability consisting of downstream processing units including FCCU, hydrocracker, continuous catalytic reformer, multiple hydrotreating units, HF alkylation unit, C5-C6 isomerization and sulfur recovery facilities.

General Manager, Ethanol Production at Sunoco

November 2009 - December 2010 (1 year 2 months)

Successfully headed the commissioning of the Fulton Ethanol plant for SUNOCO. This venture served as SUNOCO's initial foray into the biofuels arena. The project involved modifying an existing brewery into the

first successfully operating commercial ethanol plant. The project was completed under budget and ahead of schedule. It is presently operating reliably having met all of its performance requirements associated with its justification.

General Manager, Petroleum Refinery Philadelphia at Sunoco
October 2003 - November 2009 (6 years 2 months)

Responsible for managing the complete operation of the 7th largest petroleum refinery in North America. Process units consist of 335MB/D of crude capacity, 135 MB/D of FCCU capacity, catalytic reforming, ULSD hydrotreating capability, HF and H2SO4 alkylation processing and all associated environmental controls. Responsibilities include fiscal accountability, mechanical reliability and availability objectives, as well as safety and environmental ownership in the facility as well as the community.

Operations Manager at Murphy Oil
January 2001 - October 2003 (2 years 10 months)

Managed the Operations Department of Murphy's 110 MB/D crude oil refinery in Meraux, LA. Processes included FCCU, UOP CCR, crude distillation, HF alkylation and hydrotreating capability. Involved with two major capital projects including construction of 3200 psi hydrocracker for sulfur compliance and conversion to Yokogawa DCS installation. Previously the facility had Honeywell. This also included the construction and implementation of a centralized control room.

Operations Manager at HOVENSA
February 1996 - November 2000 (4 years 10 months)

540 MB/D refinery owned by Amerada HESS and located in St. Croix Virgin Islands. The refinery became half owned by Venezuela forming a joint venture called HOVENSA.

Operations Manager at Amerada Hess
February 1991 - February 1996 (5 years 1 month)

Port Reading, NJ

Research Associate at Sunoco
August 1989 - February 1991 (1 year 7 months)

Petroleum Catalytic Reforming expert for SUNOCO

Education

University of Pennsylvania - The Wharton School
Executive Education, 2010

Cornell University
B. S. Chemical Engineering, History, Macroeconomics, 1975 - 1979
Activities and Societies: National Society of Black Engineers, American Institute of Chemical Engineers,

Interests

Alternative Fuel Technology, Guitar, Costa Rica

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC	**WQCC 14-15 (R)**
Navajo Refining Company, L.L.C.,	
Petitioner.	

DIRECT TESTIMONY OF

ROBERT F. VAN VOORHEES

ON BEHALF OF

NAVAJO REFINING COMPANY, L.L.C.

June 15, 2015

Contents

Exhibits

A. *Curriculum Vitae* for Robert F. Van Voorhees

B. J. E. Clark, D. K. Bonura & R. F. Van Voorhees, "An Overview of Injection Well History in the United States of America" Underground Injection Science and Technology (C. F. Tsang & J. A. Apps, eds.) (2005) ("Overview History")

C. Van Voorhees, R., "Removed from the Environment," 18 Env. L. Forum 23 (2005)

D. EPA Poster "Safe Drinking Water Act Underground Injection Control (UIC) Program Protecting Public Health and Drinking Water Resources," (EPA 816-H-10-001) (November 2010) ("Protecting Public Health"

E. EPA, "UIC Inventory by State – 2011"

F. EPA, "Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells," xiii (EPA 816-R-01-007) (2001) ("Class I Study of the Risks")

G. EPA, "US EPA's Program to Regulate the Placement of Waste Water and other Fluids Underground," at 1, EPA 816-F-04-040 (June 2004) ("EPA Program to Regulate Waste Water")

H. Navajo Refining Company, Summary of Proposed Water Conservation Rule

I. Rish, W. A., Ijaz, T. and Long T. F. (1998). "A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells" in Underground Injection Science and Technology (C.F. Tsang & J. A. Apps, eds.) (2005)

1. Please state your name and business address.

My name is Robert Van Voorhees. My business address is 1155 F Street, NW, Washington D.C. 20004.

2. Please state your qualifications to provide this testimony.

I hold a Bachelor of Arts Degree in Political Science from the George Washington University and a Juris Doctor Degree from the University of Virginia School of Law. I have practiced law in the area of environmental regulation for more than forty years. Since 1985, I have focused a substantial amount of time working in the area of underground injection control (UIC) regulation at both the state and federal levels in the United States. That experience has included the following:

- Representation of the Underground Injection Control Group of the American Chemistry Council (ACC) (formerly the Chemical Manufacturers Association (CMA)), a group of more than twenty companies operating Class I hazardous and nonhazardous injection wells in states located within the U.S. Environmental Protection Agency (EPA) Regions 4, 5, 6 and 7 from 1985 through 2005.

- Representation of the Underground Injection Technology Council (UITC) (the successor to the ACC Underground Injection Control Group) from 2006 through 2010 and service as Manager and then Executive Director of that group from 2011 to the present.

- Participation in the official regulatory negotiation conducted by EPA from 1986 through 1987 to develop proposed regulations for implementation of the Hazardous and Solid Waste Amendments (HSWA) of 1984, amending the Resource Conservation and Recovery Act (RCRA) to include among other things the land disposal restriction program requiring EPA to develop and promulgate regulations prohibiting the deep well injection of hazardous waste except by methods found to be protective of human health and the environment.

- Commenting on EPA's notice of proposed rulemaking for Hazardous Waste Disposal Injection Restrictions, 52 Fed. Reg. 32446 (August 27, 1987) on behalf of the CMA Underground Injection Control Group.

- Representing CMA and individual companies before the United States Court of Appeals for the District of Columbia Circuit by filing and intervening in the petitions for review of the final EPA rule promulgating the Hazardous Waste Disposal Injection Restrictions (HWDIR), 53 Fed. Reg. 28118 (July 26, 1988). The D.C. Circuit upheld EPA's issuance of the HWDIR in *Natural Resources Defense Council v. EPA*, 907 F.2d 1146 (D.C.Cir.1990).

- Representing CMA/ACC, UITC and individual companies in advocacy to ensure prompt and effective implementation and management of the no migration exemption demonstration approval process by the EPA Office of Ground Water and Drinking Water (OGWDW) and EPA Regions 4, 5, 6 and 7 during the period from 1988 to the present.

Over the years this work has included providing input to EPA for the development of guidance documents, including "Guidance for Case-by-Case Extension Petitions for Class I Hazardous Waste Injection Wells With Submitted No Migration Petitions: UIC Program Guidance #69," "Determination of 'Hazardous Levels' for 'No Migration' Demonstrations Pursuant to 40 CFR Section 148.20; Underground Injection Control Guidance No. 71," "Incorporation of UIC 'No Migration' Petition Conditions into Class I Hazardous Waste Injection Well Permits: Underground Injection Control Program Guidance No. 73," "Modification of Class I Hazardous Waste Injection Well 'No Migration' Exemptions -- Underground Injection Control Program Guidance No. 74," and "Underground Injection Control (UIC) Class I SNC Redefinition - UICP Guidance No. 81."

- Representing CMA and assisting others in obtaining enactment of the Land Disposal Program Flexibility Act of 1996, P. L. 104–119 (Mar. 26, 1996), 110 Stat. 830.

- Representing individual companies in obtaining new or revised Class I hazardous and nonhazardous injection well permits from a number of states, including Arkansas, Louisiana, Oklahoma, and Texas in EPA Region 6.

- Representing individual companies in obtaining new, modified or reissued approvals of Class I hazardous waste injection well no migration exemption demonstrations in EPA Regions 4, 5 and 6.

- Representing individual companies in conjunction with administrative, civil and criminal enforcement actions over the operation of Class I hazardous and nonhazardous injection wells in a number of different state and federal jurisdictions.

- Representing individual companies in the defense of civil actions in various courts seeking damages from the operation of Class I injection wells.

In 1996, I received the Ground Water Protection Council (GWPC) Award of Excellence in Ground Water Protection for outstanding contribution in the development of sound national regulations for underground injection control. GWPC is the organization of state ground water regulatory agencies which come together to mutually work toward the protection of the nation's ground water supplies. The purpose of the GWPC is to promote and ensure the use of best management practices and fair but effective laws regarding comprehensive ground water protection.

I have also written and presented extensively on issues related to Class I hazardous and nonhazardous injection wells. A list of my recent publications and presentations is included in my *curriculum vitae*, which is attached as **Exhibit A**.

3. What is the history of the UIC well program?

Injection of liquids into underground formations through wells was started by the petroleum industry. In the 1930s it was common practice to dispose of produced brine through injection wells. Since the early 1950s, injection wells have been used for fluids associated with industrial facilities. In the mid-1960s and 1970s, injection began to increase, growing at a rate of more than

20 new wells per year. In 1974, responding to concerns about underground injection practices, EPA issued a policy in which it stated that underground injection should only be conducted with strict control and clear demonstration that the wastes will not adversely affect useable groundwater supplies.[1/]

Enactment of the Safe Drinking Water Act (SDWA) in 1974 ratified EPA's underground injection policy position and required the Agency to promulgate minimum injection well requirements for state programs to prevent endangerment of underground sources of drinking water (USDWs).[2/] EPA and state agencies conducted detailed reviews of injection practices during the late 1970s which were incorporated into a final set of UIC regulations promulgated by EPA in 1980.[3/] With the 1980 regulations, a national standard was established protecting current and potential drinking water sources with less than 10,000 mg/l total dissolved solids (TDS) that could serve as a source of drinking water for a public water system. Minimum technical requirements for siting, construction, operation, testing, monitoring, and plugging and abandonment of injection wells were established in the UIC regulations.

4. What are the different classes of UIC wells?

1/ J.E. Clark, D.K. Bonura & R.F. Van Voorhees, "An Overview of Injection Well History in the United States of America" Underground Injection Science and Technology (C.F. Tsang & J.A. Apps, eds.) (2005) ("Overview History") [**Exhibit B**].

2/ The term "underground source of drinking water" and the acronym "USDW" are used throughout the EPA UIC regulations to identify the water resources required to be protected. The definition of "underground source of drinking water" is: "an aquifer or its portion:

"(a)(1) Which supplies any public water system; or
(2) Which contains a sufficient quantity of ground water to supply a public water system; and
(i) Currently supplies drinking water for human consumption; or
(ii) Contains fewer than 10,000 mg/l total dissolved solids [TDS]; and
(b) Which is not an exempted aquifer."

40 C.F.R. §§144.3 and 146.3. As noted, there are provisions that allow ground water meeting the specifications of subpart (a) to be designated as "an exempted aquifer" that is not a USDW. *See* 40 C.F.R. §144.1(g) (explaining the definition of USDW and the provision for designation of exempted aquifers), §144.7 (the procedure for designating exempted aquifers) and § 146.4 (setting forth the criteria for exempted aquifers.

Under the New Mexico UIC regulations, the term for the water resources to be protected by the UIC program is "ground water that has a TDS concentration of 10,000 mg/1 or less." NMAC §20.6.2.3109(c)(1). New Mexico also has a procedure for the designation of additional Class I well injection zones under NMAC §20.6.2.5103, but that designation provision is more stringent than the federal program because it is limited to ground water with "a concentration between 5,000 and 10,000 mg/1 TDS." NMAC §20.6.2.5103.

To avoid confusion between the EPA and New Mexico provisions, I will use the term "protected ground water" to refer to both unless it is important to focus on the specific provision in a particular context.

3/ Van Voorhees, R., "Removed from the Environment," 18 Env. L. Forum 23 (2005) [**Exhibit C**]; Brasier, F.M., and Kobelski, B.J., "Injection of Industrial Wastes in the United States," in Deep Injection Disposal of Hazardous and Industrial Waste at 2-3 (ed. by J.A. Apps. and Chin-Fu Tsang) (1996).

EPA's original UIC Program created five classes of injection wells. EPA has since added a sixth class.[4/] The principal factor used to define most classes was the type of activity and general nature of the fluids associated with that activity, including: a) injection of hazardous, industrial, and municipal waste; b) injection related to the production of oil and gas; c) injection related to the recovery of minerals; and d) other injection related to activities where data are insufficient to evaluate the threat to ground water (where fluids are not hazardous, but may still pose a threat). A secondary factor used in classification was the location (depth) of the injection relative to protected ground waters.[5/]

Class I wells, for example, inject hazardous, nonhazardous industrial or municipal waste, or radioactive waste, below the lowermost formation containing a protected ground water within one quarter mile of the wellbore. 40 C.F.R. § 144.6(a). The definition of a hazardous waste is set forth in the RCRA regulations under 40 C.F.R. Part 261. A fluid may be hazardous if it exhibits one of four characteristics (corrosive, reactive, ignitable or toxic) or if it is a listed waste as defined in 40 C.F.R. Part 261, Subpart D. As of 2011, the Class I category consisted of about 678 active wells in the United States. This total included 561 nonhazardous Class I wells and 117 wells that inject hazardous wastes. EPA, "UIC Inventory by State – 2011" [**Exhibit E**].

Class II injection wells are associated with disposal of fluids from oil and gas production and injection to enhance oil and gas production (secondary and tertiary recovery injection wells). The injected fluids are typically waste fluids produced from downhole in connection with primary production of oil and gas, fluids generated in the field in connection with oil and gas production (such as gas sweetening), or fluids used for enhanced recovery of oil or gas. 40 C.F.R. § 144.6(b). As of 2011, there were approximately 168,089 Class II wells in 33 states, including wells on Tribal Lands. [**Exhibit E**].

Wells injecting fluids for mineral extraction are defined as Class III wells. This includes: solution mining of salts; in situ extraction of metals, such as uranium; and mining of sulfur by the Frasch process. 40 C.F.R. § 144.6(c). At present, most active Class III facilities are associated with the solution mining of uranium and salt.

If a well is injecting hazardous fluids into a protected ground water, it would be defined as Class IV and is prohibited by the regulations and subject to immediate closure. Class IV wells used in remedial cleanups at EPA or State approved Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and RCRA sites, however, are allowed as long as the final cleanup standards are protective of human health and the environment 40 C.F.R. § 144.6(d).

According to the regulatory definition (see 40 C.F.R. §§ 144.80(e) and 144.81), Class V wells are any injection wells that: 1) emplace fluids into the subsurface; and 2) do not meet the

---

4/ All of the current classes are described and depicted on EPA's poster "Safe Drinking Water Act Underground Injection Control (UIC) Program Protecting Public Health and Drinking Water Resources," (EPA 816-H-10-001) (November 2010) ("Protecting Public Health ") [**Exhibit D**].

5/ EPA, Technical Program Overview: Underground Injection Control Regulations 7, EPA 816-R-02-025 (2001).

definitions of Classes I through IV or Class VI. 40 C.F.R. § 144.6(e).This category is predominantly shallow injection wells but does include several types of deep injection wells. Specific types of Class V injection wells are described in 40 C.F.R. § 144.81.

In 2010 EPA created an additional Class VI for wells that are not experimental in nature that are used for geologic sequestration of carbon dioxide. 40 C.F.R. § 144.6(f). *See* 75 Fed. Reg. 77287 (Dec. 10, 2010).

5. What is the UIC Class I hazardous waste injection well program?

By definition, Class I wells inject industrial or municipal wastewater beneath the lowermost formation containing "within one-quarter mile of the well bore" a protected groundwater. 40 C.F.R. § 144.6(a). Class I wells permitted to inject hazardous wastewater are referred to as hazardous wells; those that inject only nonhazardous wastewater are known as nonhazardous wells. Class I wells used for disposal of treated municipal sewage effluent are referred to as Class I municipal wells. 40 C.F.R. § 144.6(a)(3).

Many Class I wells inject wastewater associated with the chemical products, petroleum refining, and metal products industries. Injected wastewaters vary significantly based on the process from which they are derived. Some of the most common wastewaters are manufacturing process wastewater, mining wastes, municipal effluent, and cooling tower and air scrubber blowdown.

In 1984, Congress enacted the HSWA to RCRA, which banned the land disposal of hazardous waste, unless the hazardous waste is treated to meet specific standards or unless the EPA could determine that the disposal method would not adversely affect human health and the environment.[6/] In a 1985 Report to Congress on injection of hazardous waste, the EPA Office of Drinking Water stated that underground injection "was considered a method to isolate wastes (that could not be easily treated) from the accessible environment by placing them into deep formations where they would remain for geologic time."[7/] The report included an inventory of hazardous wells and also looked at hydrogeology, engineering, mechanical integrity tests, monitoring waste characteristics, and noncompliance incidents. Overview History 4 [**Exhibit B**].

From 1986 to 1988, State and Federal agencies, environmental groups, and industry representatives participated in a facilitated negotiated rulemaking process ("Reg-Neg") to develop consensus requirements to implement the land-ban provision of HSWA. Although the Reg-Neg group did not achieve complete consensus, EPA used what it learned through that process to strengthen the regulatory requirements for hazardous injection wells by establishing the no-migration demonstration requirements for Class I hazardous waste injection wells. The demonstration required to obtain approval for injection of hazardous waste into a Class I well is known as a no-migration exemption petition. Overview History 4 [**Exhibit B**].

6/ Smith, R.E., "EPA Mission Research in Support of Hazardous Waste Injection 1986-1994," in *Deep Injection Disposal of Hazardous and Industrial Waste* 9 (ed. by J.A. Apps and Chin-Fu Tsang) (1996).

7/ EPA, "Report to Congress on Injection of Hazardous Waste" 3 (EPA 570/9-85-003) (1985).

As summarized by EPA, "[t]he 1988 UIC regulations ... offer additional protection by requiring operators of Class I hazardous wells to complete no-migration petitions to demonstrate that the hazardous constituents of their wastewater will not migrate from the injection zone for 10,000 years, or that characteristic hazardous wastewater will no longer be hazardous by the time it leaves the injection zone."[8/] EPA also stated: "After 10,000 years of containment constituents would either be immobilized or otherwise be at non-hazardous levels throughout the injection zone." 53 Fed. Reg. 28118, 28122 (July 26, 1988), An environmental group which had withdrawn from the Reg-Neg process in the final stages challenged the 1988 EPA UIC Hazardous Waste Disposal Injection Restrictions and Requirements. The U.S. Court of Appeals for the D.C. Circuit ruled in EPA's favor and upheld the 1988 regulations, leaving the No-Migration Exemption program for Class I hazardous waste injection wells in place. *Natural Resources Defense Council v. EPA*, 907 F.2d 1146 (D.C. Cir. 1990).

In addition to adding the no migration demonstration requirement to satisfy the HSWA requirements in 1988, EPA added a number of other requirements in a new subpart G to the 40 C.F.R. Part 146 regulations that must be met by Class I hazardous waste injection wells. These additional requirements increased the frequency of mechanical integrity tests from once every 5 years to once annually and required the use of radioactive tracer surveys in addition to the tests previously specified in 40 C.F.R. § 146.8, added specificity to the existing compatibility requirements, applied more specific siting requirements, expanded the minimum area of review from one-quarter mile to two miles, and listed additional methods for monitoring Class I hazardous waste injection activities. Subpart G also added operational controls, including: (i) automatic shutoff or alarm devices, (ii) controls on wells injecting fluid which could generate gas in the subsurface, (iii) limitations on the use of fluid seals, and (iv) a requirement that annulus pressures exceed injection pressures in most instances.

The design of Class I hazardous wells under the 1988 regulations is state-of-the-art. The wells are built with redundant containment systems and extensively monitored to prevent any loss of injected fluids. For environmental safety, Class I injection regulations require a well within a well — analogous to the double-hull arrangement on modern oil tankers. Regulations also require monitoring of injection pressure and the pressure of the protective fluid between the well casing and injection tube, which means that any leaks during injection would be immediately detected. Class I hazardous injection wells have alarm systems used to shut down injection operations should any loss of well integrity occur. This monitoring supplements the strict testing of construction integrity and mechanical operating integrity that wells must undergo before initial operation and periodically throughout the life of a well.

EPA concluded in the preamble of the 1988 Federal Register notice for the improved regulatory program mentioned earlier that, once the geologic receiving formation has stabilized following injection, there is little or no possibility that injected wastes will ever move vertically upward out of the injection zone. Class I industrial wells are also designed to inject industrial wastewater far below any potentially usable sources of drinking water.

8/ EPA, "Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells," xiii (EPA 816-R-01-007) (2001) ("Class I Study of the Risks") [**Exhibit F**].

6. What is the difference between a Class I hazardous and a Class I non-hazardous waste injection well?

Class I hazardous waste injection well operators must meet all of the regulatory requirements that apply to all Class I industrial wells and are then subject to a number of unique additional requirements, most of which were added in 1988. First, as described above, a Class I hazardous well operator must demonstrate that operation of the well qualifies for exemption from the RCRA land disposal restrictions that would otherwise ban the injection of hazardous waste into a Class I well – the so called "land ban." In addition to the no migration exemption demonstration, a number of other additional requirements must be met by Class I hazardous waste injection wells, as generally described below. *See* 40 C.F.R. Part 144, Subpart F and Part 146, subpart G.

a. Siting Requirements

All Class I injection well applicants must inject into a formation that is below the lowermost formation containing, within one-quarter mile of the well, a protected ground water. To demonstrate this, operators are required to provide geologic studies of the injection and confining zones to show that:

- The receiving formations are sufficiently permeable, porous, homogeneous, and thick enough to receive the fluids at the proposed injection rate without requiring excessive pressure;
- Formations are large enough to prevent pressure buildup and ensure that injected fluid will not move out of the injection zone;
- There is an overlying low-permeability confining zone to prevent vertical migration of injection fluids;
- Injected fluids are compatible with well materials that will be contacted and with rock and fluid in the injection zone; and
- The area is geologically stable.

In addition to these requirements, Class I hazardous waste injection wells must provide additional structural studies to demonstrate that the injection and confining formations are free of vertically transmissive fissures or faults capable of allowing migration out of the injection zone and to demonstrate that there will be additional features, such as at least one sequence of permeable and less permeable strata that will provide an added layer of protection for protected groundwater. In addition to assessing geological stability, Class I hazardous waste injection well operators can be required to monitor for seismicity.

All Class I injection well operators are required to identify an area of review around the well that must have a minimum radius of one-quarter mile. For Class I hazardous wells, the area of review is a minimum of two miles and can be larger by calculation. Operators of all Class I wells must identify the location of all known wells within the injection well's area of review which penetrate the injection zone. The operator must develop and implement a corrective action plan

to prevent movement of fluid into protected groundwater through any wells which are improperly sealed, completed, or abandoned.

b. Construction Requirements

All Class I wells must have a multilayered design with approved engineering schematics and subsurface construction details to prevent fluids from entering protected ground waters. The wells must have at least two layers of concentric casing and cement with surface casing cemented from the surface to beneath the lowermost protected ground water. Class I hazardous wells must also have cement the length of the long string casing and through the confining zone to prevent the movement of fluids into or between protected ground waters or into any unauthorized zones. There are additional detailed cementing, casing, tubing, packer and completion requirements based on the specifics of each well, the injected fluids, and site-specific characteristics. The construction details must be approved before the well is constructed, and the well and injection zone must be logged and tested before injection of any waste stream is authorized.

c. Operating Requirements

Class I wells must operate at injection pressures that will not initiate new fractures or propagate existing fractures with pressure maintained in the annular space. Class I hazardous wells must also maintain annular pressure to protect against leaks. Only the approved fluids may be injected, and continuous monitoring and recording devices must be operated on all Class I wells. For Class I hazardous waste injection wells, there is an additional requirement for automatic alarm systems and for steps to be followed for automatic shutdown or immediate response to any loss of mechanical integrity in the well that could indicate a leak.

d. Monitoring and Closure

All Class I wells must undergo mechanical integrity testing (MIT) at least every five years, but Class I hazardous wells must undergo MIT annually along with monitoring of the pressure buildup in the injection zone. Every Class I well must be plugged and secured pursuant to an approved plan before it is abandoned. Class I hazardous waste wells must undergo MIT reservoir testing and additional steps such as flushing and post closure ground water monitoring until injection zone pressure cannot influence protected ground waters. Class I hazardous wells also have extensive financial assurance requirements that cover, in addition to the plugging and abandonment required for all Class I wells (40 C.F.R. § 144.52(a)(7)(i)), post-closure care. Class I hazardous wells also have prescribed financial instruments that must be used. 40 C.F.R. Part 144, Subpart F.

7. What are the benefits of having a UIC Class I hazardous waste injection well program?

The most important benefit of having a Class I hazardous waste injection well program follows from EPA's repeated determination that deep well injection is the safest and most effective disposal method for the disposal of hazardous industrial wastes. Based on studies, EPA has concluded that "Class I underground injection wells are safer than virtually all other waste

disposal practices."[9/] Absent the availability of this option for the management of hazardous waste, less safe and less effective methodologies would need to be used, resulting in increased risk to human health and the environment. As EPA has noted, "[w]hile treatment technologies exist, it would be cost prohibitive to treat and release to surface waters the billions and trillions of gallons of wastes that industries produce each year."[10/] EPA has consistently found that "underground injection is an effective and environmentally safe alternative to surface disposal." EPA Program to Regulate Waste Water at 1 [**Exhibit G**].

In summary, EPA has found that deep well injection under the UIC program: (1) reduces exposure to injected wastes by relying on proven federal and state regulatory programs; (2) eliminates billions of gallons of hazardous waste from the environment each year; (3) decreases public costs for water treatment; (4) avoids cost of ground water remediation, medical monitoring for health effects, and replacing a drinking water supply; and (5) enables communities to make informed wise local land use decisions. EPA Program to Regulate Waste Water at 2 [**Exhibit G**].

Another benefit comes in the form of water conservation. With the availability of hazardous waste injection, it should be possible for managers of waste waters to recover water from waste streams for other beneficial uses without being concerned that the processing of those wastes would yield a residual waste stream that is too concentrated and therefore more likely to be characteristically hazardous. Given trends toward water scarcity in some areas, this would provide potentially critical flexibility for water conservation that is otherwise unavailable. Hand-in-hand with this ability to conserve water goes the ability to minimize waste through the recovery of useable water. By recovering water from injected waste streams, the volumes of waste finally injected could be significantly reduced.

The recovered and reused water would also provide economic benefits to neighboring communities which would have available more fresh water, the use of which is offset by the use of the water recovered from the injected waste streams.

Because disposal capacity for existing Class I nonhazardous waste injection wells is finite, reducing injected volumes to those wells preserves capacity. This will also serve to reduce the size of the injectate plume, reducing the area of review and the surrounding area potentially affected by the injection operation.

8. How are Class I hazardous waste injection wells regulated to avoid posing a greater risk to the environment than other classes of UIC wells?

The avoidance of greater risk is achieved by the additional technical requirements added in 40 C.F.R. Part 144 and the new requirements in part 146, subpart G in 1988 (along with additional

---

9/ EPA, 1991 Toxics Release Inventory Public Data Release Report, EPA 745-R-93-003 ("1991 TRI PDR Report"), at 305 (May 1993).

10/ EPA, "US EPA's Program to Regulate the Placement of Waste Water and other Fluids Underground," at 1, EPA 816-F-04-040 (June 2004) ("EPA Program to Regulate Waste Water")[**Exhibit G**].

requirements already in Part 144, Subpart F). I have already described the content of these technical requirements above.

In addition, 40 C.F.R. Part 148 specifies that an operator must submit a no-migration demonstration to show through sophisticated computer modeling either (1) that the injected hazardous waste will not migrate to a protected ground water within at least 10,000 years, or (2) that the injected hazardous waste will be rendered nonhazardous through attenuation, transformation, or immobilization. The first of these demonstrations is what is popularly referred to as a "containment" demonstration, while the second is known as a waste transformation and fate demonstration. I have already described the no migration exemption demonstration process.

The authority to make no migration determinations is delegated to each EPA Region's Water Division Director and can be delegated to any state having primacy for the UIC Class I hazardous waste program. No state has yet applied for primacy to administer the land disposal restriction program of part 148. As I understand it, the no migration program for New Mexico will not be included in the proposed regulations and would therefore be administered by EPA Region 6, which has the largest number of approved Class I hazardous waste injection facilities and the most experience with the program (often providing technical assistance to other EPA regions). Region 6 has approved 42 of the total 56 petitions approved to date and currently has oversight responsibility for 33 of the 45 active petitions.[11/] Each no migration demonstration petition is a complex technical analysis which describes the well construction, the injected wastewater, and the local and regional geology and hydrogeology. It relies on conservative mathematical models to demonstrate that the hazardous wastewater will not migrate from the injection zone into protected ground waters. Once a no-migration petition is approved, an operator may inject only those hazardous wastes that are listed in the petition.

Key factors that must be considered in the modeling demonstration include the pressure, permeability, and porosity of both the injection zone and confining layers, as well as mobility of hazardous constituents (e.g. their coefficients of dispersion and diffusion). For modeling the geochemical "fate-of-waste," an analysis of the chemical reaction(s) that will render the waste nonhazardous must be considered as well. Operators must conservatively estimate their projected injection volume, rate, and pressure, taking into consideration key factors, and produce an estimate of their plume dimensions forecast into the future, paying close attention to how much reduction in concentration is likely over both the operational period and any long-range non-operational period (e.g., 10,000 year "containment" demonstration).

To provide public notice, EPA must publish its decision of whether to approve or deny a no-migration demonstration in the Federal Register. Approvals are not synonymous with UIC permit approval, nor do they necessarily carry the same approval duration that an accompanying permit might have. Much of this is dependent upon what geologic, hydrological, and operational assumptions were made in the computer modeling exercise.

9. How do States obtain authority to implement the UIC well program?

11/ *See* http://www.epa.gov/region6/water/swp/uic/landban.htm [accessed on June 12, 2015].

The UIC Program requirements were developed by EPA, but the program was designed by Congress to be adopted and implemented by states, territories, and tribes. States, territories, and tribes can submit an application to EPA to obtain primary permitting and enforcement responsibility, known as "primacy." State agencies that have been granted this authority for specific well classes oversee the injection activities in their states. The requirements for obtaining primacy are outlined in the UIC regulations at 40 CFR Part 145.

To gain authority over Classes I, III, IV, V, and VI, state programs must be at least as stringent as the federal program and show that their regulations contain effective minimum requirements (for example, inspection, monitoring, and recordkeeping requirements that well owners and operators must meet). While state regulations must be at least as stringent as the federal requirements, they may be more stringent. Achieving state primacy approval for Classes I, III, IV, V, and VI is governed by section 1422 of the SDWA. For Class II UIC program primacy, states have the alternative under section 1425 of the SDWA of demonstrating that the state's Class II program will achieve an equivalent level of protection for protected groundwater.

10. Does New Mexico currently have authority for the UIC Class I hazardous waste injection well program?

No, but it does have primacy generally. After EPA promulgated UIC technical regulations in 1980, States were required to adopt regulations that met or exceeded the minimum technical criteria. If State regulations were found to be adequate, the State was granted primacy, for various classes of wells. If a State did not adopt minimum federal regulations, EPA was required to implement the program for the State. Thirty-five States and territories have received primacy for Class I programs. EPA implements Class I programs in the remaining twenty-two States and territories.

In 1983 New Mexico was granted primacy over the UIC program for all Class I wells. Notice of this approval was published in the Federal Register on July 11, 1983 (48 Fed. Reg. 31640); the effective date of this program was August 10, 1983. The UIC program for Class I, III, IV and V injection wells in the State of New Mexico is administered by the New Mexico Water Quality Control Commission, the Environment Department (formerly Environmental Improvement Division), and the Energy, Minerals and Natural Resources Department, Oil Conservation Division (OCD).

EPA's 1988 revision of the regulations applicable to Class I hazardous waste injection wells described above occurred subsequent to New Mexico's obtaining primacy for the Class I program. That promulgation of new Class I regulations by EPA triggered an obligation for New Mexico and every other state to revise and update its Class I program to conform to the federal requirements. Rather than amend its regulations to incorporate the changes made in the federal regulations, however, New Mexico chose in 2001 to eliminate the authorization of Class I hazardous waste injection wells because there had been no existing Class I hazardous injection wells or applications for Class I hazardous waste injection wells in New Mexico since the inception of the UIC program.

Accordingly, New Mexico currently has complete primacy for administration of the Class I UIC program, including authority over Class I hazardous waste injection wells, but the permitting and

operation of those wells is currently prohibited. If the WQCC approves the proposed regulations to allow the permitting of Class I hazardous waste injection wells, that step would not involve an application for primacy but rather the adoption of a program revision and the submission of that program revision to EPA for approval under 40 C.F.R. § 145.32.

11. What are the minimum requirements for a UIC Class I hazardous waste injection well program?

The paramount requirement for a state Class I hazardous injection well program is that it must "establish requirements at least as stringent as the corresponding [federal] provisions." 40 C.F.R. § 145.11(b)(1). The specific substantive provisions for which the state must match stringency are identified section 145.11. As noted, "[m]any of the requirements for State programs are made applicable to States by cross-referencing other EPA regulations." In addition to the generally applicable requirements for all Class I wells that are already part of New Mexico's UIC program, Class I hazardous wells must also meet "the requirements of § 144.14 (requirements for wells injecting hazardous waste), paragraphs (a)(7) and (a)(9) of this section, and subpart G of part 146." 40 C.F.R. 144.52(a). The financial assurance requirements of 40 C.F.R. Part 144, Subpart F must also be mirrored for Class I hazardous wells.

In contrast, the UIC regulations do not require a state to adopt regulations that are at least as stringent as the no migration exemption provisions in 40 C.F.R. Part 148 in order to have a program that includes the minimum requirements for UIC Class I hazardous waste injection wells. For the specific land disposal restrictions on injection of RCRA hazardous wastes being adopted pursuant to HSWA, EPA took a different approach because the statute required those restriction to become effective for all wastes by specific dates unless one or more of the various options for postponing the effective dates applied. EPA used the same approach for the no migration exemption provisions and included all of those provisions in the new Part 148 to the UIC regulations. The new regulations in Part 148 became immediately effective everywhere, including in primacy states, and have been directly enforced by EPA through its regional offices. 53 Fed. Reg. 28118, 28120 (July 26, 1988). For the no migration exemption approvals, EPA explained: "After the effective date of a prohibition in Part 148 Subpart B, untreated wastes can only be injected if an exemption has been granted by the Administrator pursuant to a petition under Part 148 Subpart C . . . ." *Id.* Even though EPA made Part 148 available for states to seek primacy, no state has yet done so; accordingly, the Part 148 restrictions and no migration exemption petition program are everywhere administered by the EPA regional offices.

12. Does the proposed rule here meet the minimum requirements for a UIC Class I hazardous waste injection well program?

I have reviewed the proposed regulations and have compared them to EPA's regulations for Class I hazardous waste injection wells in 40 C.F.R. Parts 144 and 146. In my opinion, the proposed rule would allow New Mexico to meet the minimum requirements for a UIC Class I hazardous waste injection well program because it adopts each of the necessary requirements either by using similar language or by direct reference to the EPA UIC regulations. Thus, the proposed rule is no less stringent than EPA's regulations. A summary of the proposed regulations that was prepared by Navajo Refining Company is attached as **Exhibit H**. The summary describes each provision of the proposed rule, its intended purpose and how, if at all, it

differs from EPA's regulations. I have reviewed both the summary and the proposed rule in detail and endorse and adopt the summary.

13. In what ways, if any, is the proposed rule more stringent than the minimum requirements?

The proposed rule is more stringent than required in several ways. First, the proposed rule retains the New Mexico provisions for protecting groundwater that I reference at the outset of my testimony (see footnote 1). Specifically, New Mexico protects "ground water that has a TDS concentration of 10,000 mg/1 or less" without adding a limitation to formations with "a sufficient quantity of ground water to supply a public water system," as the federal regulations do. *Compare* Section 20.6.2.3109(c)(1) NMAC *with* 40 C.F.R. §§ 144.3 and 146.3. In addition, although New Mexico and EPA regulations both allow the designation of additional aquifers as injection zones, New Mexico does not allow such designations for formations having a TDS concentration of less than 5,000 mg/l. Section 20.6.2.5103 NMAC. The EPA regulations do not include that restriction.

There are several other respects in which the proposed rule is more stringent than the minimum requirements. The proposed rule imposes additional reporting requirements for noncompliance events that may endanger public health or the environment that are not included in the federal requirements, and the proposed rule does not authorize the issuance of area permits, which are allowed under the federal rule. The proposed rule does not incorporate by reference the federal provisions that would provide for state assumption of responsibility for plugging and abandonment of Class I hazardous waste injection wells, meaning that the operator would always retain that obligation. Thus, the proposed rule would provide less flexibility to permittees with respect to plugging and abandonment requirements. Nor does the proposed rule adopt the federal provisions that permit a financial test by a permit applicant to meet the financial assurance requirements because that approach would be inconsistent with OCD's existing UIC regulations. Finally, the proposed rule is more stringent than EPA's regulations by imposing the requirement that the Director of OCD provide written approval for the transfer of a Class I hazardous waste injection well permit before the transfer can become effective.

14. Are there any ways the proposed rule is less stringent than the minimum requirements?

No.

15. How does the proposed rule compare to other states' UIC Class I hazardous waste injection well programs generally?

The proposed rule is unique as compared with other states that have primacy and administer UIC programs for Class I hazardous waste injection wells because those permits would only be "authorized for use by petroleum refineries for the waste generated by the refinery." In a sense, that limitation also makes the proposed rule more stringent than the federal rule. Other states that conduct permitting programs for Class I hazardous waste injection wells do not include this type of limitation. In all other respects, the proposed rule is similar to what is in place in other

states for Class I hazardous waste injection wells because each state's program must be as stringent as EPA's regulations.

16. What kind of hazardous waste can be placed in the well under the proposed rule?

Under the proposed rule, only wastes generated by the petroleum refinery to which the Class I hazardous waste injection well permit has been issued could be injected into the well. That means that no off-site waste can be accepted. In addition, the regulations specifically require identification of the source and an analysis of the chemical, physical, radiological and biological characteristics of injection fluids. Because no migration exemption approvals are based on the specific characteristics of the injected waste stream, those characteristics must be identified and used in the no migration demonstration also. Petitioners for exemptions from the prohibitions on underground injection of hazardous waste must demonstrate that hazardous constituents in the injected waste stream will not migrate from the injection zone at "hazardous levels." See 40 C.F.R. § 148.20(a). The preamble to EPA's framework regulation described the general procedures for establishing "hazardous levels" for each waste constituent. See 53 Fed. Reg. 28,119, 28,122-23 (July 26, 1988). Significant changes in the injected waste stream would require revision of the OCD permit and the EPA Region 6 no migration exemption approval.

17. Will UIC Class I hazardous waste injection wells constructed and operated in accordance with the proposed rule and EPA's regulations be protective of human health and the environment?

Yes. The safety and effectiveness of Class I hazardous waste injection wells in protecting human health and the environment is extremely well established. On the twenty-fifth anniversary of the Safe Drinking Water Act, EPA noted that underground injection "reduces human exposure to organic and inorganic chemicals by removing them from the environment" and emphasized that deep well injection "eliminates more than nine billion gallons of hazardous waste and a trillion gallons of oil field waste from the environment each year."[12/] EPA has also reported that "[m]ore than 750 billion gallons of hazardous and non-hazardous fluids are disposed of safely through underground injection."[13/]

Beginning with a 1985 Report to Congress and continuing through numerous other studies, EPA and others have analyzed voluminous scientific information on deep well injection. EPA has also conducted meticulous site-by-site reviews of all currently existing Class I hazardous wells through its review of no migration demonstrations. In conjunction with its HSWA rulemaking in 1987 and 1988, EPA concluded that chemical and physical mechanisms will render wastes nonhazardous within 10,000 years. These comprehensive and site-specific studies caused the agency to conclude that "Class I underground injection wells are safer than virtually all other waste disposal practices."[14/]

12/ EPA Program to Regulate Waste Water at 2 [**Exhibit G**].

13/ Protecting Public Health [**Exhibit D**].

14/ 1991 TRI PDR Report at 305.

Because they may inject hazardous waste, "Class I wells are the most strictly regulated" UIC wells. 2001 TRI PDR Report, at 1-13. Consistent monitoring and enforcement assure that the wells will continue to be protective of human health and the environment. Permits allow for the injection and containment of substances within deep geological formations located many thousands of feet below the Earth's surface. There the injected fluids will remain isolated and contained for millions of years and become transformed into less toxic materials[15/] — an effective way to protect human health and the environment, as well as underground and surface sources of drinking water.[16/] EPA has repeatedly noted that "[w]hen wells are properly sited, constructed, and operated, underground injection is an effective and environmentally safe method to dispose of wastes."[17/] Indeed, when EPA promulgated its standards for permitting Class I hazardous waste injection wells, the agency noted that, over time, "geochemical transformations . . . would render the waste nonhazardous or immobile." 53 Fed. Reg. 28,126 (July 26, 1988).

"These wells are designed to entomb liquid wastes for at least 10,000 years."[18/] Class I wells must be constructed with multiple layers of concentric tubing (made of steel or other materials designed to be compatible with the injected fluids) and cement. This construction amounts to a pipe within a pipe within a pipe (three tubes, two layers of cement, and a fluid barrier).[19/]. Thus, "Class I wells have redundant safety systems and several protective layers to reduce the likelihood of failure. In the unlikely event that a well should fail, the geology of the injection and confining zones serves as a final check on movement of wastewaters to [protected ground waters]." Class I Study of the Risks at xiii [**Exhibit F**]. When wells comply with these regulations, EPA has consistently found that "underground injection is an effective and environmentally safe alternative to surface disposal." Program to Regulate Waste Water, supra, at 1. Furthermore, EPA has noted for Class I industrial wells that "[t]here are no documented problems with the effectiveness of the UIC regulations." See 55 Fed. Reg. 22,529, 22,658 (June 1, 1990).

The EPA and others have performed a number of studies of the risks associated with waste disposal using Class I wells. Class I Study of the Risks at xi [**Exhibit F**]. To the extent these studies identified any problems that occurred in Class I wells, those problems all occurred before

---

15/ EPA has concluded that wastes injected into Class I deep wells become less hazardous over time. 53 Fed. Reg. 28,126 (July 26, 1988).

16/ Program to Regulate Waste Water, supra; and USEPA, Safe Drinking Water Act, Underground Injection Control (UIC) Program: Protecting Public Health and Drinking Water Resources, EPA 816-H-01-003 (Aug. 2001) ("Protecting Public Health").

17/ USEPA, 2001 Toxics Release Inventory (TRI) Public Data Release Report, EPA 260-R03-001 (July 2003) ("2001 TRI PDR Report"), at 1-10 (available at http://www2.epa.gov/toxics-release-inventory-tri-program/tri-national-analysis-archive under "Additional Materials, "2001_Chapter_1_overview.pdf).

18/ USEPA, 1999 Toxics Release Inventory Public Data Release Report (2001) ("1999 TRI PDR Report"), at 1-12. "Non-hazardous deep injection wells have to meet all the technical requirements of hazardous waste wells. These wells inject industrial, low radiation and municipal wastes." Class I Deep Wells

19/ EPA, Class I Injection Wells and Your Drinking Water, EPA 813-F-94-002 (July 1994)

promulgation of the current UIC regulations. *Id.* at xii. The study concluded that any failures "were a result of historic practices that are no longer acceptable under the UIC regulations." *Id.* In addition, Rish and others[20/] quantitatively estimated the risk of loss of waste containment and movement of injectate into a USDW from a Class I hazardous injection well to be less than one in one million. This risk category agrees with EPA studies that deepwell injection is a low-risk management practice. Deep well injection technology is a major tool for protecting human health and the environment by preventing the endangerment of current and potential drinking water sources.

18. What is the history of incidents involving UIC Class I hazardous waste injection wells?

"Since the inception of the UIC program in the early eighties and since regulations governing injection have been promulgated by the Agency, no instances of contamination of USDWs by Class I hazardous waste injection wells have occurred."[21/] To examine the record prior to the UIC program, EPA and others have performed a number of studies of the risks associated with waste disposal using Class I wells. Class I Study of the Risks at xi **[Exhibit F]**. To the extent these studies identified any problems that occurred in Class I wells, those problems all occurred before promulgation of the current UIC regulations. *Id.* at xii. The study concluded that any failures "were a result of historic practices that are no longer acceptable under the UIC regulations." *Id.* Even considering the entire period prior to the implementation of the UIC program, EPA and the states identified just two cases where injected wastes contaminated protected ground water, and one case where an injection well was "suspected" of causing the contamination of a protected ground water. All three cases occurred prior to the implementation of a State or Federal UIC program. EPA has also identified eight cases where leakage from Class I hazardous waste wells entered non-protected ground water formations and two cases of surface contamination due to blowouts, all of which occurred before the 1988 amendments.[22/] There is a detailed discussion of these cases in EPA's 1991 report entitled "Analysis of the Effects of EPA Restrictions on the Deep Injection of Hazardous Waste," EPA 570/9-91-031 (October 1991).

As EPA has explained, "Both cases of known [protected ground water] contamination from Class IH injection wells (Tenneco Refinery #1, Chalmette, IA, 1980 and Velsicol Chemical #1, near Beaumont, TX, 1975) occurred prior to the existence of the UIC program and had the same cause. Both wells were constructed without tubing and packer and without surface casing set to protect all [protected ground waters]. Corrosion of the long-string casing (the only layer of protection) allowed the unobserved leakage of wastes to [protected ground waters]. The contamination was limited to within 100 feet of the wellbore, and both aquifers were cleaned up using pump-and-treat methods." *Id.* at 8. EPA also emphasized that "UIC regulations would have

---

20/ Rish, W.A., Ijaz, T. and Long T.F. (1998). "A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells" in Underground Injection Science and Technology (C.F. Tsang & J.A. Apps, eds.) (2005) **[Exhibit I]**.

21/ EPA Response to Comments on Petition Filed by Disposal Systems, Inc. at 19-20.

22/ "Hazardous Waste: Controls Over Injection Well Disposal Operations," U.S. General Accounting Office, August 1987.

never allowed this method of completion for Class IH wells, but rather require three redundant layers of protection: surface casing set and cemented through all [protected ground waters], cemented long-string casing, and tubing with a packer or an equivalent. These levels of protection and the requirement for continuous annulus pressure (i.e., mechanical integrity) monitoring would make these cases of contamination impossible today." *Id.*

Since then and with the UIC program requirements in place, EPA has concluded that "[t]he probability of Class I well failures, both nonhazardous and hazardous, has been demonstrated to be low." 2001 Risk Assessment at 41. EPA emphasized that "early Class I failures were a result of historic practices that are no longer permissible under the UIC regulations. Class I wells have redundant safety systems and several protective layers; an injection well would fail only when multiple systems fail in sequence without detection. In the unlikely event that a well would fail, the geology of the injection and confining zones serves as a final safety net against movement of wastewaters to [protected ground waters]." *Id.* Thus, EPA found that "failures of Class I wells are rare." *Id.* EPA concluded that "[t]his can be attributed to the rigorous requirements for monitoring and for ensuring that the well materials are compatible with the wastewater injected." *Id.*

In 1992, Congress asked EPA and the Government Accounting Office (GAO) to review the Class I UIC program. The results of GAO's study, delivered to Congress in 1993, found no contamination of drinking water resources resulting from the operation of any industrial Class I well since the advent of the UIC program under the SDWA. In fact, the only cases of suspected fluid movement into underground sources of drinking water since EPA's initial UIC rules became effective involved several Florida Class I municipal wells, which are not subject to the same requirements as Class I industrial wells.

GAO essentially gave the Class I UIC program a clean bill of health, citing only minor enforcement concerns which were addressed and largely resolved even before the investigation was completed. Considering the probing questions that initiated the congressional investigation, GAO's failure to find any major problems requiring correction provided a strong reaffirmation of the Class I program.

In testimony before the House on the Land Disposal Program Flexibility Act of 1996, Solid Waste Director Michael Shapiro confirmed this assessment. Additional support was provided by then EPA Region 6 Water Division Director Myron Knudson, who called deep well injection "extremely safe." He testified: "It has been used for about 30 years now, and since the Safe Drinking Water Act was put in place and since the regulations, there have been no problems with the injection wells." The House Report on the legislation highlighted EPA's assessment, emphasizing that the "potential health risks from Class I injection wells are extremely low."[23/]

19. Why is it preferable to dispose of hazardous waste through a UIC well as opposed to other approaches to treatment and disposal of hazardous waste?

EPA Region 6 has emphasized that Class I hazardous waste injection is the preferable methodology, stating: "Class I injection is by far the safest form of hazardous waste disposal. All

---

[23/] Land Disposal Program Flexibility Act, H.R Rep. 104-454 at 5 (996).

of the other forms of disposal place the waste either in the air, into landfills which are located above the water table, or into rivers and streams that serve as recreation facilities, fish and wildlife habitats, sources of food, serve as drinking water sources, or that recharge drinking water aquifers. Only [Class I] injection wells serve to permanently remove the waste from the biosphere." [24/]

EPA summarizes the safety and effectiveness of deep well injection by stating, "Injecting wastes in Class I wells is safer than burying them in landfills, storing them in tanks, or burning the waste in incinerators." EPA, Class I Injection Wells and Your Drinking Water, EPA 813-F-94-002 (July 1994) ("Your Drinking Water").This was one of several favorable EPA statements that legislators quoted verbatim in supporting the 1996 land disposal restriction program relief legislation.

One basis for this conclusion is a study of many different waste management practices conducted for the Office of Solid Waste and Emergency Response (OSWER).[25/] The study conducted a comparative risk project using panels of experts to compare the risks associated with various activities involving potentially toxic chemicals. The panels ranked risks from different waste management practices based on six factors: acute exposure health risks; chronic health risks from acute events; other health risks; groundwater sources affected; welfare effects (e.g., wildlife, materials, quality of life); and ecological risks. Based on input from the individual panels, the plenary panel developed consensus rankings to identify overall risk levels of the various waste management practices. The experts gave hazardous waste injection the lowest risk ranking. OSWER Comparative Risk Study.

The study found that Class I hazardous waste injection wells are safer than virtually all other waste disposal practices. According to the study, high-risk disposal practices include municipal landfills, hazardous waste storage tanks, and land disposal of hazardous waste. Medium-risk activities include transportation of hazardous materials, municipal waste combustion, and Superfund sites. Only hazardous waste injection falls into the low-risk category.

Thus, even though there may be other methods available for waste management, such as landfills or storage tanks, these other methods would be inherently less safe and less protective than deep well injection, the preferred method for the management of hazardous and nonhazardous waste fluids. Your Drinking Water. As EPA has noted, "While treatment technologies exist, it would be cost prohibitive to treat and release to surface waters the billions and trillions of gallons of wastes that industries produce each year." Program to Regulate Waste Water at 1. Deep well injection technology and the federal and state level UIC programs, established by the SDWA (42 U.S.C. § 300h (1974)) to regulate this technology, are effective tools for protecting human health and the environment by preventing the endangerment of current and potential drinking water sources.

24/ Letter from William B. Hathaway, Director of EPA Region 6's Water Quality Protection Division, to William H. Sanders, III, Director of EPA's Office of Pollution Prevention and Toxics (April 22, 1997).

25/ U.S. EPA, Office of Solid Waste and Emergency Response. OSWER Comparative Risk Project: Executive Summary and Overview. EPA/540/1-89/003. November 1989 (OSWER Comparative Risk Study).

20. What other type of approval, such as U.S. EPA approval, is required before the proposed rule can become effective? What is the process for that approval?

After the proposed rule has been adopted pursuant to the procedures required by the State of New Mexico, the revised regulations would need to be submitted to EPA Region 6 for approval as a program revision under 40 C.F.R. § 145.32 ("Procedures for revision of State programs"). Under section 145.32(a), each state is directed to "keep EPA fully informed of any proposed modifications to its basic statutory or regulatory authority, its forms, procedures, or priorities." Section 145.32(b) spells out the procedures to be followed, which include submitting a modified program description and other items. If EPA deems a proposed program revision is substantial, it issues a public notice, provide an opportunity for public comments for a period of at least 30 days, and provide for the opportunity to request a public hearing.

Although the program revisions may become effective as a matter of state law sooner, they will not be effective as substitutes for the EPA regulations and hazardous waste injection restrictions until approval by the EPA Administrator. Notice of approval will be published in the Federal Register.

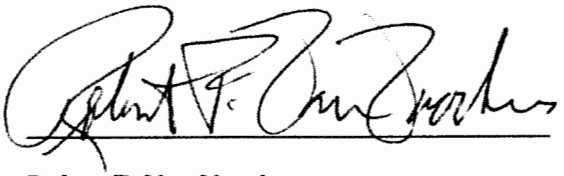
21. Is a new No Migration Petition required if a facility wants change or expand the types of hazardous waste that are injected?

After a no migration petition is approved by EPA, an operator may need or wish to make changes relating to the petition which were not anticipated at the time the initial petition was filed. These changes may be administrative in nature (corporate name change, equipment change in the facility) which do not affect the wastes addressed in the petition, or they may be changes directly relating to the injection operation. This latter category of changes can range from the identification or new listing of a waste that was the subject of, or described in, an initial exemption demonstration, to substantive changes such as the injection of new wastes which differ hydraulically and chemically from the wastes which were the subject of the initial petition. EPA has promulgated regulations that outline, in broad terms, the procedures for altering exemptions where the changes an operator seeks to make are more than clerical in nature, and may affect the demonstration. See 40 C.F.R. § 148.20 (e) and (f).

22. How are Resource Conservation and Recovery Act requirements applied to facilities that operate UIC Class I hazardous waste injection wells?

The requirements of the Resource Conservation and Recovery Act are applied to Class I hazardous waste injection wells through the UIC regulations, including specifically the provisions in 40 C.F.R. § 144.14, 40 C.F.R. art 144, Subpart F, 40 C.F.R. Part 146, Subpart G, and 40 C.F.R. Part 148. The UIC permit issued to a Class I hazardous waste injection well operator constitutes a RCRA permit by rule.

Dated: June 15, 2015



Robert F. Van Voorhees

Curriculum Vitae

Robert F. Van Voorhees

Current Positions:

Executive Director, Carbon Sequestration Council

Executive Director, Underground Injection Technology Council

General Manager, EcoReg Matters Ltd.

Principal, Robert F Van Voorhees PLLC

Previous Position:

Bryan Cave LLP, Partner (1985-2010); Of Counsel

Education:

B. A. (Political Science), George Washington University

J. D. University of Virginia School of Law

Publications:

R. Van Voorhees, "Removed From The Environment," Environmental Law Institute, Environmental Forum 23, March/April 2001.

J. E. Clark, D.K. Bonura, R.F. Van Voorhees, "History, Regulation, and Risk Assessment: "An Overview of Injection Well History in the United States of America," in *Underground Injection Science and Technology* (C-F. Tsang & J. A. Apps, ed.) 2005.

Presentations:

"Aquifer Exemptions under the Underground Injection Program," Uranium Recovery Workshop of the National Mining Association and the Nuclear Regulatory Commission (Denver, CO) (June 8-9, 2015)

"EPS vs. FPL Farming Case – Pore Space Competition and Underground Trespass," Texas Commission on Environmental Quality Environmental Trade Fair (Austin, TX) (May 5-6, 2015)

"Issues Over Final Class VI Permits for Geologic Storage," 14th Carbon Capture, Utilization & Storage Conference (Pittsburgh, PA) (April 28 - May 1, 2015)

"Cooperation Advances the Protection of Drinking Water Sources," Ground Water Protection Council Underground Injection Control Meeting (Austin, TX) (February 8-10, 2015)

"ISO/TC265/WG5 Cross-cutting issues," Twelfth International Conference on Greenhouse Gas Technologies (GHGT-12) (Austin, TX) (October 6-9, 2014)

"Reducing Uncertainty – the application and effectiveness of Monitoring and Modeling: A View from a Legal Perspective," International Energy Agency Greenhouse Gas Programme, Monitoring Network and Modeling Network - Combined Meeting (Morgantown, WV) (August 7, 2014)

"Redirecting Regulatory Disincentives to Promote CCUS Deployment," Thirteenth Annual Conference on Carbon Capture, Utilization & Storage (Pittsburgh, PA) (April 28-May 1, 2014)

"Regulatory Implications of EPA's ASR Letter," Ground Water Protection Council, 2014 Underground Injection Control Conference: Aquifer Management & Underground Injection (New Orleans, LA) (January 21-23, 2014)

"Convergence of Policy for Storage Monitoring with CO2 Flood Surveillance," CO2 Conference Short Course: Surveillance and Monitoring of CO2 Injection Projects (Midland, Texas) (December 11, 2013)

"Regulatory Framework to Promote Carbon Capture Utilization and Storage," Ground Water Protection Council, Annual Forum 2013 (St. Louis, MO) (September 22-25, 2013)

"Progress and Lessons from Implementing the US EPA Class VI Rule," 5th IEA International CCS Regulatory Network Meeting, International Energy Agency (Paris, France) (18-19 June 2013)

"Advancing CCUS Projects Through the Evolving Regulatory Framework," Twelfth Annual Conference on Carbon Capture, Utilization & Sequestration, (May 13 – 16, 2013)

R. Van Voorhees & J. Clark, "UIC Class I Program Priorities," Texas Commission on Environmental Quality Environmental Trade Fair (Austin, TX) (May 1, 2013)

"Are EPA's Class VI Well Regulations Workable?" MIT Carbon Sequestration Forum XIV, Moving Ahead In Challenging Times Royal Sonesta Hotel (Cambridge, MA) (24 – 25 April 2013)

"Building Out the Framework for CCS Deployment - Practical Approaches for Implementing Early Stage CCS Projects," Ground Water Protection Council Underground Injection Control Conference (January 23, 2013)

"Practical Implementation of CCS Projects Under New Regulatory Regimes," Carbon Capture & Storage: From Research to Implementation, (Geological Society and AAPG (London, U. K.) (14-15 January 2013)

"Building Out the Framework for CCS Deployment Practical Approaches for Implementing Early Stage CCS Projects," Ground Water Protection Council 2013 UIC Conference: Aquifer Management & Underground Injection (Sarasota, FL) (January 23, 2013)

W. Bryson & R. Van Voorhees, "Underground Injection Control (UIC) Program Facts & History," Ground Water Protection Council 2013 UIC Conference: Aquifer Management & Underground Injection (Sarasota, FL) (January 23, 2013)

"Concerns About EPA's CCS Regulations and Implementation," Carbon Capture & Storage Work Group, Edison Electric Institute Webinar Meeting (November 15, 2012)

"Compliant CCS Deployment: Practical technological and regulatory approaches for implementing early stage CCS projects," Carbon Capture And Storage: Ready, Steady, Go! Conference, Institute of Mechanical Engineers (London, U. K.) (October 18, 2012).

J. Clark & R. Van Voorhees, "UIC Class I Program Priorities," Texas Commission on Environmental Quality Environmental Trade Fair (Austin, TX) (May 1, 2012)

R. Van Voorhees& S. Wade, "Ramping Up CCUS Deployment: Addressing Potential Regulatory Barriers for Small Scale, Demonstration, and Early Stage CCUS Projects," at Eleventh Annual Conference on Carbon Capture, Utilization & Sequestration (April 30 – May 3, 2012).

"Advancing GS Projects Under a New Regulatory Regime," Ground Water Protection Council, Underground Injection Control Meeting (January 23-25, 2012)

"UIC Class I Program Priorities," Ground Water Protection Council, Underground Injection Control Meeting (January 23-25, 2012)

"Stakeholder Perspectives on UIC Regulatory Developments," Texas Commission on Environmental Quality Environmental Trade Fair (Austin, TX) (May 3, 2011)

R. Van Voorhees & S. Anderson, "Proposed CO2 Rules and the National UIC Program: A Multi-Stakeholder Perspective," Ground Water Protection Council, Annual Forum (Pittsburgh, PA) (September 27-29, 2010)

R. Van Voorhees, J. Clark & D. Bonura,"Overview of Injection Well History in the United States of America," Ground Water Protection Council Carbon Capture and Storage Workshop (September 2008)

"Update Regarding 11th Circuit Ruling Upholding EPA Class I Municipal Well Rule," Ground Water Protection Council Annual Forum (Cincinnati, OH) (September 21-24, 2008)

"Current National Developments in the Underground Injection Control Program," Texas Commission on Environmental Quality Environmental Trade Fair (Austin, TX) (April 30-May 1, 2008)

Paque, M. J. (Ground Water Protection Council), R. F. Van Voorhees [Presenter], B. D. Day, B. W. Neuschafer, "Alternative Pathways, Potential Obstacles, and Practical Solutions to Regulating CO2 Geological Storage" at International Symposium on Site Characterization for CO2 Geological Storage (CO2SC), Lawrence Berkeley National Laboratory (March 20-22, 2006).

AN OVERVIEW OF INJECTION WELL HISTORY IN THE UNITED STATES OF AMERICA

J. E. Clark and D. K. Bonura
E.I. du Pont de Nemours & Co., Inc., P. O. Box 3269
Beaumont, Texas 77704 USA

R. F. Van Voorhees
Bryan Cave LLP, 700 Thirteenth St. N.W.
Washington, D.C. 20005-3960 USA

Injection of liquids into underground formations through wells was started by the petroleum industry. In the 1930s it was common practice to dispose of produced brine through injection wells. The first report of shallow industrial waste injection was in the mid-1930s. Since the early 1950s, injection wells have been used for fluids associated with industrial facilities. Injection wells were regulated by the various states with no national oversight program.

The Safe Drinking Water Act (SDWA) was passed in 1974 to address underground injection issues from a national approach and includes all types of injection wells. Class I wells are used to inject hazardous and non-hazardous fluids below any underground sources of drinking water (USDW). Class II wells inject brine fluids associated with oil and gas production. Class III wells pertain to *in situ* mining wells. Class IV wells (banned except for remediation) handled disposal of hazardous liquids into or above USDWs. Class V wells relate to geothermal and other wells that do not fall into the previous categories. The United States Environmental Protection Agency (US EPA) has implemented Underground Injection Control (UIC) rules and regulations since the early 1980s as an outcome of the SDWA, in order to protect citizens from exposure and reduce risk to human health and the environment.

In 1984 Congress passed an expansion of the Resource Conservation Recovery Act (RCRA). This Act, in essence, banned hazardous disposal unless the demonstration was made that the injected fluid would be protective of human health and the environment. In 1988 EPA promulgated rules and regulations dealing with the land disposal ban for Class I injection wells (40CFR §124, 144, 146, and 148). These regulations established a mechanism for making the demonstration of 10,000-year flow and containment of injected fluid or chemical fate transformation within the injection zone.

The primary objective of deepwell disposal is to permanently isolate injected fluids from the biosphere. In 1989 EPA did a qualitative and comparative risk study and found that Class I injection is a safe and effective technology due to its very low risk to human health and the environment. In this study, EPA also found that underground injection of hazardous fluids was rated the lowest risk in comparison with other operations such as municipal waste combustion. Based on EPA regulations, Class I injection wells are constructed and monitored to assure protection against any toxic releases to the environment.

A recent quantitative risk analysis agrees with EPA studies that deepwell injection is a low-risk management practice. The risk associated with a Class I hazardous injection well for the loss of waste containment to the lowermost USDW is less than one in one million. The loss of injectate isolation probability is low due to redundancies in well construction barriers and geological requirements that provide multiple safety factors.

PRIOR TO EPA UIC REGULATIONS

Underground injection is the disposal of liquid waste material into isolated geologic strata, placing the wastes in portions of the earth's crust that are free from the usual effects of the hydrologic cycle regulated under 40 CFR Part 267, Subpart G and Parts 146 and 148 (US EPA, 1989, p. 5). The primary objective of deepwell injection is to permanently isolate disposed fluids from the biosphere. Injection of fluids into underground formations in the United States of America (US) through wells began in the 1930s by the petroleum industry for disposal of produced brines associated with oil and gas production (Brasier and Kobelski, 1996, p. 1). The first report of shallow industrial waste injection was in the mid-1930s. However, that practice lasted only a few days because injected fluid found its way back to the surface where other wells penetrated the 800-foot deep sand (Harlow, 1939). DuPont drilled the first deep industrial waste injection well in Texas in 1949 and began operations in the early 1950s. In 1950, there were four injection wells and by the early 1960s there were 30 injection wells (Smith, 1996, p. 10). Texas was the first state to adopt regulations (1961) regarding industrial injection wells (Warner, 1973, p. 692). Early regulation of underground injection was traditionally a state responsibility under specific disposal well statues, water well statutes, oil and gas regulations, or surface waste pollution control statutes (Walker and Cox, 1973, p. 5-6). State regulations were not uniform in water quality levels' protection for potential usable groundwaters (Figure 1). Federal control over underground disposal of radioactive wastes was under the direction of Atomic Energy Commission under the Atomic Energy Act of 1954 and pre-empted state control of underground injection (Walker and Cox, 1973, p. 9).

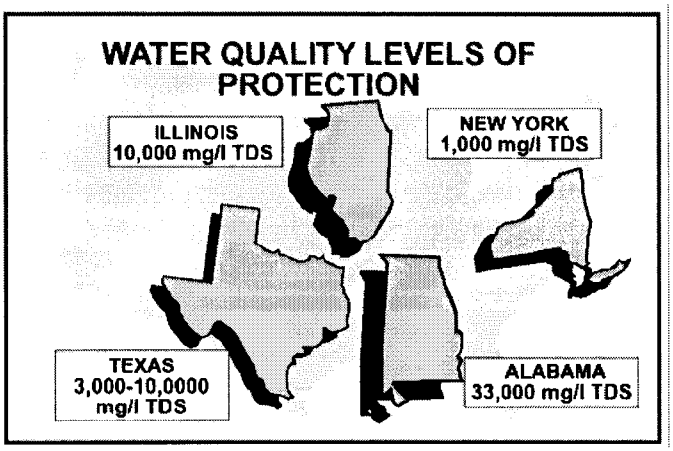


Figure 1. Historical levels of water quality protection (after Walker and Cox, 1973, p. 7).

By the early 1970s, the number of injection wells was approximately 250 (Warner, 1973, p. 688), nearly a 10-fold increase over the 1960 well total (Figure 2), and EPA was concerned about the increasing number of injection facilities that might be avoiding surface waste treatment. EPA published an Administrative Decision Statement No. 5 guidance in 1970 (the same year as creation of the Agency) regarding EPA policy for placement of fluid in the subsurface to prevent contamination of groundwaters (Hall and Ballentine, 1973, p. 790). Passage of the Federal Water Pollution Control Act Amendments (Public Law 92-500) in 1972 gave EPA control of surface waters. Some regulation and permitting of underground injection occurred under this statute, but the authority for control of injection was uncertain. This law did not have clear legal standards for regulating injection. It did, however, require states to regulate injection wells as a prerequisite for federal funding of area-wide waste-treatment management of surface waters. Oil and gas were exempt from federal control because they were not classified as pollutants under the 1972 amendments.

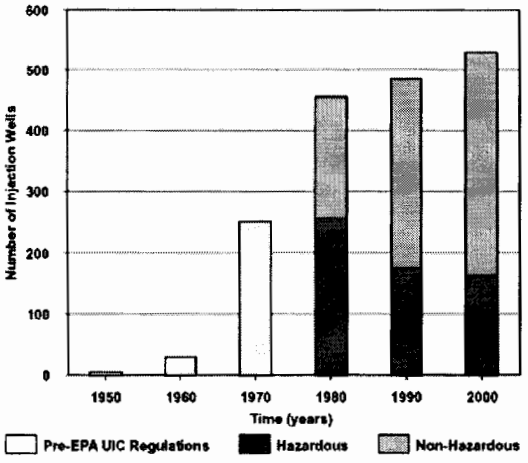


Figure 2. Approximate number of Class I injection wells by decade.

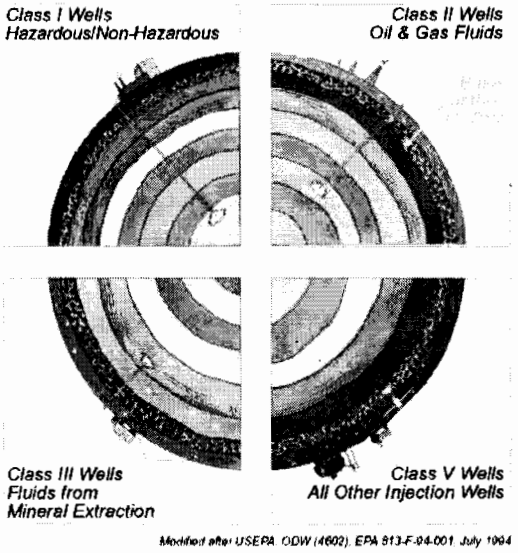


Figure 3. EPA injection well classification system (modified from US EPA, 1994a).

EPA UIC REGULATIONS

Enactment of the SDWA in 1974 ratified EPA's underground injection policy position and required the Agency to promulgate minimum injection well requirements of state programs to prevent endangerment of USDWs (Brasier and Kobelski, 1996, p. 2). EPA and state agencies conducted detailed reviews of injection practices during the late 1970s which were incorporated into the final UIC regulations promulgated by EPA in 1980 (Brasier and Kobelski, 1996, p. 3). With the 1980 regulations, a national standard was established protecting current and potential drinking water sources with <10,000 mg/l total dissolved solids (TDS) that could serve as a public water system. Minimum technical requirements for siting, construction, operation, testing, monitoring, and plugging and abandonment were established. Additionally, five classes of injection wells were established (Figure 3). Class I wells are used to inject hazardous and non-hazardous fluids below any underground sources of drinking water (USDW). Class I wells may be industrial or municipal. Class II wells inject brine fluids associated with oil and gas production. Class III wells pertain to *in situ* mining. Class IV wells (banned except for remediation) handled disposal of hazardous or toxic liquids into or above USDWs. Class V wells relate to geothermal and other wells that do not fall into the previous categories. This paper primarily addresses Class I wells excluding municipal wells.

The 1980 UIC regulations strengthened well standards by requiring multiple layers of protection between injected fluid and USDWs. One of the few problem wells prior to UIC regulations was due to well construction materials being incompatible with unpermitted low pH injectate. Pre-1980 EPA regulations did not require a packer, injection tubing, an annulus system, an alarm system, or monitoring of well parameters such as pH. Figure 4 is an event-tree for this 1975 incident which shows that the problem would not have occurred after implementation of the 1980 UIC regulations. In this case, injected fluids entered an unpermitted saline aquifer. The problem was remediated by using the injection well and additional wells to pump fluids out (US EPA, 1985, p. 11).

A majority of states approved and codified the 1980 regulations from 1982-1984. As of 2002, 33 states and 3 territories have UIC primacy, EPA retained primacy for 10 states, 2 territories, Washington D.C., and all Indian tribes; EPA and states share primacy for 7 states (US EPA, 2002).

CLASS I HAZARDOUS WELL REGULATIONS

In 1984, the Hazardous and Solid Waste Amendments (HSWA) prohibited land disposal of hazardous waste, including underground injection (the "land-ban" restriction), unless the EPA could determine that the disposal would not adversely affect human health and the environment (Smith, 1996, p. 9).

In a 1985 Report to Congress on injection of hazardous waste, the EPA Office of Drinking Water stated that underground injection "was considered a method to isolate wastes (that could not be easily treated) from the accessible environment by placing them into deep formations where they would remain for geologic time" (US EPA, 1985, p. 3). The report included an inventory of hazardous wells and also looked at hydrogeology, engineering, mechanical integrity tests, monitoring waste characteristics, and noncompliance incidents.

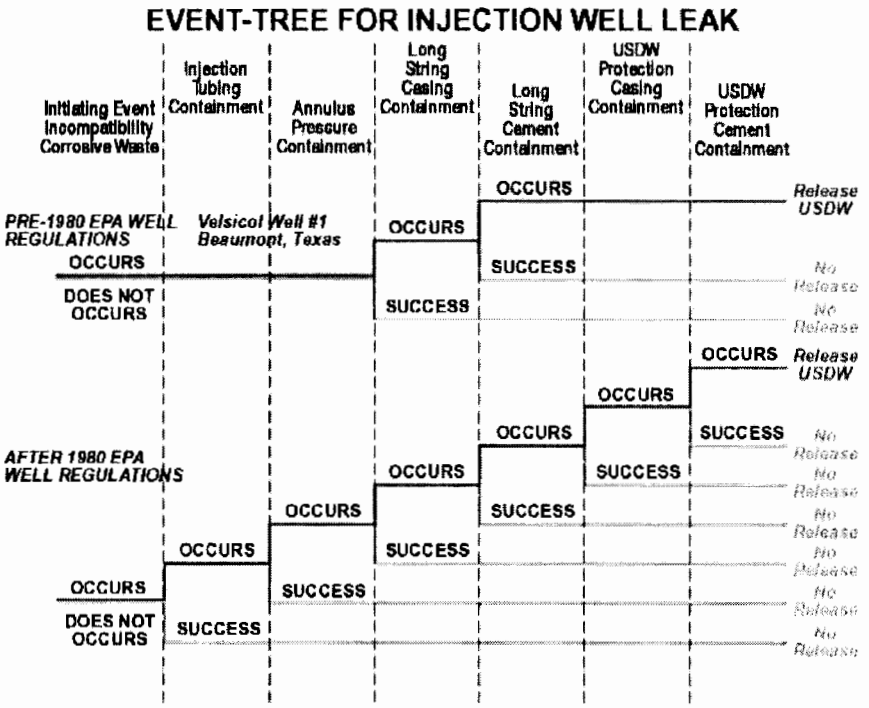


Figure 4. Event-tree for a 1975 injection well leak pre- and post-1980 EPA well regulations.

From 1986 to 1988, State and Federal agencies, environmental groups, and industry particpated in negotiated rulemaking ("Reg-Neg") to implement the land-ban provision of HSWA (US EPA, 1991 p. 10). Although the Reg-Neg group did not achieve complete consensus, the US EPA (1988) strengthened the regulatory requirements for hazardous injection wells by establishing the no-migration demonstration for hazardous constituents. "The 1988 UIC regulations ... offer additional protection by requiring operators of Class I hazardous wells to complete no-migration petitions to demonstrate that the hazardous constituents of their wastewater will not migrate from the injection zone for 10,000 years, or that characteristic hazardous wastewater will no longer be hazardous by the time it leaves the injection zone." (US EPA, 2001, p. xiii). EPA also stated "After 10,000 years of containment constituents would either be immobilized or otherwise be at non-hazardous levels throughout the injection zone." (US EPA, 1988, Federal Register, Tuesday, July 26, 1988, p. 28122). An environmental group which had withdrawn from the Reg-Neg process in the final stages challenged the 1988 EPA UIC Hazardous Waste Disposal Injection Restrictions and Requirements. The US Court of Appeals for the D.C. Circuit ruled in EPA's favor and upheld the 1988 regulations, leaving the No-Migration Exemption program for Class I hazardous waste injection wells in place *(Natural Resources Defense Council v. US EPA, 907, F.2d 1146 (D.C. Cir. 1990).*

RISK ANALYSIS

Figure 5 indicates that risk assessment is based on actual exposure as related to concentration and time. Human health or environmental risk from underground injection is extremely low because the potential exposure is removed—that is, injected waste is confined for at least 10,000 years or rendered non-hazardous (US EPA, 1997, p. E-6).

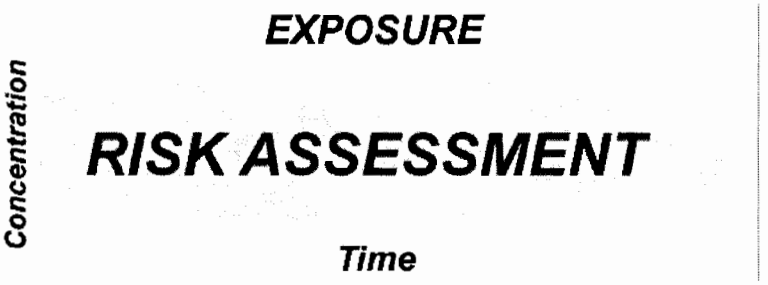


Figure 5. Risk is based on exposure as related to concentration and time.

Figure 6 shows the results of a 1989 EPA qualitative and comparative risk study by the Office of Solid Waste and Emergency Response (OSWER). This study determined that injection of hazardous waste in Class I wells is safe and effective because of its very low risk to human health and the environment. The EPA study of Class I wells found that injection of waste is safer than burying them in landfills, storing them in tanks, or burning the waste in incinerators (US EPA, 1994b).

EPA conducted a study on the "Analysis of the Effects of EPA Restrictions on the Deep Injection of Hazardous Waste" (1991). This report concluded that hazardous deepwell injection under EPA's current regulations is a safe technology and the UIC regulations would have prevented the few reported incidents regarding underground injection (1991, p. 8 and 9). This report describes in detail how EPA regulations prevent Class I hazardous wells from endangering USDWs.

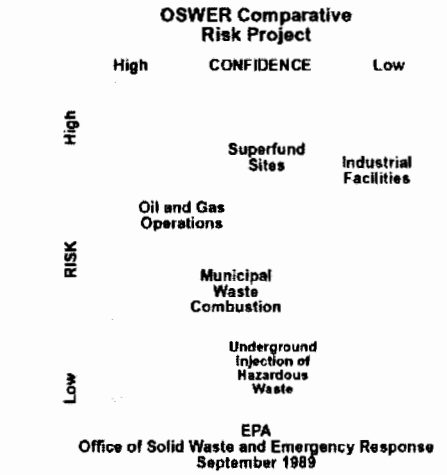


Figure 6. Office of Solid Waste and Emergency Response (OSWER) risk assessment (US EPA, 1989).

The Land Disposal Program Flexibility Act of 1996 (Public Law 104-119) required EPA to conduct a study regarding the risks associated with Class I non-hazardous injection. The 2001 Report to Congress "Class I Underground Injection Control Program: Study of the Risks Associated with Class I Injection Wells" was their response. The study found that there are multiple safeguards against failure of Class I non-hazardous and hazardous industrial waste wells or the migration of injected fluids (US EPA, 2001, p. xii). Siting criteria minimize the potential for waste migration, and inspections, well testing, and passive monitoring systems can detect malfunctions before fluids escape the injection system (US EPA, 2001, p. xiii). After several decades of Class I well operations, only four significant cases of injectate migration have been documented, and none of these affected a drinking water source (US EPA, 2001, p. xiii). In summary, the probability of losing waste confinement is low. Historical problems were the result of practices that are not allowed under current UIC regulations. Redundant monitoring systems and multiple protective construction layers reduce failure possibilities. Furthermore, in the unlikely event a well should

fail, the geologic and siting criteria are additional safety factors in preventing the movement of injectate toward USDWs (US EPA, 2001, p. xiii).

Rish and others (1998) quantitatively estimated the risk of loss of waste containment and movement of injectate into a USDW from a Class I hazardous injection well to be less than one in one million. This risk category agrees with EPA studies that deepwell injection is a low-risk management practice. The two failure scenarios dominating risk that waste isolation is lost are: 1) the possibility that a transmissive microannulus develops in the cemented borehole outside of the long string casing, and it extends from the injection zone up past the confining zones, and 2) the possibility of inadvertent future extraction of injected waste.

The loss of injectate isolation is low due to EPA regulations requiring proper geological siting, buffer aquifer(s), multiple layers of well construction barriers, continuous monitoring systems, and annual mechanical testing. Rish and others (1998) determined that the annulus pressure system is a critical barrier in preventing contamination to USDWs, but displays high reliability due to the presence of automatic alarms, shut-offs, and full-time operators. Figure 7 is a fault tree that begins with the assumption that the annulus pressure is less than the injection pressure (probability 1.0E+00; the actual probability of this occurrence is 5.8E-04). Then, the chances of an automatic alarm failing to function (probability 3.0E-04) in combination with a full-time operator failing to respond to the alarm (probability 5.0E-05) results in a loss of injectate containment probability of 1.5E-08. Therefore, an automatic alarm system and a full-time operator are the keys to preventing loss of injectate containment. An automatic alarm system and a full-time operator are required by UIC regulations for hazardous wells, and many states have adopted this requirement for non-hazardous wells by regulatory requirement (e.g., Texas) or by permit requirement (e.g., Louisiana).

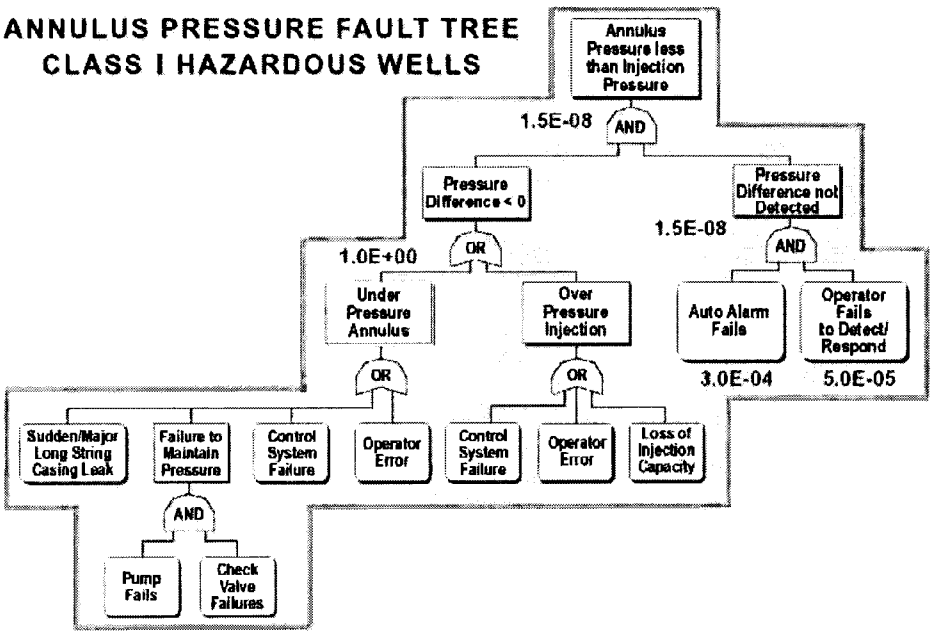


Figure 7. Annulus pressure fault tree for Class I hazardous wells. The risk of loss of containment (injected fluid moves into a USDW) is less than one in a million (Rish et al., 1998).

SUMMARY

Prior to UIC regulations in 1980, only four significant cases of injectate migration occurred due to Class I hazardous well operations, and none of these affected a drinking water source. Since 1980, with the implementation of the UIC program of the SDWA, no cases of USDW contamination have occurred due to stringent siting, construction, operation, and testing requirements for Class I hazardous and non-hazardous wells. Those few instances of contamination prior to 1980 would not have occurred had the 1980 regulations been in place. Injection of hazardous and non-hazardous waste into Class I injection wells since 1980 has been, and continues to be, a low-risk method management of liquid wastes that has proven to be safe and effective. The following table summarizes important events in the history of underground injection, primarily Class I injection. Additional information about UIC program in the United States may be found at: http://www.epa.gov/safewater/uic.html.

UIC Timeline

1930 — Petroleum industry injection disposal of saltwater from oil and gas production

1935 — Dow injects spent brine into shallow industrial well

1949 — DuPont drilled first industrial deepwell

1961 — Texas first state to enact injection well laws

1970 — EPA Subsurface Emplacement Policy

1972 — Federal Water Pollution Control Act Amendments

1974 — Safe Drinking Water Act with Federal UIC Program

1980 — First US EPA UIC regulations promulgated

1982-84 — State primacy programs; US EPA direct implementation

1984 — Hazardous and Solid Waste Amendments with Land Disposal Ban

1985 — Report to Congress on Injection of Hazardous Waste

1988 — US EPA No-Migration Exemption Regulations

1989 — US EPA OSWER Comparative Risk Project

1991 — Report to Congress on Restrictions of Deep Injection of Hazardous Waste

1996 — Land Disposal Program Flexibility Act

2001 — Report to Congress on Land Disposal Program-Study of the Risks Associated Underground Injection Wells

REFERENCES

Brasier, F.M., and Kobelski, B.J., (1996). "Injection of Industrial Wastes in the United States," *in* Deep Injection Disposal of Hazardous and Industrial Waste (ed. by J.A. Apps. and Chin-Fu Tsang). San Diego: Academic Press, p. 1-8.

Hall, C.W., and Ballentine, R.K., 1973, "U.S. Environmental Protection Agency Policy on Subsurface Emplacement of Fluids by Well Injection" *in* "Underground Waste Management and Artificial Recharge," preprints of papers presented at the Second International Symposium on Underground Waste Management and Artificial Recharge, New Orleans, Louisiana, September 26-30, 1973, American Association of Petroleum Geologists, US Geological Survey, and International Association of Hydrological Sciences, v. 2, p. 783-789.

Harlow, I.F., (1939) Waste problems of a chemical company, *Industrial and Engineering Chemistry*, American Chemical Society, Washington D.C., 31, p. 1346-1349.

Rish, W.A., Ijaz, T. and Long T.F. (1998). "A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells" (draft).

Smith, R.E. (1996). "EPA Mission Research in Support of Hazardous Waste Injection 1986-1994," *in* Deep Injection Disposal of Hazardous and Industrial Waste (ed. by J.A. Apps and Chin-Fu Tsang). San Diego, California: Academic Press, p. 9-24.

US EPA. (1980). May 19, 1980. Federal Register v. 45, No. 98, p. 33290-33418.

US EPA. (1985). Office of Drinking Water "Report to Congress on Injection of Hazardous Waste" (EPA 570/9-85-003) May 1985.

US EPA (1988). 40CFR §124,144, 146, and 148. July 26, 1988. Federal Register v. 53, no. 143, p. 28117-28157.

US EPA. (1989). Office of Solid Waste and Emergency Response. "OSWER Comparative Risk Project: Executive Summary and Overview (OSWER)," EPA 540/1-89/003.

US EPA. (1991). Office of Ground Water and Drinking Water "Analysis of the Effects of EPA Restrictions on the Deep Injection of Hazardous Waste" (EPA 570/9-91-031) 23p.

US EPA. (1994a). Office of Water, "Underground Injection Wells and Your Drinking Water". (EPA 813-F-94-001).

US EPA. (1994b). Office of Water, "Class I Injection Wells and Your Drinking Water". (EPA 813-F-94-002).

US EPA. (1997). Office of Pollution Prevention and Toxics "Toxic Release Inventory Relative Risk-Based Environmental Indicators Methodology."

US EPA. (2001). Office of Water: "Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells," (EPA 816-R-01-007) 76p. Includes the Land Disposal Program Flexibility Act of 1996 (Public Law 104-119) as Appendix A.

US EPA. (2002). Protecting Drinking Water Through Underground Injection Control by Office of Ground Water and Drinking Water (EPA 816-K-02-001) January 2002, 36p.

Van Voorhees, R.F., (2001). "Removed From the Environment," The Environmental Forum, v. 18, no. 2, March/April 2001, p. 22-31.

Warner, .D.L., and Orcutt, D.H., (1973). "Industrial Wastewater-Injection Wells in United States Status of Use and Regulation, 1973," *in* "Underground Waste Management and Artificial Recharge," preprints of papers presented at the Second International Symposium on Underground Waste Management and Artificial Recharge, New Orleans, Louisiana, September 26-30, 1973, American Association of Petroleum Geologists, US Geological Survey, and International Association of Hydrological Sciences, volume 2, p. 687-697.

Walker, W.R. and Cox, W.E. (1973). "Legal and Institutional Considerations of Deep-Well Waste Disposal," *in* "Underground Waste Management and Artificial Recharge," preprints of papers presented at the Second International Symposium on Underground Waste Management and Artificial Recharge, New Orleans, Louisiana, September 26-30, 1973, American Association of Petroleum Geologists, US Geological Survey, and International Association of Hydrological Sciences, volume 1, p. 3-19.

Removed From The Environment

Deep well injection of industrial waste safely and effectively isolates toxic chemicals from the biosphere. Indeed, in the right geological setting, it is the environmentally preferred method — provided that business is simultaneously minimizing its waste generation. Unfortunately, misperceptions about the program limit its wider use

ROBERT F. VAN VOORHEES

On December 16, 1999, then EPA Administrator Carol Browner hosted a celebration marking the 25th anniversary of the Safe Drinking Water Act. Among the many laudatory pronouncements, the agency hailed the crucial role that the statute's program for deep well injection of hazardous waste plays in protecting drinking water, human health, and the ecosystem. EPA declared that underground injection "reduces human exposure to organic and inorganic chemicals and heavy metals by removing them from the environment." Further, deep well injection "eliminates more than nine billion gallons of hazardous waste and a trillion gallons of oilfield waste from the environment each year." Indeed, EPA and other scientific experts have concluded that these liquid wastes are "removed from the environment" — isolated from the biosphere thousands of feet below the earth's surface, where they will remain confined for millions of years. The wastes are even thousands of feet below aquifers that might conceivably supply drinking water in the future.

Yet, while the agency celebrates the success of deep well injection and the Underground Injection Control program that regulates it under the act, others ignore this record and attempt to demonize the practice with unfounded allegations that deep well injection will inherently endanger rather than protect human health. EPA and administrators of state underground injection programs have come under attack, as have the companies that use the technology. But the science, based on more than a decade of safe operation under improved UIC program regulations, does not support these charges. Rather, the facts show that, where proper geology and hydrogeology are available, deep well injection is the preferred method for managing hazardous wastes. Companies that are using it are doing right by society.

Deep well injection should be judged on the merits of the environmental protection benefits it provides and the concomitant environmental management approaches that its users adopt. Deep well injection does not provide a perfect solution that allows industry to slacken the quest for long-term environmental sustainability. Business has the responsibility to move continually toward pollution prevention, seeking source reduction, recycling, and other improvements that will lead to a diminishing role for *all* forms of disposal.

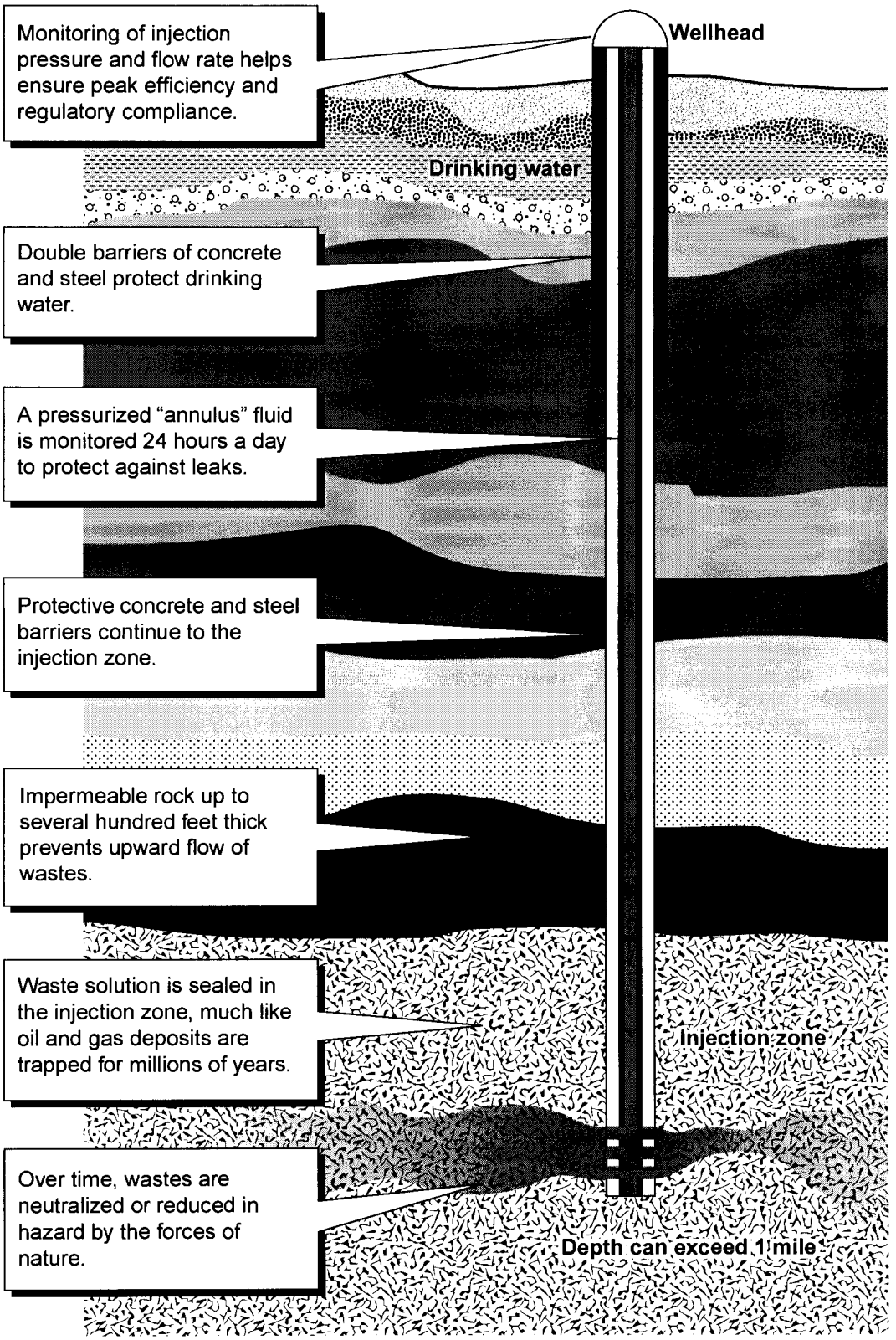
While that quest continues, however, we need to recognize the crucial role that deep well injection can play in providing a safe and effective interim method for disposing of residual wastes, especially those that would pose the greatest risks to society if managed by any other method. It could be used, for example, to dispose of persistent bioaccumulative toxic wastes that might otherwise be discharged to surface waters. In other words, if underground injection is restricted or eliminated, the result will be more danger to the environment, not less.

While deep well injection is not inherently dangerous, it will only be safe if properly done. But one of the strengths of the current Underground Injection Control program is that the regulations were first developed to address any problems experienced by past injection well operations, and then revised specifically to address remaining concerns.

When the UIC program was started after enactment of the Safe Drinking Water Act in 1974, EPA and state officials conducted detailed reviews of the problems associated with injection well operations that predated the federal statute. The agency divided the UIC program into different classes of wells,

Bob Van Voorhees is a Partner in the Environmental Group and the Washington, D.C., office of the law firm Bryan Cave LLP.

Class I Industrial Deep Well Safeguards



Recreated with permission from the American Chemistry Council.

and geared its regulatory requirements to the types of wells being used and the nature of the fluids being injected. For the Class I deep well injection used by industry for hazardous waste, EPA then conducted a negotiated rulemaking to implement the land-ban provision of the Hazardous and Solid Waste Amendments of 1984, which reauthorized the 1976 Resource Conservation and Recovery Act. This effort included participation by those groups that were most critical of the UIC program, as part of the process to develop revised regulations addressing their concerns. When the effort failed to achieve full consensus in the final stage, the agency nonetheless proceeded to adopt regulatory revisions that addressed each of the key points raised by the critics. EPA promulgated these program revisions in 1988. That was more than a decade ago. Nevertheless, UIC critics continue to cite problems with injection well operations predating implementation of the final regulations as a basis for seeking to prohibit deep well injection today.

Some critics claim that Congress intended to ban all injection of hazardous wastes as part of the 1984 RCRA amendments. But the statute allowed EPA to exempt from the ban any method of land disposal that proves to be protective of human health and the environment, and deep well injection meets the statutory test. Other critics attack isolated portions of the UIC program. An article by Suzi Ruhl published in the September/October 1999 issue of *The Environmental Forum* focuses on the regulation of Class I municipal wells in Florida. But Class I municipal wells are significantly different from Class I industrial wells, which are subject to more stringent siting and construction requirements. Whatever problems are claimed to exist with those wells should not be used as a basis for turning our backs on the use of Class I industrial wells, which have a proven record of safety and effectiveness.

Notwithstanding the strong safety record of Class I industrial wells, and their strict regulation, public acceptance of the technology is mixed. A prime reason is the conflicting signals EPA sends about the program. As noted, the agency declares that underground injection means that hazardous waste is "removed from the environment." But on the other hand, EPA continues to report injected wastes as "released to the environment" under the Toxics Release Inventory program — in much the same way it reports direct emissions to ambient air and discharges to surface water. As a result of this confusing characterization, press reports on the publication of EPA's TRI numbers have inaccurately described Class I injection with terms like "spewing," "dumping," or "discharges to waterways."

Baseless attacks and reporting misnomers cannot change the fact that Class I industrial deep well injection is a fundamentally safe and effective waste management and disposal method that should be adopted wherever the subsurface geology and hydrogeology support its use. Under these circumstances, it is the safest available disposal method for hazardous wastes.

The more closely EPA has examined industrial deep well injection over the years, the more the agency has reconfirmed the viability and effectiveness of properly operated wells as a safe waste management option. The present day use of Class I industrial wells is carefully managed, extensively regulated, closely monitored — and thoroughly studied and evaluated.

Deep well injection involves the disposal of industrial wastewaters thousands of feet below the earth's surface into deep, porous, permeable sand and rock formations. As EPA noted in its 1985 *Report to Congress on Injection of Hazardous Waste*, mandated by HSWA to examine land disposal of hazardous wastes by injection, these wastes will remain isolated and contained by impermeable confining layers "for geologic time" — i.e., for millions of years. EPA concluded in the preamble of the 1988 *Federal Register* notice for the improved regulatory program mentioned earlier that, once the geologic receiving formation has stabilized following injection, there is little or no possibility that injected wastes will ever move vertically upward out of the injection zone. Class I industrial wells are also designed to inject industrial wastewater far below any potentially usable sources of drinking water. Just in case, however, Congress prohibited any underground injection that would carry contaminants into underground sources of drinking water at levels that would require substantial additional treatment beyond that already necessary to render the water fit for human consumption.

The design of the wells under the 1988 regulations is also state-of-the-art. (See diagram, opposite.) The wells are built with re-

dundant containment systems and extensively monitored to prevent any loss of injected fluids. For environmental safety, Class I injection regulations require a well within a well — analogous to the double-hull arrangement on modern oil tankers. Regulations also require monitoring of injection pressure and the pressure of the protective fluid between the well casing and injection tube, which means that any leaks during injection would be immediately detected. Class I hazardous injection wells have alarm systems used to shut down injection operations should any loss of well integrity occur. This monitoring supplements the strict testing of construction integrity and mechanical operating integrity that wells must undergo before initial operation and periodically throughout the life of a well.

Beginning with the 1985 report and continuing through numerous other studies, the agency has analyzed voluminous scientific information on deep well injection. EPA has also conducted meticulous site-by-site reviews of Class I hazardous wells through its review of "no migration" demonstrations, which get their name from the requirement to show that a well qualifies for a land disposal ban exemption because there will be no migration of hazardous constituents from the injection zone for as long as the wastes remain hazardous. EPA concluded that chemical and physical mechanisms will render wastes nonhazardous within 10,000 years, but some facilities have demonstrated more efficient detoxification mechanisms. These comprehensive and site-specific studies caused the agency to conclude in 1991 that "Class I underground injection wells are safer than virtually all other waste disposal practices."

EPA-sponsored studies have also determined that deep well injection is a low health risk waste management option when compared to other methods. In 1989, the Office of Solid Waste and Emergency Response conducted a comparative risk project using panels of experts to compare the risks associated with various activities involving potentially toxic chemicals. The panels ranked risks from different waste management practices based on six factors: acute exposure health risks; chronic health risks from acute events; other health risks; groundwater sources affected; welfare effects (e.g., wildlife, materials, quality of life); and ecological risks. Based on input from the individual panels, the plenary panel developed consensus rankings to identify overall risk levels of the various waste management practices. The experts gave hazardous waste injection the lowest risk ranking.

The Health Effects Workgroup in that study concluded that Class I injection presents low health risks based on "extensive experience with the technology" — and that further regulation of Class I injection should not be a priority. The workgroup stated: "Underground injection had been of substantial concern to OSWER in the past, at least in part because of *suspected* health risks. [Emphasis in original.] Existing information does not appear to support this assessment, and substantial regulatory efforts in those areas should not be a priority based on health considerations."

The safety and effectiveness of deep well injection has also been reaffirmed when examined on Capitol Hill. Even when Congress passed HSWA in 1984, establishing a presumptive ban on the land disposal of hazardous wastes, key congressional leaders noted the need to distinguish between land disposal "techniques that can be environmentally sound and those that cannot." As noted earlier, HSWA authorized EPA to exempt from the ban any method of land disposal that proves to be protective. Deep well injection was singled out on the floor of the Senate as the one technique expected to meet the RCRA Section 3004(d-g) statutory test for protection of human health and the environment by demonstrating, "to a reasonable degree of certainty, that there will be no migration of hazardous constituents out of the disposal unit or injection zone for as long as the wastes remain hazardous."

Even so, eight years later, after EPA had established the HSWA land disposal restrictions (LDR) exemption program through which operators of many of the Class I hazardous waste wells had successfully demonstrated that continued operation of their wells would indeed be protective of human health and the environment, the House Commerce Committee's Oversight and Investigations Subcommittee launched an inquiry into the LDR exemption process. In October 1992, Chairman John Dingell (D-Michigan) sent EPA a long list of detailed interrogatories eliciting information about the Class I UIC program and, more specifically, about the LDR "no migration" demonstration process for Class I wells. His letter emphasized that Con-

gress had intended to ban land disposal and admonished EPA against treating the LDR exemption process "as a broad loophole" to allow continued use of injection wells.

In addition to extracting reams of information about the Class I UIC program (including the names, educational experience, and professional background of every person involved in reviewing the no-migration exemption petitions filed by Class I injection well operators), Dingell also requested the General Accounting Office to conduct an investigation of the program. Such double-barreled investigations had become a favorite method by the powerful congressman for focusing public scrutiny on EPA regulatory programs.

The agency responded to Dingell's interrogatories with scientific and technical data and information detailing every aspect of the Class I UIC regulatory program. EPA documented the thorough and highly technical nature of the no-migration petition demonstrations provided by Class I hazardous waste injection well operators — a process that some wells failed to survive and that caused other operators to modify significantly their operations. In addition, the agency commissioned a comprehensive assessment of purported "well failures" cited in the congressional interrogatories. The results of that study, delivered to Congress in 1993, found no contamination of drinking water resources resulting from the operation of any industrial Class I well since the advent of the program. In fact, the only cases of suspected fluid movement into underground sources of drinking water since EPA's initial UIC rules became effective involved the previously mentioned Florida Class I municipal wells, which are not subject to the same requirements as Class I industrial wells.

The information EPA provided to Dingell was turned over to the GAO, which found no basis for allegations that the no-migration exemption process was a sham. After initially examining the voluminous and thoroughly documented petitions, GAO did not attempt to second-guess the agency's decision-making. More importantly, it became obvious from the GAO study that injection well operators had been put through a rigorous scientific and technical review, which some operators had been unable to survive. Any notion of an agency rubber stamp was entirely baseless.

GAO conducted a thorough management audit of the UIC program that lasted almost two years and carried investigators into two regions (Region 6 in Dallas, and Region 5 in Chicago), EPA headquarters in Washington, and the states of Louisiana, Michigan, and Texas. In the end, GAO did not find an agency treating the LDR exemption provisions like a loophole. Instead, it declared, in auditor's jargon, that EPA was "progressing in implementing the 1984 amendments" and that "EPA strengthened its oversight of each region's underground injection control program." GAO essentially gave the Class I UIC program a clean bill of health, citing only minor enforcement concerns which were addressed and largely resolved even before the investigation was completed.

Considering the probing questions that initiated the congressional investigation, GAO's failure to find any major problems requiring correction provided a strong reaffirmation of the Class I program. These positive findings helped support passage of the Land Disposal Program Flexibility Act of 1996 to amend the land-ban provisions of RCRA. That legislation also drew support from the actions of OSWER, which recognized Class I injection as a safe, effective, and environmentally protective hazardous and nonhazardous waste management technology in connection with the development of the final set of LDR rules that addressed RCRA "characteristically hazardous wastes" — those that are ignitable, corrosive, toxic, or reactive. In the *Federal Register* preamble to its court-ordered proposal to impose additional restrictions on the injection of wastes

The facts show that, where proper geology and hydrogeology are available, deep well injection is the preferred method for managing hazardous wastes. Companies that are using it are doing right by society.

already rendered nonhazardous (or "decharacterized") prior to injection, OSWER acknowledged that "the risks addressed by this rule, particularly UIC wells, are very small relative to the risks presented by other environmental conditions or situations."

In testimony before the House on the LDR relief legislation, Solid Waste Director Michael Shapiro confirmed this assessment. Additional support was provided by EPA Region 6 Water Division Director Myron Knudson, who called deep well injection "extremely safe." He testified: "It has been used for about 30 years now, and since the Safe Drinking Water Act was put in place and since the regulations, there have been no problems with the injection wells." In response to questions concerning how Class I injection wells can be explained to the public, Knudson replied: "We sit down and have to spend several hours to convince some people, but the truth is it is very safe, and in fact, it is probably the most environmentally safe way you can dispose of waste." The House Report on the legislation highlighted EPA's assessment, emphasizing that the "potential health risks from Class I injection wells are extremely low."

The 1996 RCRA legislation provided specific relief from the land ban for both Class I injection wells and wastewater treatment systems regulated under the Clean Water Act for the management of decharacterized wastewater. The bill passed both houses of Congress with overwhelming bipartisan support on the basis that the imposition of LDR requirements on nonhazardous Class I wells injecting decharacterized waste would impose huge costs with little or no corresponding environmental benefit. (And EPA's projected annual cost to industry of up to $800 million for imposing hazardous well requirements on the injection of nonhazardous wastes at 154 facilities tends to belie any notion that deep well injection is a "cheap" waste management alternative.) Although environmental groups and some members of the hazardous waste treatment industry opposed the legislation, the basic premise of the injection well provision — that Class I injection wells are adequately regulated and present very low risks — was never seriously challenged. The legislation clearly reflects a level of congressional comfort that deep well injection can continue to provide a viable method for managing wastes.

Nevertheless, the 1992 congressional inquiry disclosed the potential for public misunderstanding of the Class I UIC program. EPA responded by publishing informational brochures highlighting some of its scientific conclusions and risk assessments. In *Class I Injection Wells and Your Drinking Water*, EPA summarizes the safety and effectiveness of deep well injection by stating, "Injecting wastes in Class I wells is safer than burying them in landfills, storing them in tanks, or burning the waste in incinerators." This was one of several favorable EPA statements that legislators quoted verbatim in supporting the 1996 LDR program relief legislation.

Even with these repeated confirmations of the safety and effectiveness of Class I industrial deep well injection, the technology still struggles to maintain acceptance. One of the principal reasons for this problem is the confusing way in which the information about deep well injection is reported to the public under the Toxics Release Inventory. The TRI program requires businesses to report annually on "releases to the environment" of some 650 listed chemicals and chemical categories and requires reporting on the methods used for the management of wastes containing these chemicals. Class I injection is grouped with direct discharges to air, surface water, and land, thereby creating the impression that Class I wells also discharge wastes directly into the human environment.

The truth about deep well injection is far different, which is why EPA concluded under the Superfund and RCRA programs that "emplacement of liquids into an injection zone through a Class I well does not constitute a release from a solid waste management unit but rather constitutes migration within the solid waste management unit." Yet the agency resists adopting a similar reading for TRI reporting, apparently for fear of losing jurisdiction to require any TRI reporting of Class I injection — something the operators and regulators of Class I wells have not sought. Based on its Superfund/RCRA interpretation, EPA should be very comfortable classifying deep well injection as a waste management method rather than a release to the environment.

EPA has recognized that the potential exists for the data in TRI to be mischaracterized, and the agency has taken a number of steps intended to improve public understanding of the TRI data. Beginning in 1993 in con-

junction with its annual publication of the TRI data, EPA provided explanations aimed at improving knowledge of how the data should be viewed. EPA reiterated that "Class I underground injection wells are safer than virtually all other waste disposal practices."

From 1993 through 1997, EPA also presented its data on environmental releases in two different formats — one that included injected wastes in the total and one that presented as releases only those to air, water and land. EPA noted that "substantial questions have been raised about whether Class I injection wells are properly viewed as a direct environmental discharge." EPA presented the alternative rankings to "help the public focus on releases of greatest concern in their communities" and did so "because releases to properly designed and constructed Class I injection wells have much lower exposure potentials than other, more direct forms of release."

In 1997, EPA modified the TRI reporting form to create an entirely separate reporting category for Class I "to distinguish Class I injection well data from data for other classes of injection wells in a way that makes that distinction clear for the public." But this change still seems to fall short of effectively communicating the critical message that EPA presents in its annual TRI release: "Injection of toxic chemicals into properly designed and constructed Class I wells will result in substantially lower exposure potential than more direct forms of environmental release. These wells are designed to entomb liquid wastes for at least 10,000 years."

The continuing problem of public misunderstanding has been particularly felt by the Ground Water Protection Council, the association of state UIC and groundwater protection programs and administrators. In a 1996 letter to the Office of Management and Budget, the GWPC urged EPA to change the way it reports Class I injection under the TRI because the present approach "undermines public confidence in the UIC program and the permits that states and EPA issue to Class I wells only after concluding that the wells will be constructed and operated in a manner that protects human health and the environment by protecting drinking water resources." Because of the confusion that TRI reporting creates, GWPC has noted that "state UIC and TRI officials are constantly called upon to defend the permitting of Class I wells and to explain why the operation of these wells serves to protect rather than threaten community environments and to reduce community risks by substituting for discharges to surface waters." The organization also wrote a letter to EPA declaring that "as public officials charged with the responsibility of protecting human health and the environment, we have great difficulty understanding how it could serve any legitimate purpose to tell the public that these wastes are being released to the environment after we have made the determination — after detailed, site-specific technical review — that these wastes will remain safely isolated from the environment."

Such a change would not withhold any information about Class I injection, as some have charged. Instead, it would have EPA report Class I injection data in a category that identifies it as a waste management method rather than as a direct release to the environment. GWPC has emphasized that this approach "would (1) recognize the inherent protectiveness of Class I injection while (2) fully informing the public about the amounts of wastes that are injected through Class I wells." The alternative reporting would eliminate the confusion over the environmental fate of injected wastes while continuing public reporting of the quantities of toxic chemicals in injected waste streams to ensure the community right to know about the quantities of wastes being disposed.

Citizen activists have also decried the confusion that is created by the present TRI reporting scheme and have urged that "a dif-

EPA and other scientific experts have concluded that these liquid wastes are "removed from the environment" — isolated from the biosphere thousands of feet below the earth's surface, where they will remain confined for millions of years.

ferent class of reporting be established for deep well injection that would not require such a discharge to be classified as a 'release to the environment.'" James Blackburn, an environmental lawyer representing citizens and municipalities in Texas, made this recommendation expressing the belief that "the reporting requirements under the TRI are leading to poorly considered decisionmaking that is increasing the actual risk associated with 'discharges' to the environment." He cited an example where a manufacturing facility had, in his view, "made the decision to abandon the deep well injection and to convert to wastewater treatment and surface water discharge" and had done so "due to the TRI reporting requirements and associated bad publicity that comes from EPA characterizing this form of disposal as a release to the environment." As a result, he concluded that "coastal fishermen and women and residents will actually be exposed to more dangerous pollution than would be the case if deep well injection were continued."

Opposition to industrial deep well injection has come in several different forms, but none that proves sustainable. Concerns that have been expressed in the past about perceived threats posed by deep industrial injection wells have been fully addressed and resolved by EPA's current regulatory program. Some of these concerns are simply outdated and have been addressed by stronger regulatory requirements. Others result from presumed cause and effect relationships that have been shown to be false upon closer examination.

For instance, EPA, GAO, and GWPC investigated questions raised about possible aquifer contamination as a result of old well operation problems. All of these incidents predate current UIC regulations by many years. Problematic wells in Chalmette, Louisiana; Erie, Pennsylvania; and Beaumont, Texas, were all drilled and taken out of commission before the UIC program was begun following the enactment of the Safe Drinking Water Act in 1974. EPA's 1986 report on well noncompliance episodes concluded that the incidents at all three of these facilities would not have occurred under today's UIC standards. As EPA has noted more recently, for Class I industrial wells, "there are no documented problems with the effectiveness of the UIC regulations."

The EPA study examined every reported well failure alleged to have caused underground drinking water contamination and concluded: "It is obvious that groundwater contamination resulting from Class I operations has been very insignificant when compared to other forms of land disposal. More importantly, the few cases of groundwater contamination could have been avoided with proper design and construction and if the current more stringent UIC standards had been in effect at that time." EPA further summarized the results of these studies in 1991, noting that, wherever any leakage had occurred, "the construction, monitoring, and [mechanical integrity testing] requirements of the current regulations would have either prevented the observed failure or detected its occurrence in time to prevent significant leakage."

More importantly, after conducting a comprehensive review in 1992 and 1993, EPA concluded: "Since 1988 there have been only a few minor operational problems associated with Class I hazardous wells." These have largely been related to surface operations, and none has resulted in a release to the environment. The detailed review of all operational problems revealed none that involved fluid movement into an aquifer and no post-1988 failures by Class I industrial wells subject to TRI reporting that involved fluid movement outside the well itself.

More recently, critics of Class I injection have pointed to the events surrounding a commercial hazardous waste management facility located in Winona, Texas, that included Class I injection wells among its operating units. Public dissatisfaction and the organization of a strong community activist group were traceable to complaints triggered by odors and regulatory violations associated with air emissions and hazardous waste management in surface units. Opponents of the facility used the public hearings on injection well permits, no-migration demonstrations, and modifications as forums in which to attack all aspects of the facility operation. Local citizens opposed permits and sought closure of the facility because of releases and emissions from surface operations at the facility, but no problems were attributed directly to the operation of the wells and no failures of the wells occurred. Indeed, although the facility was eventually closed, the wells were repermitted and are still being operated to facilitate cleanup efforts at the site.

In sum, it is clear that Class I industrial deep well injection is a safe and effective waste management and disposal method that should be adopted — consistent with pollution prevention and natural resource conservation programs — in areas where geology and hydrogeology support its use. Where appropriate, it will be the safest method of disposal for residual waste liquids. Neither the technology nor those companies that use deep well injection should be denigrated, for it is a safe and effective method that protects human health and the environment.

Instead, more should be done both to improve public understanding of Class I industrial injection and, more importantly, to maximize the public benefits that can be realized from the use of this safe and effective waste management method. First, companies should always consider deep well injection as an acceptable method for the management of residual liquid waste streams that remain following implementation of effective pollution prevention programs. If the geology supporting the use of deep well injection is available, companies should conduct the necessary and appropriate investigations to support the effective use of the technology and ensure that it is implemented consistent with public natural resource conservation and protection programs.

Second, government at all levels should ensure the availability of adequate resources to implement the UIC program responsibilities of environmental agencies. This includes the resources necessary at the state or federal level to conduct timely and effective reviews of UIC permit applications, LDR no-migration exemption petitions and demonstrations, modifications, and revisions, along with any other programmatic demonstrations that operators need to submit. Government resources also must be available for effective implementation, oversight, and enforcement of the Class I UIC program.

Third, Class I injection well data, particularly as collected under the TRI, should be reported in a different way to avoid misleading the public into believing that properly injected wastes pose a threat. Continuing the current approach of reporting TRI numbers to the public as if deep well injection is a direct release into the environment perpetuates false incentives to abandon Class I wells in favor of waste management methods that may be less protective. Class I injection numbers should be reported to the public in a way that clearly communicates the substantially lower exposure potential than with direct releases to ambient air and water and to the land surface.

Fourth, public and private pollution prevention and environmental protection resources should be directed on a priority basis to the discontinuation or reduction of activities that might result in direct human or environmental exposure rather than to discontinuing injection activities that pose a comparatively negligible threat to human health and the environment. Many operators of Class I industrial deep wells are implementing pollution prevention programs to reduce the generation and disposal of wastes — including wastes that are disposed of through deep well injection. Where wastes cannot be eliminated, however, the highest priority should be assigned to minimizing releases to the human environment by reducing direct discharges to air, water, and land — the environment.

Finally, as both government and the private sector move forward to implement assessments, plans, and programs for protecting watersheds and source waters, Class I deep well injection should be considered as one of the methods available for ensuring success. Its proven capability to "remove from the environment" industrial hazardous waste provides a valuable tool for meeting the goal of protecting public health and the ecosystem for generations to come. •

But business still has the responsibility to move continually toward pollution prevention, seeking source reduction, recycling, and other improvements that will lead to a diminishing role for all forms of disposal.

UIC Inventory by State - 2011

Region	State	Population (,000)	Area (sq.mi)	Class I HW Wells	Class I Other Wells	Class II Wells	Class III Sites	Class III Wells	Class IV Sites	Class V Wells
1	CT	3406	5542	0	0	0	0	0	0	710
1	MA	6349	9241	0						3652
1	ME	1275	33409		0					1972
1	NH	1236	9283				0			10454
1	RI	1048	1231					0		1462
1	VT	609	9615						0	1823
2	NJ	8414	8215	0	0	0	0	0		968
2	NY	18976	53989	0	1	481	6	179		30843
2	PR	3809	3508	0	0	0	0	0	0	3341
2	VI	121	171	0	0	0	0	0	0	71
3	DC	572	68	0	0	0	0	0	0	131
3	DE	784	2396	0	0	0	0	0	0	1437
3	MD	5296	12297	0	0	0	0	0	0	14309
3	PA	12281	46058	0	0	1857	0	0	0	14434
3	VA	7079	42326	0	0	12	1	7	0	12129
3	WV	1808	24231	0	0	779	2	21	0	4015
4	AL	4447	52237	0	0	247	1	3	0	342
4	FL	15982	59687	1	219	56	0	0	0	12787
4	GA	8186	58977	0	0	0	0	0	0	11110
4	KY	4042	40411	0	8	3165	0	0	0	14197
4	MS	2845	48258	4	1	1180	0	0	0	7546
4	NC	8049	52584	0	0	0	0	0	3	36969
4	SC	4012	31189	0	0	0	0	0	0	10823
4	TN	5689	42146	0	0	16	0	0	0	1733
5	IL	12419	57918	3	2	7858	0	0	0	18140
5	IN	6080	36420	4	19	1260	0	0	0	8483
5	MI	9938	96671	7	22	1432	5	47	0	8934
5	MN	4919	85747	0	0	0	0	0	0	2744
5	OH	11353	44828	10	0	2459	4	47	0	23,301
5	WI	5364	64846	0	0	0	0	0	0	1658
6	AR	2673	53182	4	10	1085	0	0	0	227
6	LA	4469	49650	17	21	3676	19	89	0	331
6	NM	1819	109069	0	5	4616	9	10	0	1885
6	OK	3451	68164	0	6	10854	1	2	2	1928
6	TX	20852	267277	62	46	52501	83	6543	6	35848
7	IA	2926	56269			7				1625
7	KS	2688	82235	5	58	15919	4	156	0	6383
7	MO	5595	69708	0	0	282	0	0	0	3851
7	NE	1711	77257		3	661	1	4178		777
8	CO	4301	102868	0	20	901	6	38	0	1833
8	MT	902	138904	0	0	1062	0	0	0	903
8	ND	642	69372	0	4	1171	0	0	0	575

UIC Inventory by State - 2011

Region	State	Population (,000)	Area (sq.mi)	Class I HW Wells	Class I Other Wells	Class II Wells	Class III Sites	Class III Wells	Class IV Sites	Class V Wells
8	SD	755	69179	0	0	87	14	14	0	271
8	UT	2233	81279	0	0	462	2	18	8	5346
8	WY	494	94867	0	41	5005	9	10552	0	2041
9	AS	65	90	0	0	0	0	0	0	0
9	AZ	5131	82584	0	0	0	3	15	0	23471
9	CA	33872	157980	0	46	47624	1	212	0	19419
9	GU	154	217	0	0	0	0	0	0	460
9	HI	1212	6459	0	0	0	0	0	0	5660
9	MP	72	189	0	0	0	0	0	0	37
9	NV	1998	108647	0	0	18	0	0	0	1110
10	AK	627	615094	0	29	1347	0	0	0	1761
10	ID	1294	82286	0	0	0	0	0	0	16636
10	OR	3421	95930	0	0	8	0	0	14	33394
10	WA	5894	66642	0	0	1	0	0	0	42253
Total		**285639**	**3638897**	**117**	**561**	**168089**	**171**	**22131**	**33**	**468543**

United States
Environmental Protection
Agency

Office of Water
(4601)
Washington, DC 20460

EPA 816-R-01-007
March 2001
www.epa.gov/safewater

Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells

Contents

US EPA's Program to Regulate the Placement of Waste Water and other Fluids Underground

SAFE DRINKING WATER ACT • 1974-2004 • PROTECT OUR HEALTH FROM SOURCE TO TAP

Why Do We Need a Program to Regulate the Placement of Fluids Underground?

Facilities across the nation discharge a variety of hazardous and nonhazardous fluids into underground formations through more than 800,000 injection wells. Our way of life would be quite different without injection wells. Agribusiness and the chemical and petroleum industries as we know them today, could not exist. While treatment technologies exist, it would be cost prohibitive to treat and release to surface waters the trillions of gallons of wastes that industries produce each year. When wells are properly sited, constructed, and operated, underground injection is an effective and environmentally safe alternative to surface disposal.

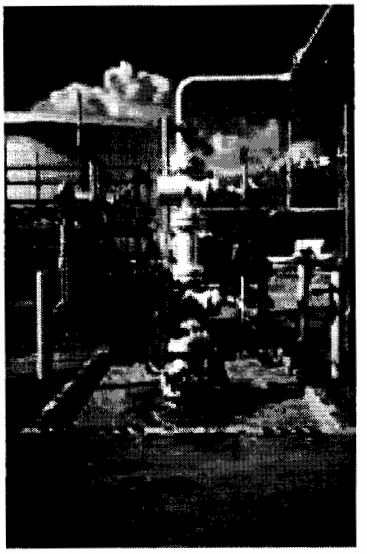
The Underground Injection Control (UIC) Program provides these safeguards so that injection wells do not endanger drinking water. The most accessible fresh water is stored in shallow geological formations called aquifers and is the most vulnerable to contamination. These aquifers feed our lakes; provide recharge to 41 percent of our streams and rivers, particularly during dry periods; and serve as resources for 89 percent of public water systems in the United States.

What Is an Injection Well?

An injection well is used for subsurface emplacement of fluids. An injection well is a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system. This definition covers a wide variety of injection practices that range from more than 140,000 technically sophisticated highly monitored wells which pump fluids into isolated formations up to two miles below the Earth's surface, to the far more numerous on-site drainage systems, such as septic systems, dry wells, and storm water wells, that discharge fluids a few feet underground.

How Does the UIC Program Regulate the Very Different Types of Underground Injection?

United States Enivronmental Protection Agency groups underground injection into five classes for regulatory control purposes. Each class includes wells with similar functions, and construction and operating features so that technical requirements can be applied consistently to the class.



CLASS I WELL

- Class I injects hazardous and nonhazardous fluids (industrial and municipal wastes) into isolated formations beneath the lowermost underground source of drinking water (USDW). Because they may inject hazardous waste, Class I wells are the most strictly regulated and are further regulated under the Resource, Conservation and Recovery Act.
- Class II includes injection of brines and other fluids associated with oil and gas production.
- Class III injects fluid associated with solution mining of minerals.
- Class IV addresses injection of hazardous or radioactive wastes into or above a USDW and is banned unless authorized under other statutes for ground water remediation.
- Class V includes all underground injection not included in Classes I-IV. Generally, most Class V wells inject nonhazardous fluids into or above a USDW and are on-site disposal systems, such as floor and sink drains which discharge to dry wells, septic systems, leach fields, and drainage wells. Injection practices or wells which are not covered by the UIC Program include single family septic systems and cesspools as well as non-residential septic systems and cesspools serving fewer than 20 persons that inject ONLY sanitary waste water.

Are All Injection Wells Waste Disposal Wells?

All injection wells are not waste disposal wells. some Class V wells, for example, inject surface water to replenish depleted aquifers or to prevent salt water intrusion. Some Class II wells inject fluids for enhanced recovery of oil and natural gas, and others inject liquid hydrocarbons that constitute our nation's strategic fuel reserves in times of crisis. But most injection wells have the potential to inject fluids that may cause a public water system to violate National Drinking Water Standards. These standards provide our safety net against waterborne disease and other health risks.

The UIC Program Protects More Than Ground Water

The UIC Program:

- Reduces human exposure to organic and inorganic chemicals and heavy metals by removing them from the environment;
- Eliminates more than nine billion gallons of hazardous waste and a trillion gallons of oil field waste from the environment each year;

CLASS V WELL - Aquifer Remediation Well

- Decreases public water system costs for water treatment;
- Avoids cost of ground water remediation, medical monitoring for health effects, and replacing a drinking water supply;
- Reduces pollution in wellhead and source water protection areas, rivers, streams, lakes, wetlands, watersheds, estuaries and coastal zones; and
- Enables communities to make wise local land use decisions.

How Does US EPA's UIC Program Prevent Contamination of Our Water Supply?

In general, US EPA's UIC Program prevents contamination of water supplies by setting minimum requirements for state UIC Programs. A basic concept of US EPA's UIC Program is to prevent contamination by keeping injected fluids within the intended injection zone, or in the case of injection directly or indirectly into a USDW, the fluids must not endanger or have the potential to endanger a current or future public water supply. Most of the minimum requirements that affect the siting of the injection well, the construction, operation, maintenance, monitoring, testing, and finally, the closure of the well, are designed to address these concepts. Another basic concept is that all injection wells require authorization under general rules or specific permits. Finally, states are expected to have primary enforcement authority (primacy) for the UIC Program. To date, 33 states, Guam, Commonwealth of the Mariana Islands, and Puerto Rico have obtained primacy for all classes of injection wells. Seven states share primacy with US EPA. The US EPA administers UIC programs for the remaining ten states, and all other federal jurisdictions and Indian Country.

For More Information

To learn more about underground injection control, call the Safe Drinking Water Hotline at 1-800-426-4791 or visit the safewater web site at *www.epa.gov/safewater*.

Office of Water (4606) **www.epa.gov/safewater** **EPA 816-F-04-040 June 2004**

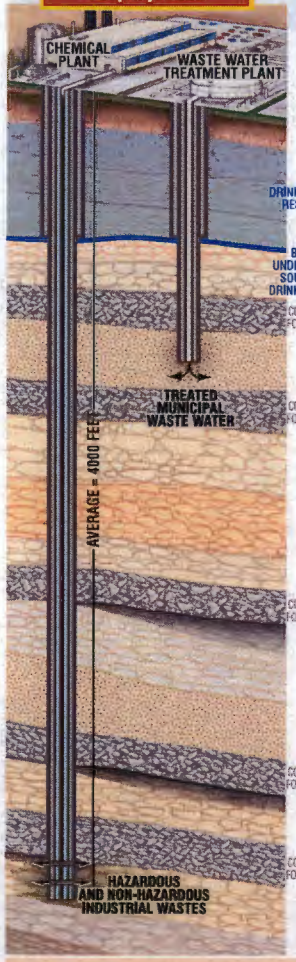
Safe Drinking Water Act

Underground Injection Control (UIC) Program

Protecting Public Health and Drinking Water Resources

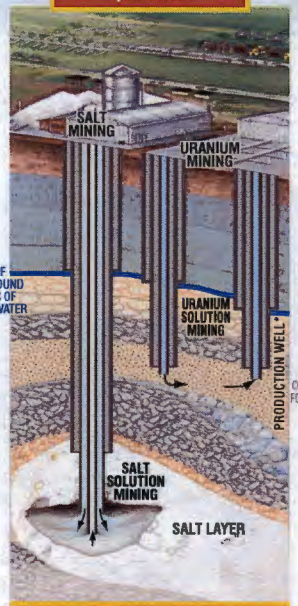
EPA
United States Environmental Protection Agency
Office of Water (4606)
Washington, DC 20460
EPA 816-H-10-001
November 2010
http://water.epa.gov/drink

Class I wells- Isolate hazardous, industrial and municipal wastes through deep injection



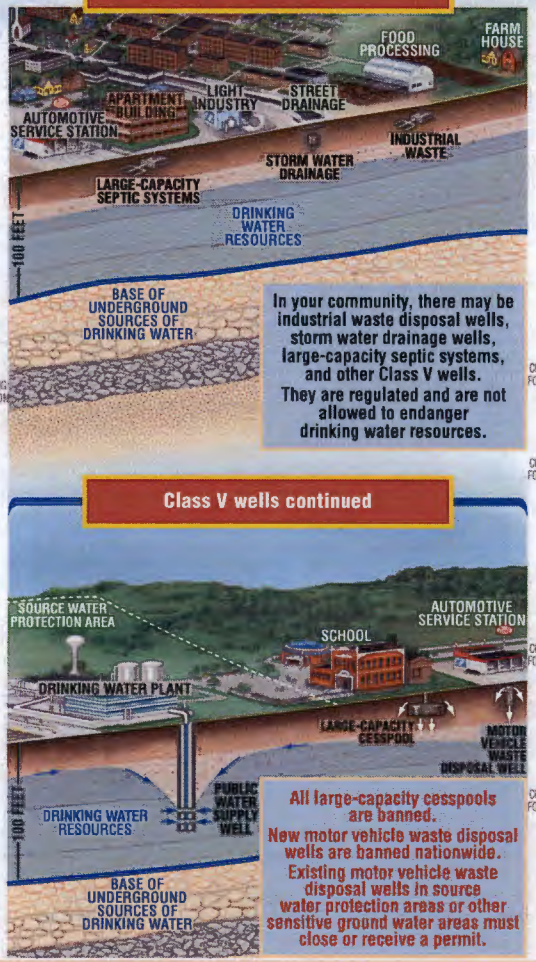
Class II wells- Inject oil and gas production fluids

Class III wells- Minimize environmental impacts from solution mining operations



Class IV wells- Banned under all scenarios except as part of authorized hazardous waste cleanup activities

Class V wells- Manage the shallow injection of all other fluids to prevent contamination of drinking water resources

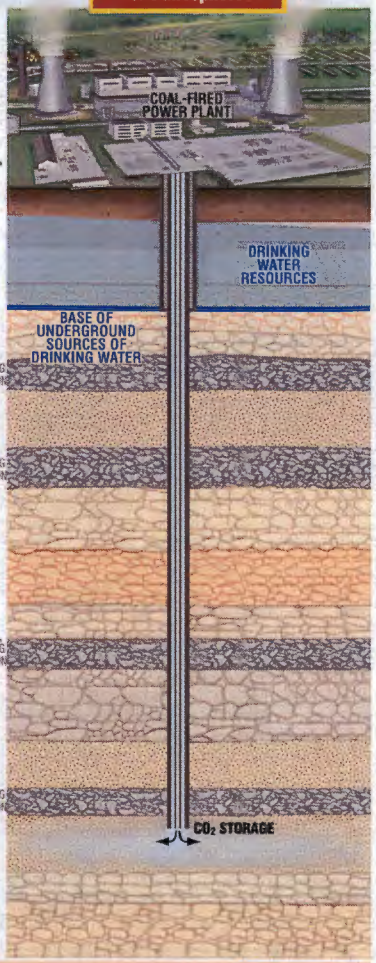


In your community, there may be industrial waste disposal wells, storm water drainage wells, large-capacity septic systems, and other Class V wells. They are regulated and are not allowed to endanger drinking water resources.

Class V wells continued

All large-capacity cesspools are banned.
New motor vehicle waste disposal wells are banned nationwide.
Existing motor vehicle waste disposal wells in source water protection areas or other sensitive ground water areas must close or receive a permit.

Class VI wells- Inject CO_2 for long-term storage to reduce emissions to atmosphere



Not drawn to scale

Safe Drinking Water Act Underground Injection Control (UIC) Program

Protecting Public Health and Drinking Water Resources

WHY DO WE HAVE A PROGRAM TO REGULATE UNDERGROUND INJECTION?

Each year Americans generate large amounts of waste fluids. More than 750 billion gallons of hazardous and nonhazardous fluids are disposed of safely through underground injection. The Underground Injection Control (UIC) Program is designed to protect underground sources of drinking water (USDWs) and provide a safe and cost-effective means for industries, municipalities, and small businesses to dispose of their wastewater, extract mineral resources, and store water for the future. Illegal discharges have the potential to contaminate our underground drinking water resources. Preventing this contamination is vital because most accessible fresh drinking water is found underground in shallow formations called aquifers. Aquifers provide water for more than 90 percent of the public water systems in America. They also supply agricultural wells, feed our lakes, and help recharge our streams and rivers, particularly during dry periods. In addition, millions of Americans living in rural areas rely on private wells that draw their water from aquifers. Safe and clean drinking water resources are essential for our growing population. The UIC Program prevents contaminants from entering our drinking water resources to protect our public health.

WHAT ARE INJECTION WELLS?

An injection well is any bored, drilled, or driven shaft, or dug hole, whose depth is greater than its largest surface dimension; an improved sinkhole; or a subsurface distribution system used to discharge fluids underground. These wells range from deep, highly technical, and more frequently monitored wells to shallow on-site drainage systems, such as septic systems, cesspools, and storm water drainage wells. There are six categories or "classes" of injection wells based on function, construction, and operating features.

WHAT IS THE STATUTORY BASIS FOR THE UIC PROGRAM?

In 1974, Congress passed the Safe Drinking Water Act (SDWA). Part of SDWA required the U.S. Environmental Protection Agency (EPA) to report back to Congress on waste disposal practices, and develop minimum federal requirements for injection practices that protect public health by preventing injection wells from contaminating USDWs. USDWs are defined as aquifers or portions of aquifers that have a sufficient quantity of ground water to supply a public water system and contain fewer than 10,000 milligrams per liter (mg/l) or parts per million (ppm) total dissolved solids (water that can be treated to drinking water standards). This includes all current and future underground drinking water resources.

HOW DOES THE UIC PROGRAM PROTECT PUBLIC HEALTH?

EPA established the UIC Program to set minimum federal requirements for all injection wells that discharge hazardous and non-hazardous fluids above, into, or below USDWs. They affect the siting, construction, operation, maintenance, monitoring, testing, and closure of injection wells. All operational injection wells require authorization under general rules or specific permits. Fluids cannot be injected if they may endanger a drinking water source.

- **Class I wells — *Isolate hazardous, industrial and municipal wastes through deep injection.*** Class I wells inject hazardous and nonhazardous wastes into deep, isolated rock formations below the lowermost USDW. There are specific siting, construction, operating, monitoring and testing, reporting and record keeping, permitting, and closure requirements for all Class I wells. There are two main types of Class I wells: hazardous waste wells and non-hazardous waste wells. There are approximately 650 Class I wells in operation in the United States.
  - *Class I Hazardous Waste Disposal Wells* are mainly used by industries such as petroleum refining and metal, chemical, and pharmaceutical production. These wells inject up to 2 miles below the surface and are designed to prevent any waste from escaping the injection zone. Because of the hazardous nature of the waste, Class I hazardous well owners must also show that the hazardous waste will not move from the injection zone for 10,000 years, or for as long as the waste remains hazardous. Class I hazardous waste wells are stringently regulated under the SDWA (UIC Program) and the Resource, Conservation, and Recovery Act (RCRA).
  - *Class I Non-Hazardous Waste Disposal Wells* are used by industries and municipal wastewater treatment facilities to dispose of nonhazardous waste, such as dilute manufacturing process waste and treated sanitary wastewater. All Class I non-hazardous wells are monitored, inspected, and tested regularly.
- **Class II wells — *Inject oil and gas production fluids.*** Class II wells inject fluids associated with oil and natural gas production. Most of the injected fluid is brine pumped to the surface along with oil and gas. This brine is often saltier than seawater and can contain toxic metals and radioactive substances. By injecting the brine, Class II wells prevent surface contamination of soil and water. In addition, well operators inject residual brines, steam, polymers, and other fluids to enhance the production of oil and gas. Class II well operators must follow strict construction and conversion (from production wells) requirements, except when historical practices in the state and geology allow for different standards. In general, a production well (e.g., oil and gas well) is not covered by the UIC program unless that well is hydraulically fractured for the purpose of production stimulation when diesel is used as a fracturing fluid. Class II wells are permitted or authorized by rule; the well owner or operator must meet all applicable requirements; and the wells are tested and inspected regularly. There are about 154,000 Class II wells in operation in the United States.
- **Class III wells — *Minimize environmental impacts from solution mining operations.*** Class III wells inject fluids into rock formations to dissolve and extract minerals. The injected fluids are pumped to the surface and the minerals in solution are extracted. Generally, the fluid is recycled into the same formation for further mineral extraction. More than 50 percent of the salt and 80 percent of the uranium extraction in the United States involves Class III injection wells. These wells are permitted or authorized by rule. Class III well owners or operators must case and cement their wells, and the wells must be tested regularly. There are about 20,700 Class III wells operating in the United States.
- **Class IV wells — *Prevent ground water contamination by prohibiting the shallow injection of hazardous waste except as part of authorized cleanup activities.*** Class IV wells were shallow wells used to inject hazardous or radioactive wastes. They are banned except when operated to inject treated contaminated ground water back into the original aquifer. These wells can be operated only with federal or state approval under the RCRA or Superfund programs. There are about 20 waste cleanup sites with Class IV wells in operation in the U.S.
- **Class V wells — *Manage the shallow injection of all other fluids.*** Class V wells are injection wells that are not included in Classes I through IV and VI. Class V wells inject nonhazardous fluids into or above an aquifer. They are typically shallow, on-site disposal systems, such as floor and sink drains that discharge into dry wells, septic systems, leach fields, and similar types of drainage wells, although there are some Class V wells that are deep injection wells. When properly designed, sited, operated, and maintained, Class V wells do not endanger drinking water sources. Most Class V wells are authorized by rule. An estimated 400,000 to 650,000 Class V wells are in operation in the United States. Examples of Class V wells include the following:
  - *Agricultural Drainage Wells* are used to drain farmland for cultivation. They include improved sinkholes, abandoned drinking water wells, and underground drain tiles and cisterns.
  - *Industrial Waste Disposal Wells* are used to dispose of non-hazardous industrial or commercial waste and fluids. These wastes and fluids include wastewater from a wide variety of industries including petroleum refineries, car washes, laundromats, commercial printers, food processors, chemical manufacturers, electroplaters, small machinery, tool and die, and other industrial operations.
  - *Motor Vehicle Waste Disposal Wells* are used to dispose of fluids from the repair or maintenance of motor vehicles. Fluids entering these wells include organic chemicals such as petroleum products and inorganic chemicals such as heavy metals. New motor vehicle waste disposal wells are banned, and existing wells must close or receive a permit.
  - *Storm Water Drainage Wells* are used to remove storm water and urban runoff from surfaces such as roadways, roofs, and paved surfaces to prevent flooding.

There are many other subcategories of Class V wells. Additional information can be found by visiting EPA's UIC Program Web site at http://www.epa.gov/safewater/uic.html.

- **Class VI wells — *Inject carbon dioxide (CO_2) for the purpose of long-term storage, also known as geologic sequestration (GS).*** Geologic sequestration is the process of injecting CO_2 that has been captured from an emission source, such as a power plant or industrial facility, into subsurface formations including deep saline formations, depleted oil and gas fields, and unmineable coal seams, for long-term storage. Injection into Class VI wells requires the owner or operator of the well to obtain a permit before injection occurs to prevent endangerment of USDWs.

  EPA finalized Federal requirements for underground injection of CO_2 for purposes of geologic sequestration in November 2010. The tailored requirements address the unique characteristics of CO_2, including the potential for large injection volumes; the buoyancy and mobility of CO_2 within the subsurface; and its corrosivity in the presence of water. Minimum technical criteria are set for permitting, geologic site characterization, area of review (AoR) and corrective action, financial responsibility, well construction, operation, testing and monitoring, well plugging, post-injection site care (PISC), and site closure. The rule helps ensure consistency in permitting underground injection of CO_2 at GS operations across the U.S. and provides requirements to prevent endangerment of USDWs in anticipation of the use of GS to reduce CO_2 emissions to the atmosphere.
  - *How does GS work?* CO_2 is first captured from fossil-fueled power plants or other emission sources. To transport captured CO_2 for GS, operators typically compress CO_2 to convert it from a gaseous state to a supercritical state, in which it exhibits properties of both a liquid and a gas. After capture and compression, the CO_2 is delivered to the sequestration site and injected into deep subsurface rock formations through one or more wells, using technologies developed and refined by the oil, gas, and chemical manufacturing industries over the past several decades. When injected into an appropriate receiving formation, CO_2 is sequestered by a combination of trapping mechanisms, including physical and geochemical processes. Physical trapping occurs when the relatively buoyant CO_2 is trapped under the low permeability confining system. Physical trapping can also occur as CO_2 is immobilized in formation pore spaces. Geochemical trapping occurs when chemical reactions between the dissolved CO_2 and minerals in the formation lead to the precipitation of solid carbonate minerals. The timeframe over which CO_2 will be trapped by these mechanisms depends on properties of the receiving formation and the injected CO_2 stream. The effectiveness of physical CO_2 trapping is demonstrated by natural analogs in a range of geologic settings where CO_2 has remained trapped for millions of years.

WHO IMPLEMENTS THE UIC PROGRAM?

States and tribes may apply to EPA to obtain primary enforcement responsibility, or primacy, to administer the UIC Program. Primacy programs must meet the minimum federal requirements but may have more stringent requirements. Thirty-three states, Guam, the Commonwealth of the Mariana Islands, and Puerto Rico have primacy for all classes of injection wells. Seven states and two tribes share primacy with EPA. EPA directly implements the UIC programs for the remaining states, the Virgin Islands, American Samoa, and Indian Country.

WHAT CAN YOU DO TO PROTECT YOUR DRINKING WATER?

Preventing contamination can save you money and protect your family's health. Here are some of the things you can do to help protect your drinking water source:

- **Know where your drains go.** Many homes or businesses use septic systems or drywells for waste disposal. These systems are designed for household sanitary wastes only.
- **Become involved in Source Water Protection.** States have completed Source Water Assessments for their public water systems that identify the major potential sources of contamination (including Class V wells) to public drinking water supplies. The Safe Drinking Water Act Amendments of 1996 require States to make the results of source water assessments available to the public.

  Communities are using this information to plan protection activities and identify Class V wells for proper management to prevent contamination of drinking water sources. The UIC Program has banned motor vehicle waste disposal wells in source water protection areas. States are also encouraged to target these areas for UIC protective measures.
- **Read your consumer confidence report.** This report, published once a year by the agency providing you with your drinking water, gives you information about the quality of your drinking water and information about your state's source water assessment for your system, when it has been completed.

FOR MORE INFORMATION:

Call the Safe Drinking Water Hotline (800) 426-4791 or the Office of Ground Water and Drinking Water (202) 564-3750; write to The UIC Program, Mail Code 4606, U.S. EPA, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460; or visit the Web site at http://water.epa.gov/drink/.

SUMMARY OF PROPOSED WATER CONSERVATION RULE

Navajo Refining Company LLC (Navajo Refining) has petitioned the New Mexico Water Quality Control Commission (WQCC) to amend several existing Sections of 20.6.2.3000 NMAC and 20.6.2.5000 NMAC and to adopt several new Sections of 20.6.2.5300 NMAC (collectively the Water Conservation Rule (WCR) or proposed regulations).[1] The proposed regulations would authorize the New Mexico Oil Conservation Division (OCD) to regulate underground injection control (UIC) Class I hazardous waste injection wells for refineries in New Mexico. The UIC program is part of the federal Safe Drinking Water Act (SDWA), and New Mexico has been delegated authority to administer this program. As a condition of that delegated authority, New Mexico's UIC regulations must be at least as stringent as the U.S. Environmental Protection Agency's (EPA's) regulations.

In general, the proposed regulations are based on federal regulations for Class I hazardous waste injection wells found in 40 C.F.R. Parts 144 and 146. The proposed regulations draw from these federal provisions in two ways. First, in many cases, entire Code of Federal Regulation (C.F.R.) provisions have been incorporated verbatim (with minor conforming changes discussed below) and, as a result, are as stringent as the federal regulations. Minor adjustments were made to reflect the fact that (1) the regulations would be administered by OCD rather than by EPA and (2) the regulations will become a part of the NMAC. As a result, names, titles, and cross references have been adjusted to refer to New Mexico agencies and existing provisions in the NMAC. Second, where practicable, the proposed regulations incorporate relevant C.F.R. provisions by reference.

In most cases, New Mexico's existing UIC requirements are functionally equivalent to EPA's regulations. In turn, the proposed regulations are, at a minimum, as stringent as EPA's regulations. In several cases, however, the proposed regulations are more stringent than EPA's regulations, due in part to the stringency of New Mexico's existing UIC regulations. Finally, the proposed regulations would amend several existing sections of the NMAC because Class I hazardous waste injection wells would no longer be prohibited under New Mexico law.

The sections below describe the changes and additions that Navajo Refining is proposing and explains their relevance to the Class I hazardous waste injection well program. Two exhibits are attached to this Summary of the Proposed Water Conservation Rule. The first is a Cross Reference Table that shows each C.F.R. provision included in the proposed regulations along with the corresponding NMAC citation. The second is a draft of the portions of the proposed WCR that were adapted from the C.F.R. provisions. It shows in redline the changes that were made to the original C.F.R. provisions.

20.6.2.3106 NMAC APPLICTION FOR DISCHARGE PERMITS AND RENEWALS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.3106 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect new fee provisions for Class I hazardous waste

[1] The summary is based on the Second Amended Petition, as further revised according to the proposed changes outlined in the Direct Testimony of Robert O'Brien.

injection wells located in 20.6.2.5302 NMAC. The amount of the fees was developed based on discussions with OCD. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.3107 NMAC MONITORING, REPORTING, AND OTHER REQUIREMENTS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.3107 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the new well closure requirements for Class I hazardous waste injection wells located in 20.6.2.5361 NMAC. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.3109 NMAC SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENTS FOR ABATEMENT PLANS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.3109 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5001 NMAC PURPOSE:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5000 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5002 NMAC UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

Navajo Refining has proposed an administrative change to Section 20.6.2.5001 NMAC to expand the scope of hazardous or radioactive waste regulated under 20.6.2.5000 *et seq.* to include those materials listed in Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3). This change is necessary to ensure that New Mexico's Class I hazardous waste injection well regulations are as stringent as the federal requirements.

20.6.2.5003 NMAC NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS:

Navajo Refining has proposed an administrative change to Section 20.6.2.5003 NMAC to reflect the fact that New Mexico's Ground and Surface Water Protection regulations would encompass Sections 20.6.2.1 through 20.6.2.5399 NMAC. This change is necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5004 NMAC PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5004 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5101 NMAC DISCHARGE PERMIT AND OTHER REQUIREMETNS FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5101 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. Navajo Refining has also proposed new signatory requirements for reports required by Class I hazardous waste injection well permits. These signatory requirements are the same as existing requirements for UIC permit applications. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5102 NMAC PRE-CONSTRUCTION REQUIREMETNS FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5102 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5103 NMAC DESIGNATED AQUIFERS FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5103 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5104 NMAC WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5104 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5200 NMAC TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed an administrative change to Section 20.6.2.5200 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. This change is necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5201 NMAC PURPOSE:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5201 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited and to reference additional requirements for Class I hazardous waste injection wells located in Sections 20.6.2.5300 through 20.6.2.5399 NMAC. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5204 NMAC MECHANICAL INTEGRITY FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5204 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5209 NMAC PLUGGING AND ABANDONMENT FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5209 NMAC to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5210 NMAC INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I WELLS AND CLASS III WELLS:

Navajo Refining has proposed several administrative changes to Section 20.6.2.5210 NMAC to reflect the fact that New Mexico's UIC regulations would encompass Sections 20.6.2.5000 through 20.6.2.5399 NMAC and to reflect the fact that Class I hazardous waste injection wells would no longer be prohibited. These changes are necessary to reflect substantive changes proposed in other NMAC provisions.

20.6.2.5300 NMAC REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

Section 20.6.2.5300 NMAC provides an overview of the Class I hazardous waste injection well program. Subsection A explains that Class I hazardous waste injection wells are subject to the general UIC regulations in Sections 20.6.2.5000 through 20.6.2.5299 NMAC as well as the specific Class I hazardous waste injection wells provisions located in 20.6.2.5300 through 5399 NMAC. It also clarifies that, in the event that regulatory provisions conflict, Class I hazardous waste injection wells must comply with Sections 20.6.2.5300 through 20.6.2.5399 NMAC. Subsection B limits the scope of New Mexico's Class I hazardous water injection well program

to injection wells that are operated by petroleum refineries for the sole purpose of disposing of wastes generated by the refineries. As a result of this limitation, commercial hazardous waste injection wells would still be prohibited in New Mexico. Subsection C delegates authority to administer the Class I hazardous waste injection well program to the New Mexico energy, minerals, and natural resources department, oil conservation division (OCD), in accordance with NMSA 1978, § 70-2-12 and the 1982 Joint Powers Agreement Between the Environmental Improvement Division, the Oil Conservation Division, and the Mining and Minerals Division.

These provisions are intended to provide for the orderly administration of the Class I hazardous waste injection well program for oil refineries in New Mexico.

20.6.2.5301 NMAC DEFINITIONS

Section 20.6.2.5301 NMAC defines seven terms used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC. Six of those terms—cone of influence, director, existing well, injection interval, new well, and transmissive fault or fracture—are copied verbatim from the EPA Class I hazardous waste injection regulations on which Sections 5300 through 5399 NMAC are based. The seventh term, "groundwater of the State of New Mexico" replaces the term "underground source of drinking water" that is used in EPA's regulations. Groundwater of the State of New Mexico defines a broader range of groundwater aquifers because it includes all groundwater with a total dissolved solid (TDS) of 10,000 mg/l or less, regardless of their size or current use. In contrast underground sources of drinking water are limited to those aquifers with a TDS of 10,000 or less that are used or have the potential to be used to supply a public water system. *See, e.g.*, 40 C.F.R. § 144.3. In this respect, the proposed regulations are more stringent than EPA's Class I hazardous waste injection well regulations because they are designed to protect a broader range of groundwater formations.

These definitions are intended to ensure that terms used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC are properly understood and given a consistent meaning.

20.6.2.5302 NMAC FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

Section 20.6.2.5302 NMAC prescribes a series of fees that are applicable to Class I hazardous waste injection well permit applicants and operators in lieu of the generally applicable fee provisions found in Section 20.6.2.3114 NMAC. It includes provisions for filing fees, permit fees, annual administration fees, renewal fees, modification fees, and financial assurance fees. All fees must be paid to the Water Quality Management Fund. The permit fee and renewal fees may be paid in annual installments over the life of the permit. The amounts were developed in coordination with OCD. A summary of the fees is provided in the table below:

Fee	**Amount**
Filing Fee	$100
Permit Fee	$30,000
Annual Administration Fee	$20,000
Renewal Fee	$10,000
Modification Fee	$10,000
Minor Modification Fee	$1,000

Financial Assurance Fee (approval)	Greater of $250 or 0.01%
Financial Assurance Fee (annual review)	Greater of $100 or 0.001%
Corporate Guarantee Financial Assurance Fee	$5,000

These fee provisions are intended ensure that the New Mexico OCD has adequate resources to administer the Class I hazardous waste injection well program.

20.6.2.5303 NMAC CONVERSION OF EXISTING INJECTION WELLS:

Section 20.6.2.5303 NMAC authorizes the conversion of existing Class I non-hazardous waste injection wells into Class I hazardous waste injection wells, provided that the well meets the requirements of Sections 20.6.2.5300 through 20.6.2.5399 NMAC and the well operator obtains a Class I hazardous waste injection well permit.

This provision is intended to allow refineries to begin siting and constructing Class I injection wells and, if necessary, using them to dispose of non-hazardous waste prior to the conclusion of the WQCC's consideration of this proposal and any subsequent approval that may be required by EPA before the New Mexico OCD is authorized to administer a Class I hazardous waste injection well program.

20.6.2.5310 NMAC REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST:

Section 20.6.2.5310 NMAC is based on 40 C.F.R. § 144.14 and, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions is not materially different from 40 C.F.R. § 144.14.

This Section applies to hazardous waste that is transported from the place of generation to the hazardous waste injection well by trucking or some other means that must be accompanied by a manifest under the federal Resource Conservation and Recovery Act (RCRA). It directs owners of hazardous waste injection wells accepting such waste to apply for authorization to inject such wastes within six months after approval of a State UIC program. In addition to Class I hazardous waste injection well regulations, the permittee must also comply with RCRA provisions regarding notification, identification numbers, manifest system, manifest discrepancies, operating records, annual reports, unmanifested waste reports, personnel training, and certification of closure.

This provisions is intended to ensure that wells injecting hazardous waste comply with New Mexico's Class I hazardous waste injection well program and that New Mexico's Class I hazardous waste injection well program is as stringent as EPA's class I hazardous waste injection well program.

20.6.2.5311 through 20.6.2.5319 NMAC [RESERVED]

20.6.2.5320 NMAC ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS):

Section 20.6.2.5320 NMAC incorporates by reference EPA's financial assurance requirements for Class I hazardous waste injection wells found in 40 C.F.R. Part 144, Subpart F and thus is as stringent as EPA's regulations. Section 144.60 is an introductory provision that makes 40 C.F.R. Part 144, Subpart F applicable to all Class I hazardous waste injection wells. Section 144.61 defines a series of terms used in 40 C.F.R. Part 144, Subpart F. Section 144.62 requires Class I hazardous waste injection well permittees to estimate, and revise as necessary, the costs required to plug and abandon their wells when operations cease. These cost estimates provide the basis for the financial assurance requirements applicable to each well. Section 144.63 requires each Class I hazardous waste injection well permittee to provide financial assurance that is sufficient to cover the estimated plugging and abandonment costs. Options for providing financial assurance include a trust fund, surety bond, letter of credit, insurance, or a corporate parent guarantee. Section 144.64 requires the permittee of a Class I hazardous waste injection well to notify the Director of OCD if the entity providing the financial assurance becomes insolvent or if the instrument providing financial assurance is otherwise compromised. If such an event occurs, the permittee is also required to establish an alternative form of financial assurance. Section 144.70 provides forms for each specific type of financial assurance that must be utilized by permittees of Class I hazardous waste injection wells. The language included in the forms must be used verbatim in the financial assurance instruments.

These provisions are intended to ensure that sufficient funds are available to plug and abandon Class I hazardous waste injection wells in the event that the well operator lacks the financial capacity to do so when well operations cease.

20.6.2.5321 NMAC MODIFICATIONS, EXCEPTIONS, AND OMISSIONS:

Section 20.6.2.5321 NMAC provides modifications, exceptions, and omissions to the incorporation by reference of 40 C.F.R. Part 144, Subpart F. Subsections A and B modify the meaning of certain terms to refer to New Mexico agencies, officials, and definitions in lieu of their federal counterparts. This is necessary to reflect the fact that the permitting program will be administered by OCD rather than by EPA. Subsection C modifies certain provision to refer to NMAC provisions in lieu of equivalent CFR provisions, replaces references to EPA Identification Numbers with API Well Numbers, eliminates the option for a permittee-based financial test, and requires that trust agreements used for financial assurance be subject to New Mexico law. The elimination of a permittee-based financial assurance test narrows the scope of available financial assurance options and, therefore, makes the proposed regulations more stringent than EPA's requirements. Subpart D eliminates certain provisions of 40 C.F.R. Part 144, Subpart F that are inapplicable to Class I hazardous waste UIC programs administered by the States. It also eliminates the State assumption of liability provisions in 40 C.F.R. § 144.66, which makes the provisions more stringent by eliminating a permittee's option to rely on the State to assume responsibility for plugging and abandonment under certain circumstances.

20.6.2.5341 NMAC CONDITIONS APPLICABLE TO ALL PERMITS:

Section 20.6.2.5341 NMAC is based on 40 C.F.R. § 144.51. Unless otherwise specified below, Section 20.6.2.5341 NMAC is not materially different from 40 C.F.R. § 144.51, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides a series of conditions that must be included in all permits for Class I hazardous waste injection wells.

Subsection A requires permittees to comply with all permit conditions. This section explains that failure to comply with a permit condition is a violation of the Water Quality Act and provides a grounds for an enforcement action and penalties for noncompliance that may include permit modification or termination.

Subsection B requires permittees to apply for and obtain a permit renewal to continue operations after the expiration of a Class I hazardous waste injection well permit. Permit renewal applications are subject to the requirements of Subpart F of Section 20.6.2.3106 NMAC.

Subsection C provides that the need to halt or reduce injection to remain in compliance with permit conditions is not an available defense in an enforcement action.

Subsection D requires permittees to take all reasonable steps to mitigate any adverse impacts that may occur as the result of a failure to comply with permit conditions.

Subsection E requires permittees to properly operate and maintain all facilities and systems of treatment and control to ensure compliance with permit conditions. This includes providing adequate funding, staffing, training and quality assurance procedures. Permittees are also required to prepare and, if necessary, employ back-up or auxiliary facilities to maintain compliance with permit conditions.

Subsection F states that a Class I hazardous waste injection well permit may be modified, revoked and reissued, or terminated for cause. It further states that all permit conditions continue to apply while a request for modification, revocation and reissuance, or termination is pending. Thus, a permittee must continue to comply with all permit conditions until changes are approved by the Director of OCD.

Subsection G states that a Class I hazardous waste injection well permit does not convey any property rights to the permittee.

Subsection H requires a permittee to respond in a timely fashion to information requests made by the Director of OCD. This includes requests to determine whether cause exists to modify, revoke and reissue, or terminate a Class I hazardous waste injection well permit. It also applies to any records that a permittee is required to keep as a condition of its permit.

Subsection I requires a permit applicant to provide notice of the permit application to the public in accordance with Section 20.6.2.3108 NMAC. In addition, written notice must be mailed,

return receipt requested, to all surface and mineral owners within a half-mile of the proposed well site.

Subsection J requires a permittee to allow the Director of OCD or an authorized representative to enter and inspect any Class I hazardous waste injection well premises. The Director is authorized to enter the well site as well as any facility where records are kept and must be given access to the records and to the facilities themselves. The Director is also authorized to collect samples or monitor operations for the purpose of ensuring compliance with permit conditions.

Subsection K requires permittees to ensure that all samples and measurements are representative and to maintain records of monitoring activities. Records associated with the nature and composition of injected fluids must be maintained until three years after plugging and abandonment of the wells; all other records, including calibration and maintenance records, must be maintained for a period of three years.

Subsection L requires that all applications, reports, and other information submitted to the Director of OCD must be signed and certified in accordance with the requirements in Section 20.6.2.5101 NMAC.

Subsection M require permittees to report, within specific time limits, any planned changes to Class I hazardous waste injection wells, any anticipated noncompliance, periodic monitoring reports, all noncompliance events that may endanger public health or the environment, all other instances of noncompliance, and other information related to incomplete or inaccurate permit applications. Any noncompliance event that may endanger public health or the environment must be reported within 24 hours. Subsection M is more stringent than 40 C.F.R. § 144.51(l) because it imposes additional reporting requirements for noncompliance events that may endanger public health or the environment that are not included in the federal requirements.

Subsection N requires a permittee to provide notice of well completion to the Director of OCD before commencing injection at the well site. The Director of OCD is given an opportunity to inspect the new well and verify compliance with permit conditions before injection begins. Subsection N is more stringent than 40 C.F.R. § 144.51(m) because New Mexico does not allow area permitting of UIC wells.

Subsection O requires a permittee to notify the Director of OCD before conversion or abandonment of a Class I hazardous waste injection well. Subsection O is more stringent than 40 C.F.R. § 144.51(n) because New Mexico does not allow area permitting of UIC wells.

Subsection P requires a permittee to meet the well plugging and abandonment requirements in Section 20.6.2.5209 NMAC when closing a well.

Subsection Q provides deadlines for the submission of a plugging and abandonment report to the Director of OCD after closure of a Class I hazardous waste injection well. The plan must state that the well was plugged in accordance with the well closure plan or provide an explanation of any deviations from the previously submitted well closure plan.

Subsection R requires a permittee to comply with the mechanical integrity provisions in Section 20.6.2.5204 NMAC. If the Director determines that well lacks mechanical integrity, injection

must cease with 48 hours. A permittee then has the option to close the well or to undertake the necessary corrective action to prevent the migration of fluid into groundwater of the state of New Mexico. Injection cannot be restarted until approval is obtained from the Director of OCD.

Subsection S provides requirements for the transfer of a Class I hazardous waste injection well permit. A request for transfer must list all officers, directors, and owners of 25% or greater in the transferee. This provision is more stringent than 40 C.F.R. § 144.51(l)(3) because it requires the Director of OCD's written approval before a permit can be transferred. The transferror's financial assurance will not be released until the transfer is approved by the Director of OCD and the tranferree's financial assurance is in place.

These provisions are intended to ensure that Class I hazardous waste injection wells are constructed, operated, and closed in a manner that is consistent with permit conditions and New Mexico regulations and is protective of human health, the environment, and groundwater of the state of New Mexico.

20.6.2.5342 NMAC ESTABLISHING PERMIT CONDITIONS:

Section 20.6.2.5342 NMAC is based on 40 C.F.R. § 144.52. Section 20.6.2.5342 NMAC is not materially different from 40 C.F.R. § 144.52, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

Subsection A requires the Director of OCD to establish permit conditions for Class I hazardous waste injection wells that are consistent with Sections 20.6.2.3019(H), 20.6.2.5343 (A), 20.6.2.5310, and 20.6.2.5351 through 20.6.2.5353 NMAC. These sections address the duration of permits, schedules of compliance, reporting and recordkeeping, and specific Class I hazardous waste injection well requirements described below. Subsection A also requires the Director of OCD to establish permit conditions for financial assurance for well plugging and abandonment as well as any additional conditions that may be necessary to prevent migration of fluids into groundwater of the state of New Mexico.

Subsection B requires the Director of OCD to establish permit conditions for Class I hazardous waste injection wells that will assure compliance with all applicable requirements in Part 20.6.2 NMAC. An applicable requirement is defined as any requirement which takes effect prior to the final disposition of a permit, including applications for the issuance, modification, or revocation and reissuance of a permit.

Subsection C allows the Director of OCD to incorporate permit conditions expressly in the permit or to incorporate permit conditions by reference using specific citations to the NMAC.

These provisions are intended to ensure that all requirements imposed on Class I hazardous waste injection wells in Part 20.6.2. NMAC are included in an operator's Class I hazardous waste injection well permit.

20.6.2.5343 NMAC SCHEDULE OF COMPLIANCE:

Section 20.6.2.5343 NMAC is based on 40 C.F.R. § 144.53. Section 20.6.2.5343 NMAC is not materially different from 40 C.F.R. § 144.53, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section authorizes the Director of OCD to include in a Class I hazardous waste injection well permit a schedule of compliance leading to full compliance with Part 20.6.2 NMAC. The time for compliance cannot exceed three years from issuance of the permit. If the schedule of compliance exceeds one year, interim targets must be established to ensure the permittee is making progress toward full compliance. This Section also allows the Director of OCD to establish a schedule under which an existing Class I hazardous waste injection well can cease operations through plugging and abandonment rather than complying with new permit conditions. Finally, in cases where a permittee is undecided, the Director of OCD can establish a two-track compliance option that gives the permittee discretion to decide whether to comply with new permit requirements or cease operations and close the well.

These provisions are intended to provide a process through which Class I hazardous waste injection well operators can adjust operations to comply with new regulatory requirements that may be imposed on a Class I hazardous waste injection well.

20.6.2.5344 NMAC REQUIREMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS:

Section 20.6.2.5344 NMAC is based on 40 C.F.R. § 144.54. Section 20.6.2.5344 NMAC is not materially different from 40 C.F.R. § 144.54, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section requires the Director of OCD to include conditions in Class I hazardous waste injection well permits that specify the requirements for monitoring the injection of hazardous waste into the well and for reporting those monitoring results to OCD. Monitoring requirements must address the use, maintenance, installation of monitoring equipment and must also include sufficient detail to ensure that monitored samples are representative of operations at the facility. Reporting requirements must comply with the time intervals provided in Section 20.6.2.5359 NMAC.

These provisions are intended to ensure that monitoring data is accurate and representative of the regulated activity and that OCD is provided with monitoring data in a timely manner.

20.6.2.5345-20.6.2.5350 NMAC [RESERVED]

20.6.2.5351 NMAC APPLICABILITY

Section 20.6.2.5351 NMAC is based on 40 C.F.R. § 146.61(a). Section 20.6.2.5351 NMAC is not materially different from 40 C.F.R. § 146.61(a), with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions. The definitions included in 40 C.F.R. § 146.61(b) can be found in 20.6.2.5301 NMAC.

This Section explains that Sections 20.6.2.5351 though 20.6.25363 NMAC provide the standards and criteria for Class I hazardous waste injection wells. It further explains that, unless otherwise noted, these regulations that are specifically designed for Class I hazardous waste injection wells must be applied in place of any inconsistent provisions found in Sections 20.6.2.5000 through 20.6.2.5299 NMAC.

These provisions are intended to ensure that Class I hazardous waste injection well operators will comply with all applicable provisions designed specifically for Class I hazardous waste injections wells.

20.6.2.5352 NMAC MINIMUM CRITERIA FOR SITING:

Section 20.6.2.5352 NMAC is based on 40 C.F.R. § 146.62. Unless otherwise specified below, Section 20.6.2.5352 NMAC is not materially different from 40 C.F.R. § 146.62, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides the minimum criteria that must be applied when siting a Class I hazardous waste injection well. Subsection A states that Class I hazardous waste injection wells must be sited so that they inject into a formation that is below any formation that contains groundwater of the state of New Mexico and is located within one quarter mile of the well bore.

Subsection B provides a number of criteria that the Director of OCD must use to ensure that the area for a proposed Class I hazardous waste injection well is geologically suitable for the injection of hazardous waste. These include an analysis of the structure and stratigraphic geology, hydrogeology, and seismicity of both the region and the well site. The Director of OCD must also ensure that the local geology is sufficiently understood so that the limits of waste fate and transport can be accurately predicted by modeling.

Subsection C requires that the injection zone have necessary characteristics, including permeability, porosity, thickness, and areal extent to prevent the movement of fluids into groundwater of the state of New Mexico. The well site must also have a confining zone that is free of cracks, faults, or fractures and is capable of preventing vertical propagation of vertical fractures that could allow migration of fluids from the injection zone.

Subsection D requires the owner or operator of a Class I hazardous waste injection well to demonstrate at least one secondary feature to provide further protection of groundwater of the state of New Mexico. These secondary features include a sequence of permeable and less permeable strata between the confining zone and groundwater of the State of New Mexico, a comparison of the piezeometric surfaces of the injection zone and the lowermost groundwater of the state of New Mexico, or a demonstration that there is no groundwater of the state of New Mexico present at the well site.

These provisions are intended to ensure that hazardous waste disposed of at the target location and geologic formation will not migrate from the injection zone into groundwater of the state of New Mexico.

20.6.2.5353 NMAC AREA OF REVIEW

Section 20.6.2.5353 NMAC is based on 40 C.F.R. § 146.63. Section 20.6.2.5353 NMAC is not materially different from 40 C.F.R. § 146.63, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section requires Class I hazardous waste injection wells to employ an area of review that is defined as a two-mile radius around the well bore, unless the Director of OCD determines that a larger area of review is necessary. The area of review is used to evaluate other wells and geologic features that could potentially serve as conduits for migration of fluids out of the injection zone. This is a larger area of review than is used for the permitting of other UIC wells in New Mexico.

This provision is intended to ensure that Class I hazardous waste injection well permit applicants review an area that is sufficiently large to exceed the expected lateral migration or cone of influence from each proposed Class I hazardous waste injection well.

20.6.2.5354 NMAC CORRECTIVE ACTION

Section 20.6.2.5354 NMAC is based on 40 C.F.R. § 146.64. Section 20.6.2.5354 NMAC is not materially different from 40 C.F.R. § 146.64, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section describes the steps that a permit applicant must take to avoid the migration of injected fluid through other existing well bores located within the area of review. Class I hazardous waste injection well permit applicants are required to identify all wells that penetrate the confining zone or injection within the area of review and to determine whether the wells are adequately completed or plugged. Information related to the location, description, and records of plugging or completion for each well must be provided to the Director of OCD in a tabular form. If any wells are determined to be improperly plugged and abandoned, or if such information cannot be determined, the permit applicant must submit for the Director of OCD's approval a corrective action plan that outlines the steps it will take to prevent movement of fluids through such wells. For existing wells, all corrective actions must be completed within two years after issuance of a Class I hazardous waste injection well permit. For new wells, all corrective actions must be completed before injection may commence. The Director of OCD must evaluate adequacy of a corrective action plan based on a series of criteria including the type of fluid to be injected, the geology and hydrology at the site, the history of injection operations, the closure procedures when the wells were closed, the reliability of procedure used to identify abandoned wells, along with other factors that could affect the movement of fluids from the injection zone into groundwater of the United States.

These provisions are intended to ensure that a Class I hazardous waste injection well permit applicant identifies all wells in the area of review that could provide a path for the movement of fluids out of the injection zone and takes any corrective action necessary to isolate the injection zone.

20.6.2.5355 NMAC CONSTRUCTION REQUIREMENTS:

Section 20.6.2.5355 NMAC is based on 40 C.F.R. § 146.65. Section 20.6.2.5355 NMAC is not materially different from 40 C.F.R. § 146.65, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides the requirements that a Class I hazardous waste injection well permittee must comply with when constructing a well.

Subsection A requires that Class I hazardous waste injection wells must be constructed and completed to prevent the movement of fluids from the injection zone to groundwater of the state of New Mexico. In addition, wells must be constructed in a manner that allow for the use of testing devices, and workover tools as well as the continuous monitoring of injection tubing and long string casing.

Subsection B requires that the permittee ensure compatibility between the injection fluids and all materials with which such fluids will come into contact. Compatibility will be evaluated based on standards developed by the American Petroleum Institute, ASTM, or similar organizations.

Subsection C requires that well casing and cementing must be designed to prevent movement of fluids into groundwater of the state of New Mexico during the life of the Class I hazardous waste injection well (including post-closure care) and provides a series of criteria that the Director of OCD must consider when evaluating the sufficiency of the well casing and cementing program. It requires a surface casing string, at least one long string casing into the injection zone, cementing between casings, and requirements to ensure that well integrity will be maintained for the life of the well.

Subsection D provides a number of criteria that the Director of OCD must consider when establishing requirements for the tubing and packer through which fluids will be injected. These criteria include depth, characteristics of the injection fluid, injection and annular pressure, injection rate, and the size and strength of the casing and tubing. It also authorizes the Director of OCD to approve a fluid seal if certain criteria are met.

These provisions are intended to ensure that the design and construction of a Class I hazardous waste well will include all of necessary components to prevent migration of fluid from the injection zone or the well bore into groundwater of the state of New Mexico.

20.6.2.5356 NMAC LOGGING, SAMPLING, AND TESTING PRIOR TO WELL OPERATION:

Section 20.6.2.5356 NMAC is based on 40 C.F.R. § 146.66. Section 20.6.2.5356 NMAC is not materially different from 40 C.F.R. § 146.66, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides a series of tests that a Class I hazardous waste injection well permittee must conduct prior to commencing injection.

Subsection A requires a Class I hazardous waste injection well permittee to conduct a series of logs and tests during the well construction process to determine the geologic and hydrologic features of the well bore. Logs and tests must be run after installation of the surface casing and the long string casing. In addition, prior to well operation, the permittee must conduct a mechanical integrity test that consists of a pressure test, radioactive tracer survey, temperature or noise log, and any other test required by the Director of OCD.

Subsection B requires a permittee to collect whole cores or sidewall cores from the confining and injection zones, along with formation fluid samples from the injection zone. The Director of OCDapproves the substitution of representative cores from nearby wells if the well owner or operator can demonstrate that core retrieval is not possible.

Subsection C requires the permittee to record the temperature, pH, conductivity, pressure, and static fluid level of the injection zone fluid.

Subsection D requires the permittee to determine the fracture pressure and other chemical and physical characteristics of the injection and confining zones. The permittee must also determine the physical and chemical characteristics of the formation fluids in the injection zone.

Subsection E requires the permittee to conduct a pump test or injectivity test to verify the characteristics of the injection zone prior to operation of the well.

Subsection F requires the permittee to provide notice to the Director of OCD before conducting tests under Section 20.6.2.5351 through 20.6.2.5363 NMAC to allow the Director of OCD an opportunity to witness such tests. The notice must be provided at least 30 days before testing begins and must include a schedule of all logging and testing activities.

These provisions are intended to ensure that fluids will not migrate from the injection zone or well bore by verifying information about the suitability of the injection zone, confining zone, and well bore prior to operation of a Class I hazardous waste injection well.

20.6.2.5357 NMAC OPERATING REQUIREMENTS:

Section 20.6.2.5357 NMAC is based on 40 C.F.R. § 146.67. Section 20.6.2.5357 NMAC is not materially different from 40 C.F.R. § 146.67, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides a series of requirements that Class I hazardous waste injection well permittees must comply with during operation of the well.

Subsection A requires permittees to maintain an injection pressure at the wellhead that will avoid initiation of new fractures or propagation of existing fractures in the injection zone. The permittee must also ensure that the injection pressure will not initiate new fractures or propagate existing fractures in the confining zone above the injection zone.

Subsection B prohibits injection between the outermost well casing and the well bore in order to protect groundwater of the state of New Mexico.

Subsection C provides requirements for maintaining annulus pressure in the well to allow monitoring for leaks in the injection tubing. It also requires that the fluid in the annulus be noncorrosive.

Subsection D requires the permittee to maintain the mechanical integrity of the well at all times.

Subsection E requires the Director of OCD to impose additional permit requirements for Class I hazardous waste injection wells that may inject wastes that have the potential to react with the injection formation to generate gases. Conditions can include limits on temperature and pH and other procedures to avoid pressure imbalances.

Section F requires the permittee to install continuous monitoring systems for injection pressure, flow rate, volume, and temperature of the injection fluid and annulus pressure. The permittee must also install an automatic alarm and automatic shut-off system that is triggered (or certify the presence of a trained operator to respond) when pressures, flow rates, and other parameters fall outside of acceptable ranges.

If an automatic alarm or shutdown is triggered, Subsection G requires the permittee to investigate the cause of the alarm or shutdown. If the well lacks mechanical integrity, the permittee must cease operations, determine whether any leaks are present, and provide notice to the Director of OCD within 24 hours.

If a loss of mechanical integrity is discovered at a Class I hazardous waste injection well, Subsection H requires the permittee to immediately cease operations and take reasonable steps to determine whether hazardous waste was injected into any unauthorized zone. The permittee must also provide notice to the Director of OCD of the loss of mechanical integrity, and restore and demonstrate mechanical integrity of the well prior to resuming injection.

If the permittee obtains evidence of a release of injected waste outside of the injection zone, Subsection I requires the permittee to cease operations, notify the Director of OCD, characterize the release, and, if necessary, remediate the release and notify the public of any release into groundwater of the state of New Mexico. Injection may resume after the permittee demonstrates that injection will not endanger groundwater of the state of New Mexico.

Subsection J requires the permittee of a Class I hazardous waste injection well to obtain approval from the Director of OCD prior to conducting a well workover.

These provisions are intended to ensure that wells are operated in a manner that prevents migration of injected fluids out of the injection zone and to provide protocol to protect groundwater water of the state of New Mexico in the event that an incident occurs at the well site.

20.6.2.5358 NMAC TESTING AND MONITORING REQUIREMENTS:

Section 20.6.2.5358 NMAC is based on 40 C.F.R. § 146.68. Section 20.6.2.5358 NMAC is not materially different from 40 C.F.R. § 146.68, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides testing and monitoring requirements that Class I hazardous waste injection well permittees must comply with during operation of the well.

Subsection A requires the permittee to develop and follow a waste analysis plan to obtain a detailed physical and chemical analysis of representative samples of the injected waste. The plan must specify the parameters to be measured, the test methods that will be applied, and the sampling measures used to ensure representativeness. The permittee must repeat this analysis on a regular basis as required by the waste analysis plan and the Director of OCD.

Subsection B requires the permittee to demonstrate to the Director of OCD that the injected waste stream and any reaction products will not alter the chemical or physical properties of the injection or confining zone in a manner that would threaten the minimum siting criteria in Section 20.6.2.5352 NMAC.

Subsection C requires the permittee to demonstrate that all well materials that will come into contact with the injection fluid will be constructed of compatible materials. It also requires the Director of OCD to impose additional corrosion monitoring requirements for Class I hazardous waste injection wells that will dispose of corrosive waste.

Subsection D requires the permittee to conduct periodic mechanical integrity tests during operation of the well. Mechanical integrity tests must evaluate the long string casing, injection tube, annular seal, and bottom hole cement. The permittee is also required to run casing inspection logs whenever the permittee conducts a workover in which the injection string is pulled.

Subsection E requires the permittee to annual ambient monitoring to assess the potential for fluid movement from the well or injection zone. The monitoring program must be based on a site-specific assessment of potential fluid movement from the well or injection zone. The Director of OCD has discretion to require additional monitoring including monitoring of pressure in formations above the confining zone and monitoring of the groundwater quality in aquifers above the confining zone.

Subsection F authorizes the Director of OCD to require seismicity monitoring if the Class I hazardous waste injection well has the capacity to cause seismic disturbances.

These provisions are intended to require permittees to collect sufficient information during the operation of Class I hazardous waste injection wells to ensure that injected fluids do not migrate out of the injection zone into groundwater of the state of New Mexico.

20.6.2.5359 NMAC REPORTING REQUIREMENTS:

Section 20.6.2.5359 NMAC is based on 40 C.F.R. § 146.69. Section 20.6.2.5359 NMAC is not materially different from 40 C.F.R. § 146.69, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section provides reporting requirements that Class I hazardous waste injection well permittees must comply with during operations. Permittees are required to submit quarterly reports that contain information regarding maximum injection pressure, volume of fluid injected,

the characteristics of the injected fluids and the results of any required monitoring. The permittee must also report any event that exceeds operating parameters or triggers an alarm or shutdown. The permittee must also comply with reporting requirements for mechanical integrity tests, well workovers, and other tests of the injection well required by the Director of OCD.

These provisions are intended to ensure that the Director of OCD is provided with necessary information about each Class I hazardous waste injection well in a timely manner.

20.6.2.5360 NMAC INFORMATION TO BE EVALUATED BY THE DIRECTOR:

Section 20.6.2.5360 NMAC is based on 40 C.F.R. § 146.70. Section 20.6.2.5360 NMAC is not materially different from 40 C.F.R. § 146.70, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section describes the information that the Director of OCD must consider when evaluating the design, construction, operation, and closure of Class I hazardous waste injection wells.

Subsection A describes a series of criteria and documents that the Director of OCD must review and evaluate before issuing a Class I hazardous waste injection well permit to ensure that the permittee will meet the requirements of Sections 20.6.2.5000 through 20.6.2.5399 NMAC. These include maps, cross-sections and tabulations showing wells located within the area of review, groundwater of the state of New Mexico, and geologic features at the proposed well site. The permit applicant must also provide information on the proposed construction and operation of the Class I hazardous waste injection well.

Subsection B describes the information that Class I hazardous waste injection well permittee must include in a well completion report before the Director of OCD can grant approval for operation of a Class I hazardous waste injection well. These include logging and testing data, proposed operating parameters, and the status of corrective action activities. The permittee must also provide evidence that that is has obtained a no migration exclusion from EPA Region 6.

Subsection C requires the Director of OCD to review the information regarding well closure and post-closure care in Subsection A(4) of Section 20.6.2.6361 NMAC and Subsection A of Section 20.6.2.5362 NMAC before granting approval of the plugging and abandonment of a Class I hazardous waste injection well.

Subsection D requires that the permittee of a Class I hazardous waste injection well must certify that it has established a program to reduce the volume and toxicity of the injected waste and that injection is the method of disposal that minimizes the threat to human health and the environment.

These provisions are designed to ensure that the Director of OCD has the necessary information to determine that Class I hazardous waste injection wells will be sited, constructed, operated, and closed in a manner that is protective of human health and the environment and that injected wastes will not migrate from the injection zone or well bore into groundwater of the state of New Mexico.

20.6.2.5361 NMAC CLOSURE:

Section 20.6.2.5361 NMAC is based on 40 C.F.R. § 146.71. Section 20.6.2.5361 NMAC is not materially different from 40 C.F.R. § 146.71, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section describes the requirements that Class I hazardous waste injection well permittees must comply with regarding closure of wells after the injection ceases.

Subsection A requires a permit applicant to submit and revise as necessary a well closure plan, which must be included as a permit condition for any Class I hazardous waste injection well. The plan must identify the type of number of plugs to be used, the method of placement of the plugs, any wells casing or other materials that will remain in the well bore, testing and measurement procedures, as well as other criteria. Subsection A also requires a permittee to maintain financial assurance that is sufficient to cover the cost of well closure. Finally, it also provides a procedure for Class I hazardous waste injection well permittees to temporarily cease operations for up to two years while keeping a well open.

Subsection B requires a permittee to provide the Director of OCD with at least 60 days' notice prior to closing a Class I hazardous waste injection well.

Subsection C requires a Class I hazardous waste injection well permittee to submit a closure report to the Director of OCD after closing a well. The report must be certified by the permittee and by the person who performed the closure operations. The report must describe any deviations from the previously filed well closure plan.

Subsection D provides the standards that a Class I hazardous waste injection well permittee must meet when closing a well. These standards include an analysis of pressure decay over time, mechanical testing of long string casing and cement that will remain in the well bore, flushing with a buffer fluid, and the placement of cement plugs.

These provisions are intended to ensure that Class I hazardous waste injection wells are properly closed so that there will be no migration of fluids from the injection zone when injection ceases.

20.6.2.5362 NMAC POST-CLOSURE CARE:

Section 20.6.2.5362 NMAC is based on 40 C.F.R. § 146.72. Section 20.6.2.5362 NMAC is not materially different from 40 C.F.R. § 146.72, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section describes the requirements that Class I hazardous waste injection well permittees must comply with regarding post-closure care of wells after the injection ceases.

Subsection A requires a permittee to prepare, modify as necessary, and provide financial assurance for a post-closure care plan. The plan must include information regarding the pressure before and after injection and the projected decay of pressure in the injection zone, the predicted position of the waste front at closure, and the status of any required cleanup efforts. The

obligation to implement the post-closure care plan survives termination of the Class I hazardous waste injection well permit.

Subsection B requires a permittee to complete any cleanup activities required under Section 20.6.2.5354 NMAC and to conduct groundwater monitoring until the well's cone of influence no longer intersects the base of the lowermost groundwater of the state of New Mexico. The permittee must also provide notice of the injection and confining zones to state and local agencies with authority over drilling activities, and retain records of injected fluids for three years after well closure.

Subsection C requires the permittee to record a notation in the deed of all surface and subsurface owners on whose property the Class I hazardous waste injection well is located to inform future purchasers that hazardous waste was injected at the site. The notation must state that the property was used to manage hazardous waste, provide contact information to government agencies with information regarding the Class I hazardous waste injection well, and must describe the materials that were disposed of, along with the identity of the formation into which they were injected and the time period over which injection occurred.

These provisions are intended to prevent migration of fluids from the injection zone into groundwater of the state of New Mexico both through post-closure care of the well and by providing notice to future parties that hazardous waste was injected.

20.6.2.5363 NMAC FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE

Section 20.6.2.5363 NMAC is based on 40 C.F.R. § 146.73. Section 20.6.2.5363 NMAC is not materially different from 40 C.F.R. § 146.73, with the exception of substituted cross references to NMAC provisions in lieu of equivalent cross references to federal CFR provisions.

This Section requires permittees to demonstrate and maintain financial responsibility for the costs of post-closure care using one of the instruments specified in Section 20.6.2.5320 NMAC. This obligation survives termination of a Class I hazardous waste injection well permit.

These provisions are intended to ensure that regardless of the solvency of the Class I hazardous waste injection well permittee, sufficient funds are set aside for post-closure care to prevent the movement of fluids from the injection zone into groundwater of the state of New Mexico.

Exhibit 1 - Cross Reference Table
for Proposed NM Class I Hazardous Waste UIC Program Rules—New Rule Sections

CFR Cite/Title	NMAC Cite	Notes
40 CFR Part 144 Subpart A - General Provisions (one section)		
§ 144.14 Requirements for wells injecting hazardous waste.	20.6.2.5310	Federal text adopted with conforming changes
40 CFR Part 144 Subpart E - Permit Conditions (all sections)		
§ 144.51 Conditions applicable to all permits.	20.6.2.5341	Federal text adopted with conforming changes
§ 144.52 Establishing permit conditions.	20.6.2.5342	Federal text adopted with conforming changes
§ 144.53 Schedule of compliance.	20.6.2.5343	Federal text adopted with conforming changes
§ 144.54 Requirements for recording and reporting of monitoring results.	20.6.2.5344	Federal text adopted with conforming changes
§ 144.55 Corrective action.	N/A	N/A
40 CFR Part 144 Subpart F - Financial Responsibility: Class I Hazardous Waste Injection Wells (all sections)		
§ 144.60 Applicability.	20.6.2.5320	Incorporated By Reference
§ 144.61 Definitions of terms as used in this subpart.	20.6.2.5320	Incorporated By Reference
§ 144.62 Cost estimate for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.63 Financial assurance for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.64 Incapacity of owners or operators, guarantors, or financial institutions.	20.6.2.5320	Incorporated By Reference
§ 144.65 Use of State-required mechanisms.	N/A	N/A
§ 144.66 State assumption of responsibility.	N/A	N/A
§ 144.70 Wording of the instruments.	20.6.2.5320	Incorporated By Reference
40 CFR Part 146 Subpart G - Criteria and Standards Applicable to Class I Hazardous Waste Injection Wells (all sections)		
§ 146.61 Applicability.	20.6.2.5351	Federal text adopted with conforming changes
§ 146.62 Minimum criteria for siting.	20.6.2.5352	Federal text adopted with conforming changes
§ 146.63 Area of review.	20.6.2.5353	Federal text adopted with conforming changes
§ 146.64 Corrective action for wells in the area of review.	20.6.2.5354	Federal text adopted with conforming changes
§ 146.65 Construction requirements.	20.6.2.5355	Federal text adopted with conforming changes

CFR Cite/Title	NMAC Cite	Notes
§ 146.66 Logging, sampling, and testing prior to new well operation.	20.6.2.5356	Federal text adopted with conforming changes
§ 146.67 Operating requirements.	20.6.2.5357	Federal text adopted with conforming changes
§ 146.68 Testing and monitoring requirements.	20.6.2.5358	Federal text adopted with conforming changes
§ 146.69 Reporting requirements.	20.6.2.5359	Federal text adopted with conforming changes
§ 146.70 Information to be evaluated by the Director.	20.6.2.5360	Federal text adopted with conforming changes
§ 146.71 Closure.	20.6.2.5361	Federal text adopted with conforming changes
§ 146.72 Post-closure care.	20.6.2.5362	Federal text adopted with conforming changes
§ 146.73 Financial responsibility for post-closure care.	20.6.2.5363	Federal text adopted with conforming changes

EXHIBIT 2 - COMPARISON OF PROPOSED WATER CONSERVATION RULE SECTIONS 20.6.2.5300 THROUGH 20.6.2.5399 AGAINST U.S. EPA REQUIREMENTS

The following shows a redline comparison of proposed Sections 20.6.2.5300 through 20.6.2.5399 NMAC against the minimum U.S. EPA requirements set forth in the Code of Federal Regulations. Any text not in redline is identical to the federal text, and any text in redline represents additional text and other changes. Also, footnotes have been added to explain some of the NMAC provisions, including differences between the U.S. EPA regulations and the proposed rule.

20.6.2.5300[1]

REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in Sections 20.6.2.5300 through 20.6.2.5399 NMAC, Class I hazardous waste wells are subject to the minimum permit requirements for all Class I- wells in Sections 20.6.2.5000 through 20.6.2.5299 NMAC, in addition to the requirements of Sections 20.6.2.5300 through 20.6.2.5399 NMAC. To the extent any requirement in Sections 20.6.2.5300 through 20.6.2.5399 NMAC conflicts with a requirement of Sections 20.6.2.5000 through 20.6.2.5299 NMAC, Class I hazardous waste injection wells must comply with Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

B. Class I hazardous waste injection wells are only authorized for use by petroleum refineries for the waste generated by the refinery ("generator").

C. The New Mexico energy, minerals and natural resources department, oil conservation division will administer and oversee all permitting of Class I hazardous waste wells pursuant to Sections 20.6.2.5300 through 20.6.2.5399 NMAC.

20.6.2.5301

DEFINITIONS As used in Sections 20.6.2.5300 through 20.6.2.5399 NMAC:

A. "**cone of influence**" means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into groundwater of the State of New Mexico.

B. "**director**" means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee.[2]

C. "**existing well**" means a Class I hazardous waste injection well which has become a Class I hazardous waste injection well as a result of a change in the definition of the injected

---

[1] This provision is not in the CFR per se but is a necessary predicate to the CFR provisions and to tie the Class I hazardous well provisions to the pre-existing state program regulations.

[2] This addition is necessary because the term is not otherwise defined (Defined in 20.6.2.7 as secretary or director).

waste which would render the waste hazardous under Section 20.4.1.200 NMAC (incorporating 40 C.F.R. § 261.3).[3]

D. "**groundwater of the State of New Mexico**" means, consistent with Section 20.6.2.5001 NMAC, an aquifer that contains ground water having a TDS concentration of 10,000 mg/l or less.[4]

E. "**injection interval**" means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

F. "**new well**" means any Class I hazardous waste injection well which is not an existing well.

G. "**transmissive fault or fracture**" is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

20.6.2.5302

FEES FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.3114 NMAC.

A. *Filing Fee.* Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a filing fee of $100 to the Water Quality Management Fund at the time the permit application is submitted. The filing fee is nonrefundable.

B. *Permit Fee.*

(1) Every facility submitting a discharge permit application for approval of a UIC Class I hazardous waste injection well shall pay a permit fee of $30,000 to the Water Quality Management Fund. The permit fee may be paid in a single payment at the time of permit approval or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit approval. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit application review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) Facilities applying for permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

---

[3] New Mexico has incorporated 40 CFR 261 by reference. See 20.4.1.200, 201. For clarity the CFR citation is retained. The provision at issue is entitled "Definition of hazardous waste."

[4] "Waters of the State of New Mexico" is a term used by the State in lieu of underground source of drinking water. It is more protective than USDW because it includes both drinking water and agricultural uses.

C. *Annual Administration Fee.* Every facility that receives a UIC Class I hazardous waste injection well permit shall pay an annual administrative fee of $20,000 to the Water Quality Management Fund. The initial administrative fee shall be remitted one year after commencement of disposal operations pursuant to the permit. Subsequent administrative fees shall be remitted annually thereafter.

D. *Renewal Fee.*

(1) Every facility submitting a discharge permit application for renewal of a UIC Class I hazardous waste injection well shall pay a renewal fee of $10,000 to the Water Quality Management Fund. The renewal fee may be paid in a single payment at the time of permit renewal or in equal installments over the term of the permit. Installment payments shall be remitted yearly, with the first installment due on the date of permit renewal. Subsequent installment permits shall be remitted yearly thereafter. The permit or permit renewal review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

(2) The Director may waive or reduce fees for discharge permit renewals which require little or no cost for investigation or issuance.

E. *Modification Fees.*

(1) Every facility submitting an application for a discharge permit modification of a UIC Class I hazardous waste injection well will be assessed a filing fee plus a modification fee of $10,000 to the Water Quality Management Fund.

(2) Every facility submitting an application for other changes to a UIC Class I hazardous waste injection well discharge permit will be assessed a filing fee plus a minor modification fee of $1,000 to the Water Quality Management Fund.

(3) Applications for both renewal and modification shall pay a filing fee plus renewal fee.

(4) If the Director requires a discharge permit change as a component of an enforcement action, the facility shall pay the applicable modification fee. If the Director requires a discharge permit change outside the context of an enforcement action, the facility shall not be assessed a fee.

(5) The Director may waive or reduce fees for discharge permit changes which require little or no cost for investigation or issuance.

F. *Financial Assurance Fees.*

(1) Facilities with approved UIC Class I hazardous waste injection well permits shall pay the financial assurance fees specified in Section 20.6.2.3114, Table 2 NMAC.

(2) Facilities relying on the corporate guarantee for financial assurance shall pay an additional fee of $ 5,000 to the Water Quality Management Fund.

20.6.2.5303

CONVERSION OF EXISTING INJECTION WELLS:

An existing Class I non-hazardous waste injection well may be converted to a Class I hazardous waste injection well provided the well meets the modeling, design, compatibility, and other requirements set forth in Sections 20.6.2.5300 through 20.6.2.5399 NMAC and the permittee receives a Class I hazardous waste permit pursuant to those Sections.

20.6.2.5304 – 20.6.2.5309: [RESERVED]

~~§ 144.14~~20.6.2.5310

REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE REQUIRED TO BE ACCOMPANIED BY A MANIFEST~~.~~:

~~(a)~~ **A.** *Applicability*. The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also ~~§144.13~~Subsection A(3)(b) of Section 20.6.2.5004 NMAC[5].)

~~(b)~~ **B.** *Authorization*. The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for authorization to inject as specified in ~~§144.31~~Section 20.6.2.5102 NMAC[6] within 6 months after the approval or promulgation of the State UIC program.

~~(c)~~ **C.** *Requirements*. In addition to complying with the applicable requirements of this ~~p~~Part[7] ~~and 40 CFR part 146~~, the owner or operator of each facility meeting the requirements of Subsection B~~paragraph (b)~~ of this section, shall comply with the following:

(1) *Notification*. The owner or operator shall comply with the notification requirements of 42 U.S.C. § 6930~~section 3010 of Public Law 94-580~~.[8]

(2) *Identification number*. The owner or operator shall comply with the requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.11)[9].

---

[5] § 144.13 is entitled "Prohibition of Class IV wells;" and 20.6.2.5004 NMAC in general, and A(3)(b) specifically, are the state corollary Class IV prohibitions.

[6] § 144.31 is entitled "Application for a permit; authorization for a permit." There is no complete state corollary because 20.6.2.5102 NMAC, which covers the same topic, does not cover Class I hazardous waste wells. In order to allow this cross reference to work, 20.6.2.5102 NMAC has been amended to include hazardous waste wells.

[7] "This Part" includes all of 20.6.2 NMAC and would cover all of New Mexico's UIC program which, by law, must be a stringent as the requirements EPA imposes under 40 CFR Parts 144 and 146. Therefore, it is the appropriate corollary to Part 146

[8] This is the federal provision for listing materials as hazardous waste (using the U.S.C. rather than Public Law citation). There is no state corollary to EPA's listing authority, so the federal provision has been retained.

(3) *Manifest system.* The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.71).[10]

(4) *Manifest discrepancies.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.72).[11]

(5) *Operating record.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Sections 264.73(a), (b)(1), and (b)(2)).[12]

(6) *Annual report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).[13]

(7) *Unmanifested waste report.* The owner or operator shall comply with Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.75).[14]

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of Section 20.4.1.500 NMAC (incorporating 40 CFR Section 264.16).[15]

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the Director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in ~~§144.52(a)(6)~~Section 20.6.2.5209 NMAC.[16]

20.6.2.5311 – 20.6.2.5319: [RESERVED]

(cont.)

[9] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Identification number."

[10] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Use of manifest system."

[11] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Manifest discrepancies."

[12] New Mexico has incorporated 40 CFR 264 by reference. See20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Personnel training."

[13] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Biennial report."

[14] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Biennial report."

[15] New Mexico has incorporated 40 CFR 264 by reference. See 20.4.1.500, 501. For clarity the CFR citation is retained. The provision at issue is entitled "Personnel training."

[16] The nearest state corollary to 40 CFR § 144.52 is 20.6.2.5209 NMAC. That section was amended to cover Class I hazardous wells.

20.6.2.5320 ADOPTION OF 40 CFR PART 144, SUBPART F (FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS). Except as otherwise provided, the regulations of the EPA set forth in 40 CFR Part 144, Subpart F [insert current effective date] are hereby incorporated by reference.

20.6.2.5321 MODIFICATIONS, EXCEPTIONS, AND OMISSIONS. Except as otherwise provided, the following modifications, exceptions, and omissions are made to the incorporated federal regulations.

A. The following terms defined in 40 CFR Section 144.61 have the meanings set forth herein, in lieu of the meaning set forth in 40 CFR Section 144.61:

(1) "plugging and abandonment plan" means the plan for plugging and abandonment prepared in accordance with the requirements of 20.6.2.5341 NMAC.

B. The following terms not defined in 40 CFR Part 144, Subsection F have the meanings set forth herein when the terms are used in this part:

(1) "administrator," "regional administrator" and other similar variations means the Director of the New Mexico energy, minerals and natural resources department, oil conservation division or his/her designee;

(2) "United States Environmental Protection Agency" or "EPA" means New Mexico energy, minerals and natural resources department, oil conservation division or OCD, except when used in 40 CFR Section 144.70(f).

C. The following provisions of 40 CFR Part 144, Subpart F are modified in Section 20.6.2.5321 NMAC:

(1) cross references to 40 CFR Part 144 shall be replaced by cross references to Sections 20.6.2.5300 through 20.6.2.5399 NMAC

(2) the cross reference to §§ 144.28 and 144.51 in Section 144.62(a) shall be replaced by a cross reference to Section 20.6.2.5341 NMAC;

(3) the cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H shall be modified to include cross references to 40 CFR Parts 264, Subpart H and 265, Subpart H and Sections 20.4.2.500 and 20.4.2.600 NMAC.

(4) references to EPA Identification Numbers in financial assurance documents shall be replaced by references to API Well Numbers (US Well Numbers);

(5) the first sentence of 40 CFR Section 144.63(f)(1) shall be replaced with the following sentence: "An owner or operator may satisfy the requirements of this section by obtaining a guarantee from a corporate parent that meets the requirements of 40 CFR Section 144.63(f)(10), including the guarantor meeting the requirements for the owner or operator under the financial test specified in this paragraph."

(6) trust agreements prepared in accordance with 40 CFR Section 144.70(a) must state that they will be administered, construed, and enforced according to the laws of New Mexico;

(7) surety companies issuing bonds prepared in accordance with 40 CFR Section 144, Subpart F must be registered with the New Mexico Office of Superintendent of Insurance;

D. The following provisions of 40 CFR Part 144, Subpart F are omitted from Section 20.6.2.5320 NMAC:

(1) Section 144.65;

(2) Section 144.66;

(3) the third sentence in 40 CFR Section 144.63(h);

20.6.2.5322 – 20.6.2.5340 [RESERVED]

~~§~~ **20.6.2.5341~~144.51~~**

CONDITIONS APPLICABLE TO ALL PERMITS:~~:~~

The following conditions apply to all Class I hazardous[17] ~~UIC~~ permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations ~~(or the corresponding approved State regulations)~~[18] must be given in the permit.

~~(a)~~ **A.** *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the New Mexico Water Quality Act ~~Safe Drinking Water Act~~ and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in ~~an emergency permit under § 144.34~~a variance issued under Section 20.6.2.1210 NMAC.[19]

~~(b)~~ **B.** *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a ~~new~~ permit renewal pursuant to Subpart F of Section 20.6.2.3106 NMAC.[20]

---

[17] The rules at issue only apply to Class I hazardous waste well permits.

[18] "These regulations" now refer to the approved State regulations.

[19] There is no exact state corollary to this CFR provision. The variance provision in 20.6.2.1210 appears to be the closest state corollary to this CFR provision, and we would argue is its functional equivalent.

[20] The purpose of this addition is to make clear that timely renewal applications can authorize the permittee to continue to operate after the expiration date of the original permit.

~~(c)~~ **C.** *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

~~(d)~~ **D.** *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

~~(e)~~ **E.** *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

~~(f)~~ **F.** *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

~~(g)~~ **G.** *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

~~(h)~~ **H.** *Duty to provide information.* The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

I. *Duty to provide notice.* Public notice, when required, shall be provided as set forth in 20.6.2.3108 NMAC except that the following notice shall be provided in lieu of the notice required by 20.6.2.3108(B)(2):

A written notice must be sent by certified mail, return receipt requested, to all surface and mineral owners of record within a ½ mile radius of the proposed well or wells.

~~(i)~~ **J.** *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Sections 20.6.2.5300 through 20.6.2.5399 NMAC~~SDWA~~,[21] any substances or parameters at any location.

~~(j)~~ **K.** *Monitoring and records.*

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and

(ii) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under ~~§ 144.52(a)(6)~~Subsection A(6) of Section 20.6.2.5342 NMAC[22], or under ~~part 146 subpart G~~Sections 20.6.2.5351 through 20.6.2.5363 NMAC[23] as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period. ~~For EPA administered programs, the owner or operator shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.~~[24]

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

---

[21] Reference to the state rules is necessary in lieu of the SDWA.

[22] Internal cross reference (see cross reference table for details).

[23] Internal cross reference (see cross reference table for details). The cited sections are the corollary to Subpart G.

[24] This sentence is unnecessary as the Class I hazardous program will be administered by New Mexico, not EPA.

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

~~(4) Owners or operators of Class VI wells shall retain records as specified in subpart H of part 146, including §§ 146.84(g), 146.91(f), 146.92(d), 146.93(f), and 146.93(h) of this chapter.~~[25]

~~(k)~~ **L.** *Signatory requirement.* All applications, reports, or information submitted to the Director~~Administrator~~ shall be signed and certified. (See Subsection G of 20.6.2.5101 NMAC~~§ 144.32~~.[26])

~~(l)~~ **M.** *Reporting requirements—*

(1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

~~(3) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act. (See § 144.38); in some cases, modification or revocation and reissuance is mandatory.)~~[27]

(43) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(~~5~~4) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(~~6~~5) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to groundwater of the State of New Mexico~~a USDW~~; or

---

[25] Section 144.51(j)(4) is unnecessary as it applies to Class VI wells.

[26] Section 144.32 is entitled "Signatories to permit applications and reports." Section 20.6.2.5101 is the closest state corollary to the CFR provision and has been amended to apply to Class I hazardous waste wells and to apply the certification requirement to reports.

[27] Section 144.51(l)(3), "Transfers," has been replaced with 20.6.2.5341(R) below.

(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between groundwater of the State of New Mexico~~USDWs~~. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause~~;~~, the area affected by the noncompliance, including any groundwater of the State of New Mexico~~underground sources of drinking water~~; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; the date and time the permittee became aware of the noncompliance; and steps taken or planned to reduce, remediate, eliminate, and prevent reoccurrence of the noncompliance.

(~~7~~6) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under ~~paragraphs (l)~~ Subsections M(34), (~~4~~5), and (56) of this ~~s~~Section, at the time monitoring reports are submitted. The reports shall contain the information listed in ~~paragraph~~ Subsection M(~~l~~)(~~6~~5)[28] of this ~~s~~Section.

(~~8~~7) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

~~(m)~~ **N.** *Requirements prior to commencing injection.* ~~Except for all new wells authorized by an area permit under § 144.33(e), a~~[29] A new injection well may not commence injection until construction is complete, and

(1) The permittee has submitted notice of completion of construction to the Director; and

(2)

(i) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(ii) The permittee has not received notice from~~form~~ the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in ~~paragraph (m)~~Subsection N(1) of this ~~s~~Section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

[28] Subsection references were updated to reflect deletion of Subsection L(3), above.

[29] The state has not adopted area well permitting and thus this clause is unnecessary.

~~(n)~~ **O.** The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well. ~~or in the case of area permits before closure of the project.~~[30]

~~(o)~~ **~~O~~P.** ~~A Class I, II or III permit shall include and a Class V permit may include conditions which meet the applicable requirements of § 146.10 of this chapter to ensure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of § 146.10 of this chapter, the Director shall incorporate the plan into the permit as a permit condition. Where the Director's review of an application indicates that the permittee's plan is inadequate, the Director may require the applicant to revise the plan, prescribe conditions meeting the requirements of this paragraph, or deny the permit. A Class VI permit shall include conditions which meet the requirements set forth in § 146.92 of this chapter. Where the plan meets the requirements of § 146.92 of this chapter, the Director shall incorporate it into the permit as a permit condition. For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment.~~The permittee shall meet the requirements of Section 20.6.2.5209 NMAC.[31]

~~(p)~~ **~~P~~Q.** *Plugging and abandonment report.* ~~For EPA-administered programs, w~~Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the ~~Regional Administrator~~Director. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to the ~~Regional Administrator~~Director; or

(2) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the ~~regional administrator~~Director, specifying the differences.

~~(q)~~ **~~Q~~R.** *Duty to establish and maintain mechanical integrity.*

(1) The permittee shall meet the requirements of Section 20.6.2.5204 NMAC.[32] ~~The owner or operator of a Class I, II, III or VI well permitted under this part shall establish mechanical integrity prior to commencing injection or on a schedule determined by the Director. Thereafter the owner or operator of Class I, II, and III wells must maintain mechanical integrity as defined in § 146.8 of this chapter and the owner or operator of Class VI wells must maintain mechanical integrity as defined in § 146.89 of this chapter. For EPA-administered programs, the Regional Administrator may require by written~~

---

[30] The state has not adopted area well permitting and thus this clause is unnecessary.

[31] Section 20.6.2.5209 is the State corollary and has been amended to cover Class I hazardous waste wells.

[32] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells.

~~notice that the owner or operator comply with a schedule describing when mechanical integrity demonstrations shall be made.~~

(2) When the Director determines that a Class I hazardous~~, II, III or VI~~ well lacks mechanical integrity pursuant to Section 20.6.2.5204 NMAC[33] ~~§ 146.8 or § 146.89 of this chapter for Class VI of this chapter~~, he/she shall give written notice of his/her determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of Section 20.6.2.5209 NMAC[34] ~~§ 146.10 of this chapter~~ or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between groundwater of the State of New Mexico~~underground sources of drinking water~~ caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to Sections 20.6.2.5204 and 20.6.2.5358 NMAC[35] ~~§ 146.8 of this chapter~~.

(3) The Director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Subsection A of Section 20.6.2.5204 NMAC[36] ~~§ 146.8(a)(1) of this chapter~~ to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between groundwater of the State of New Mexico~~underground sources of drinking water~~.

~~R~~**S.** *Transfer of a permit.* The operator shall not transfer a permit without the Director's prior written approval. A request for transfer of a permit shall identify officers, directors and owners of 25 percent or greater in the transferee. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval. If the Director denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the proposed transferee may request a hearing with 10 days after

[33] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells.

[34] The state already has well plugging and abandonment requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5209 has been amended to cover Class I hazardous waste wells.

[35] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells. Section 20.6.5358 (internal cross reference) provides additional mechanical integrity testing requirements for Class I hazardous wells.

[36] The state already has mechanical integrity requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5204 has been amended to cover Class I hazardous waste wells.

receipt of the notice. Until the Director approves the transfer and the required financial assurance is in place, the Director shall not release the transferor's financial assurance.[37]

~~§~~ 20.6.2.5342~~144.52~~

ESTABLISHING PERMIT CONDITIONS:~~.~~

~~(a)~~ **A.** In addition to conditions required in Section 20.6.2.5341 NMAC~~§ 144.51~~,[38] the Director shall establish conditions, as required on a case-by-case basis under Subsection H of Section 20.6.2.3109 NMAC~~§ 144.36~~[39] (duration of permits), Subsection A of Section 20.3.2.5343 NMAC~~§ 144.53(a)~~[40] (schedules of compliance), and Section 20.3.2.5344 NMAC ~~§ 144.54 (monitoring), and for EPA permits only § 144.53(b) (alternate schedules of compliance), and § 144.4 (considerations under Federal law)~~.[41] Permits for owners or operators of hazardous waste injection wells shall also include conditions meeting the requirements of Section 20.6.2.5310 NMAC~~§ 144.14~~[42] (requirements for wells injecting hazardous waste), Subsections ~~paragraphs (a)~~A(~~7~~1) and ~~(a)~~A(~~9~~2) of this section,[43] and Sections 20.6.2.5351 through 20.6.2.5363 NMAC~~subpart G of part 146~~.[44] ~~Permits for owners or operators of Class VI injection wells shall include conditions meeting the requirements of subpart H of part 146. Permits for other wells shall contain the following requirements, when applicable.~~[45]

~~(1) *Construction requirements* as set forth in part 146. Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. Except as authorized by an area permit, no constuction may commence until a permit has been issued containing construction requirements (see § 144.11). New wells shall be in compliance with these requirements prior to commencing injection operations. Changes in construction plans during construction may be approved by the Administrator as minor modifications (§ 144.41). No such changes may be physically incorporated into construction of the well prior to approval of the modification by the Director.~~

---

[37] This provision, which requires OCD's written approval for a transfer, is more stringent than 40 CFR 144.51(l)(3).

[38] Internal cross reference (see cross reference table for details).

[39] This CFR section is entitled "Duration of Permits." Subsection H of 20.6.2.3109 is not an exact corollary, but appears to be at least as stringent, since the permit duration is 5 years. 40 CFR 144.36 allows a period of up to 10 years, but with review after 5 years. 20.6.3109 is incorporated by reference into Subsection B of Section 20.6.2.5101 for other UIC wells.

[40] Internal cross reference (see cross reference table for details).

[41] This clause is not necessary for permit programs administered by New Mexico.

[42] Internal cross reference (see cross reference table for details).

[43] Internal cross references (see cross reference table for details). These cross references are updated to reflect the fact that subsections 1-6 and 8 have been deleted as inapplicable.

[44] Internal cross reference (see cross reference table for details).

[45] Because this section sets out specific requirements for Class I hazardous wells, the general requirements for "other wells" are not applicable unless explicitly incorporated above.

~~(2) Corrective action as set forth in §§ 144.55, 146.7, and 146.84 of this chapter.~~

~~(3) *Operation requirements* as set forth in 40 CFR part 146; the permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements.~~

~~(4) *Requirements for wells managing hazardous waste,* as set forth in § 144.14.~~

~~(5) Monitoring and reporting requirements as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data. For EPA administered programs, monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in table I of 40 CFR 136.3 or in appendix III of 40 CFR part 261 or in certain circumstances by other methods that have been approved by the Regional Administrator.~~

~~(6) After a cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the plan unless he:~~

~~(i) Provides notice to the Regional Administrator;~~

~~(ii) Describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.~~

(~~7~~1) *Financial responsibility.*

(i) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:

(A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Subsection O of Section 20.6.2.5341 NMAC~~§§ 144.51(o)~~,[46] and Section 20.6.2.5209 NMAC[47] ~~146.10, and 146.92 of this chapter~~,[48] and submitted a plugging

[46] Internal cross reference (see cross reference table for details).

[47] The state already has plugging and abandonment requirements generally that EPA has apparently already determined are sufficient to meet the cited CFR provision. Section 20.6.2.5209 has been amended to cover Class I hazardous waste wells.

[48] 40 CFR § 146.92 applies to Class IV wells and is inapplicable here.

and abandonment report pursuant to Subsection P of Section 20.6.2.5341 NMAC~~§ 144.51(p)~~;[49] or

(B) The well has been converted in compliance with the requirements of Subsection N of Section 20.6.2.5341 NMAC ~~§ 144.51(n)~~;[50] or

(C) The transferor of a permit has received notice from the Director that the transfer has been approved and that the transferee's required financial assurance is in place.~~the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.~~

(ii) ~~The permittee shall show evidence of such financial responsibility to the Director by the submission of a surety bond, or other adequate assurance, such as a financial statement or other materials acceptable to the Director.~~[51]~~For EPA administered programs, the Regional Administrator may on a periodic basis require the holder of a lifetime permit to submit an estimate of the resources needed to plug and abandon the well revised to reflect inflation of such costs, and a revised demonstration of financial responsibility, if necessary.~~[52]The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of Section 20.6.2.5320 NMAC~~subpart F of this part~~.[53] ~~For Class VI wells, the permittee shall show evidence of such financial responsibility to the Director by the submission of a qualifying instrument (see § 146.85(a) of this chapter), such as a financial statement or other materials acceptable to the Director. The owner or operator of a Class VI well must comply with the financial responsibility requirements set forth in § 146.85 of this chapter.~~[54]

~~(8) *Mechanical integrity.* A permit for any Class I, II, III or VI well or injection project which lacks mechanical integrity shall include, and for any Class V well may include, a condition prohibiting injection operations until the permittee shows to the satisfaction of the Director under § 146.8, or § 146.89 of this chapter for Class VI, that the well has mechanical integrity.~~

(2~~9~~) *Additional conditions.* The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water.

---

[49] Internal cross reference (see cross reference table for details).

[50] Internal cross reference (see cross reference table for details).

[51] This sentence is not necessary given the specific reference to Class I hazardous wells below.

[52] Inapplicable to New Mexico-administered programs.

[53] Internal cross reference (see cross reference table for details).

[54] Inapplicable to Class I hazardous wells.

~~(b)~~ **B.**

(1) In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of ~~the SDWA and~~ this part~~parts 144, 145, 146 and 124~~.[55]

(2) ~~For a State issued permit, a~~An applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. ~~For a permit issued by EPA, an applicable requirement is a statutory or regulatory requirement (including any interim final regulation) which takes effect prior to the issuance of the permit. Section 124.14 (reopening of comment period) provides a means for reopening EPA permit proceedings at the discretion of the Director where new requirements become effective during the permitting process and are of sufficient magnitude to make additional proceedings desirable.~~ [56]~~For State and EPA administered programs, a~~An applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit~~, to the extent allowed in § 144.39~~.[57]

(3) New or renewed~~reissued~~ permits, and to the extent allowed under Section 20.6.2.3109 NMAC[58]~~§ 144.39~~ modified or terminated~~revoked and reissued~~ permits, shall incorporate each of the applicable requirements referenced in Section 20.6.2.5342 NMAC~~§ 144.52~~.[59]

(c) *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

~~§~~ 20.6.2.5343~~144.53~~

SCHEDULE OF COMPLIANCE:~~.~~

~~(a)~~ **A.** *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with ~~the SDWA and~~ this part[60]~~s 144, 145, 146, and 124~~.

---

[55] 20 NMAC 6.2 covers the same requires as 40 CFR parts 144 (Underground Injection Control Program), 145 (State UIC Program Requirements), 146 (Underground Injection Control Program: Criteria and Standards), and 124 (Procedures for Decisionmaking).

[56] Inapplicable to New Mexico-issued permits.

[57] Section 144.39(a)(3) includes provisions for inclusion of new regulations when permits are modified or revoked and reissued. There is no limit on inclusion of new regulations that are applicable to Class I hazardous wells. In contrast there are limits on new regulations applicable to Class I nonhazardous, Class II, Class III, and Class IV wells. There does not appear to be an existing corollary in the NMAC and deleting the clause with the cross reference may be the simplest way to address the issue since the limitations are not applicable to Class I hazardous wells.

[58] Section 144.39 is entitled "Modification or revocation and reissuance of permits." Section 20.6.2.3109 NMAC is entitled "Secretary approval, disapproval, modification, or termination of discharge permits, and requirements for abatement plans is the State corollary to this provision

[59] Internal cross reference (see cross reference table for details).

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.

(2) *Interim dates.* Except as provided in Subsection ~~paragraph (B~~b~~)~~(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(i) The time between interim dates shall not exceed 1 year.

(ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if Subsection~~paragraph (A~~a~~)~~(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

~~(b)~~ **B.** *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows:

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(i) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(ii) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(i) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date

---

(cont.)
[60] 20 NMAC 6.2 covers the same requires as 40 CFR parts 144 (Underground Injection Control Program), 145 (State UIC Program Requirements), 146 (Underground Injection Control Program: Criteria and Standards), and 124 (Procedures for Decisionmaking).

which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(ii) One schedule shall lead to timely compliance with applicable requirements;

(iii) The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(iv) Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under Subsection~~paragraph (B~~b~~)~~(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.

~~§ 20.6.2.5344144.54~~

REQUIERMENTS FOR RECORDING AND REPORTING OF MONITORING RESULTS:

All permits shall specify:

(a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

(b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

(c) Applicable reporting requirements based upon the impact of the regulated activity and as specified in Section 20.6.2.5359 NMAC~~part 146~~.[61] Reporting shall be no less frequent than specified in the above regulations.

20.6.2.5345 – 20.6.2.5350: [RESERVED]

~~§ 144.55~~[62]

~~**Corrective action.**~~

~~(a) *Coverage.* Applicants for Class I, II, (other than existing), or III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate~~

[61] Internal cross reference to reporting provisions for Class I hazardous wells.

[62] Pursuant to 40 CFR § 146.64 (Section 20.6.2.5354 NMAC), Section 144.55 is not applicable to Class I hazardous wells.

~~the injection zone, or in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review penetrating formations affected by the increase in pressure. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in § 146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of § 146.06 (Area of Review) and § 146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.~~

~~(b) *Requirements*~~

~~(1) *Existing injection wells.* Any permit issued for an existing injection well (other than Class II) requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this section to be completed as soon as possible.~~

~~(2) *New injection wells.* No owner or operator of a new injection well may begin injection until all required corrective action has been taken.~~

~~(3) *Injection pressure limitation.* The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.~~

~~(4) *Class III wells only.* When setting corrective action requirements the Director shall consider the overall effect of the project on the hydraulic gradient in potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in § 146.33(b) shall be designed to verify the validity of such determinations.~~

~~§~~ 20.6.2.5351~~146.61~~

APPLICABILITY:[63]

~~(a) **A.**~~ Sections 20.6.2.5351 through 20.6.2.5363 NMAC~~This subpart~~[64] establishes criteria and standards for underground injection control programs to regulate Class I hazardous

[63] Adjusted formatting because definitions were moved to 20.6.2.5301.

[64] Internal cross reference (see cross reference table for details).

waste injection wells. Unless otherwise noted in~~this~~ these Sections ~~subpart~~ supplement~~s~~ the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC~~subpart A~~ and apply~~ies~~ instead of any inconsistent requirements for Class I non-hazardous waste injection wells~~subpart B to Class I hazardous waste injection wells~~.[65]

~~(b)~~ **B.** ~~*Definitions.*~~

~~*Cone of influence* means that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into an underground source of drinking water (USDW).~~

~~*Existing well* means a Class I well which was authorized prior to August 25, 1988, by an approved State program, or an EPA-administered program or a well which has become a Class I well as a result of a change in the definition of the injected waste which would render the waste hazardous under § 261.3) of this part.~~

~~*Injection interval* means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.~~

~~*New well* means any Class I hazardous waste injection well which is not an existing well.~~

~~*Transmissive fault or fracture* is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.~~

§ 20.6.2.5352~~146.62~~

MINIMUM CRITERIA FOR SITING:~~.~~

~~(a)~~ **A.** All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore groundwater of the State of New Mexico~~an underground source of drinking water~~.

~~(b)~~ **B.** The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The Director shall determine geologic suitability based upon:

(1) An analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) An analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

[65] Subpart A of Section 146 is entitled "General Provisions;" Subpart B of Section 146 is entitled "Criteria and Standards Applicable to Class I Wells." The NMAC does not contain the same divisions. This rephrasing has the same effect of supplementing generally applicable UIC provisions while replacing provisions specific to Class I non-hazardous wells.

(3) A determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

~~(c)~~ **C.** Class I hazardous waste injection wells shall be sited such that:

(1) The injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into groundwater of the State of New Mexico~~USDWs~~.

(2) The confining zone:

(i) Is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to ~~prevenet~~prevent the movement of fluids into groundwater of the State of New Mexico~~a USDW~~; and

(ii) Contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

~~(d)~~ **D.** The owner or operator shall demonstrate to the satisfaction of the Director that:

(1) The confining zone is separated from the base of the lowermost groundwater of the State of New Mexico~~USDW~~ by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for groundwater of the State of New Mexico~~the USDW~~ in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) Within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost groundwater of the State of New Mexico~~USDW~~, considering density effects, injection pressures and any significant pumping in the overlying groundwater of the State of New Mexico~~USDW~~; or

(3) There is no groundwater of the State of New Mexico~~USDW~~ present.

(4) The Director may approve a site which does not meet the requirements in Subsections~~paragraphs~~ ~~(d~~D) (1), (2), or (3) of this section if the owner or operator can demonstrate to the Director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of groundwater of the State of New Mexico~~USDWs~~.

~~§~~ **20.6.2.5353~~146.63~~**

AREA OF REVIEW:

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5202 NMAC~~§ 146.6~~.[66] The area of review for Class I hazardous waste injection

[66] Section 146.6 is entitled "area of review." Section 20.6.2.5202 NMAC defines area of review in the NMAC.

wells shall be a 2-mile radius around the well bore. The Director may specify a larger area of review based on the calculated cone of influence of the well.

~~§~~ 20.6.2.5354~~146.64~~

CORRECTIVE ACTION FOR WELLS IN THE AREA OF REVIEW:

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of Section 20.6.2.5203 NMAC~~§§ 144.55 and 146.07~~.[67]

~~(a)~~ **A.** The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the Director outlining the protocol used to:

(1) Identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) Determine whether wells are adequately completed or plugged.

~~(b)~~ **B.** The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in Subsection A of Section 20.6.2.5360 NMAC~~§ 146.70(a)~~.[68]

(1) A tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) A description of each well or type of well and any records of its plugging or completion.

~~(c)~~ **C.** For wells that the Director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modification as are necessary to prevent movement of fluids into or between groundwater of the State of New Mexico~~USDWs~~. Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in Subsection~~paragraph~~ ~~(E~~e~~)~~ of this section), the Director shall:

(1) Require the applicant to revise the plan;

(2) Prescribe a plan for corrective action as a condition of the permit; or

(3) Deny the application.

---

[67] Section 144.55 (Corrective Action) and 146.07 (Corrective Action) are generally applicable corrective action provisions for all UIC wells. Section 20.6.2.5203 NMAC includes the generally applicable corrective action requirements for Class I non-hazardous and Class III wells in the NMAC.

[68] Internal cross reference (see cross reference table for details).

~~(d)~~ **D.** Requirements:

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under Subsection~~paragraph (c~~C~~)~~ of this section. Any such compliance schedule shall provide for compliance no later than 2 years following issuance of the permit and shall require observance of appropriate pressure limitations under Subsection~~paragraph (d~~D~~)~~(3) until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The Director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the Director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between groundwater of the State of New Mexico~~USDWs~~. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

~~(e)~~ **E.** In determining the adequacy of corrective action proposed by the applicant under Subsection~~paragraph (C~~e~~)~~ of this section and in determining the additional steps needed to prevent fluid movement into and between groundwater of the State of New Mexico~~USDWs~~, the following criteria and factors shall be considered by the Director:

(1) Nature and volume of injected fluid;

(2) Nature of native fluids or byproducts of injection;

(3) Geology;

(4) Hydrology;

(5) History of the injection operation;

(6) Completion and plugging records;

(7) Closure procedures in effect at the time the well was closed;

(8) Hydraulic connections with groundwater of the State of New Mexico~~USDWs~~;

(9) Reliability of the procedures used to identify abandoned wells; and

(10) Any other factors which might affect the movement of fluids into or between groundwater of the State of New MexicoUSDWs.

~~§ 20.6.2.5355146.65~~

CONSTRUCTION REQUIREMENTS:

~~(a)~~ **A.** *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) Prevent the movement of fluids into or between groundwater of the State of New MexicoUSDWs or into any unauthorized zones;

(2) Permit the use of appropriate testing devices and workover tools; and

(3) Permit continuous monitoring of injection tubing and long string casing as required pursuant to Subsection F of Section 20.6.2.5357 NMAC~~§ 146.67(f)~~.[69]

~~(b)~~ **B.** *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM~~The American Society for Testing Materials~~, or comparable standards acceptable to the Director.

~~(c)~~ **C.** *Casing and Cementing of New Wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between groundwater of the State of New MexicoUSDWs, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the Director shall consider the following information as required by Section 20.6.2.5360 NMAC~~§ 146.70~~:[70]

(i) Depth to the injection zone;

(ii) Injection pressure, external pressure, internal pressure and axial loading;

(iii) Hole size;

(iv) Size and grade of all casing strings (wall~~well~~ thickness, diameter, nominal weight, length, joint specification and construction material);

(v) Corrosiveness of injected fluid, formation fluids and temperature;

[69] Internal cross reference (see cross reference table for details).

[70] Internal cross reference (see cross reference table for details).

(vi) Lithology of injection and confining zones;

(vii) Type or grade of cement; and

(viii) Quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains ~~a~~ groundwater of the State of New Mexico ~~USDW~~ and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The Director may require more than 120% when the geology or other circumstances warrant it.

(3) At least one long string casing, using a sufficient number of centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(i) Of sufficient quantity and quality to withstand the maximum operating pressure; and

(ii) In a quantity no less than 120% of the calculated volume necessary to fill the annular space. The Director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(i) The maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(ii) The maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement ~~additivies~~additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

~~(d)~~ **D.** *Tubing and packer.*

(1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the Director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(iii) Injection pressure;

(iv) Annular pressure;

(v) Rate (intermittent or continuous), temperature and volume of injected fluid;

(vi) Size of casing; and

(vii) Tubing tensile, burst, and collapse strengths.

(3) The Director may approve the use of a fluid seal if he determines that the following conditions are met:

(i) The operator demonstrates that the seal will provide a level of protection comparable to a packer;

(ii) The operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(iii) The permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(iv) The design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(v) A secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

~~§ 20.6.2.5356146.66~~

LOGGING, SAMPLING, AND TESTING PRIOR TO NEW WELL OPERATION:

~~(a)~~ **A.** During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in Section 20.6.2.5355 NMAC~~§ 146.65~~,[71] and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a

[71] Internal cross reference (see cross reference table for details).

knowledgeable log analyst and submitted to the Director. At a minimum, such logs and tests shall include:

(1) Deviation checks during drilling on all holes constructed by drilling ~~a~~ pilot holes which are enlarged by reaming or another method. Such checks shall be at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(2) Such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses. At a minimum, the following logs shall be required in the following situations:

(i) Upon installation of the surface casing:

(A) Resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(B) A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(ii) Upon installation of the long string casing:

(A) Resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(B) A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(iii) The Director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) A mechanical integrity test consisting of:

(i) A pressure test with liquid or gas;

(ii) A radioactive tracer survey;

(iii) A temperature or noise log;

(iv) A casing inspection log, if required by the Director; and

(v) Any other test required by the Director.

~~(b)~~ **B.** Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The Director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such

cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.

~~(c)~~ **C.** The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

~~(d)~~ **D.** At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) Fracture pressure;

(2) Other physical and chemical characteristics of the injection and confining zones; and

(3) Physical and chemical characteristics of the formation fluids in the injection zone.

~~(e)~~ **E.** Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(1) A pump test; or

(2) Injectivity tests.

~~(f)~~ **F.** The Director shall have the opportunity to witness all logging and testing required by Sections 20.6.2.5351 through 5363 NMAC~~this subpart~~.[72] The owner or operator shall submit a schedule of such activities to the Director 30 days prior to conducting the first test.

~~§~~ **20.6.2.5357~~146.67~~**

OPERATING REQUIREMENTS:

~~(a)~~ **A.** Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into groundwater of the State of New Mexico~~a USDW~~.

~~(b)~~ **B.** Injection between the outermost casing protecting groundwater of the State of New Mexico~~USDWs~~ and the well bore is prohibited.

~~(c)~~ **C.** The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the Director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

[72] Internal cross reference (see cross reference table for details).

~~(d)~~ **D.** The owner or operator shall maintain mechanical integrity of the injection well at all times.

~~(e)~~ **E.** Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) Conditions limiting the temperature, pH or acidity of the injected waste; and

(2) Procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

~~(f)~~ **F.** The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) Automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the Director exceed a range and/or gradient specified in the permit; or

(2) Automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the Director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

~~(g)~~ **G.** If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under Subsection~~paragraph~~ ~~(f~~F~~)~~ of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) Cease injection of waste fluids unless authorized by the Director to continue or resume injection.

(2) Take all necessary steps to determine the presence or absence of a leak; and

(3) Notify the Director within 24 hours after the alarm or shutdown.

~~(h)~~ **H.** If a loss of mechanical integrity is discovered pursuant to Subsection~~paragraph~~ ~~(g~~G~~)~~ of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) Immediately cease injection of waste fluids;

(2) Take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(3) Notify the Director within 24 hours after loss of mechanical integrity is discovered;

(4) Notify the Director when injection can be expected to resume; and

(5) Restore and demonstrate mechanical integrity to the satisfaction of the Director prior to resuming injection of waste fluids.

~~(i)~~ **I.** Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(1) The owner or operator shall immediately case injection of waste fluids, and:

(i) Notify the Director within 24 hours of obtaining such evidence;

(ii) Take all necessary steps to identify and characterize the extent of any release;

(iii) Comply with any remediation plan specified by the Director;

(iv) Implement any remediation plan approved by the Director; and

(v) Where such release is into groundwater of the State of New Mexico~~a USDW~~ currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The Director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger groundwater of the State of New Mexico~~USDWs~~.

~~(j)~~ **J.** The owner or operator shall notify the Director and obtain his approval prior to conducting any well workover.

~~**§ 20.6.2.5358146.68**~~

TESTING AND MONITORING REQUIREMENTS:

Testing and monitoring requirements shall at a minimum include:

~~(a)~~ **A.** Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(i) The ~~paramentersparameters~~ for which the waste will be analyzed and the rationale for the selection of these parameters;

(ii) The test methods that will be used to test for these parameters; and

(iii) The sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the Director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

~~(b)~~ **B.** Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the Director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in Section 20.6.2.5352 NMAC~~§ 146.62~~.[73]

~~(c)~~ **C.** Compatibility of well materials.

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the Director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under Subsection B of Section 20.6.2.5355 NMAC~~§ 146.65(b)~~.[74]

(2) The Director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(i) Placing coupons of the well construction materials in contact with the waste stream; or

(ii) Routing the waste stream through a loop constructed with the material used in the well; or

(iii) Using an alternative method approved by the Director.

(3) If a corrosion monitoring program is required:

(i) The test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation; and

[73] Internal cross reference (see cross reference table for details).

[74] Internal cross reference (see cross reference table for details).

(ii) The owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in Subsection B of Section 20.6.2.5355 NMAC~~§ 146.65(b)~~.[75]

~~(d)~~ **D.** *Periodic mechanical integrity testing.* In fulfilling the requirements of Section 20.6.2.5204 NMAC~~§ 146.8~~,[76] the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

(1) The long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) The bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) An approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole. The Director may require such tests whenever the well is worked over;

(4) Casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The Director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) Any other test approved by the Director in accordance with the procedures in 40 CFR §Section 146.8(d)[77] may also be used.

~~(e)~~ **E.** *Ambient monitoring.*

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring program. At a minimum, the Director shall require monitoring of the pressure buildup in

---

[75] Internal cross reference (see cross reference table for details).

[76] Section 146.8 is entitled "Mechanical Integrity." Section 20.6.2.5204 NMAC includes mechanical integrity requirements for Class I non-hazardous and Class III wells.

[77] 40 C.F.R. § 146.8(d) requires the Director to obtain approval from the EPA administrator after notice in the Federal Register. There is no exact corollary provision in the NMAC. Subsection B(d) of Section 20.6.2.5204 NMAC, however, allows use of "other appropriate tests as the Secretary may require" but does not include any reference to approval from the EPA administrator.

the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the Director may also require:

(i) Continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the Director;

(ii) The use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the Director, or to provide other site specific data;

(iii) Periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(iv) Periodic monitoring of the ground water quality in the lowermost groundwater of the State of New Mexico~~USDW~~; and

(v) Any additional monitoring necessary to determine whether fluids are moving into or between groundwater of the State of New Mexico~~USDWs~~.

~~(f)~~ **F.** The Director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

~~§~~ **20.6.2.5359~~146.69~~**

REPORTING REQUIREMENTS:

Reporting requirements shall, at a minimum, include:

~~(a)~~ **A.** Quarterly reports to the Director containing:

(1) The maximum injection pressure;

(2) A description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) A description of any event which triggers an alarm or shutdown device required pursuant to Subsection F of Section 20.6.2.5357 NMAC~~§ 146.67(f)~~[78] and the response taken;

(4) The total volume of fluid injected;

[78] Internal cross reference (see cross reference table for details).

(5) Any change in the annular fluid volume;

(6) The physical, chemical and other relevant characteristics of injected fluids; and

(7) The results of monitoring prescribed under Section 20.6.2.5358 NMAC~~§ 146.68~~.[79]

~~(b)~~ **B.** Reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

(1) Periodic tests of mechanical integrity;

(2) Any other test of the injection well conducted by the permittee if required by the Director; and

(3) Any well workover.

~~§~~ 20.6.2.5360~~146.70~~

INFORMATION TO BE EVALUATED BY THE DIRECTOR:

This section sets forth the information which must be evaluated by the Director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the Director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved. ~~In cases where EPA issues the permit, all the information in this section must be submitted to the Administrator or his designee.~~[80]

~~(a)~~ **A.** Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the Director shall review the following to assure that the requirements of Sections 20.6.2.5000 through 20.6.2.5399 NMAC~~this part and part 144~~ are met:[81]

[79] Internal cross reference (see cross reference table for details).

[80] Inapplicable to New Mexico-administered program.

[81] 20 NMAC 6.2 covers the same requirements as 40 CFR parts 144 (Underground Injection Control Program) and 146 (Underground Injection Control Program: Criteria and Standards).

(1) Information required in Section 20.6.2.5102 NMAC[82] ~~§ 144.31~~;

(2) A map showing the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads. The map should also show faults, if known or suspected;

(3) A tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the Director may require;

(4) The protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) Maps and cross-sections indicating the general vertical and lateral limits of all groundwater of the State of New Mexico~~underground sources of drinking water~~ within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each groundwater of the State of New Mexico~~underground source of drinking water~~ which may be affected by the proposed injection;

(6) Maps and cross-sections detailing the geologic structure of the local area;

(7) Maps and cross-sections illustrating the regional geologic setting;

(8) Proposed operating data;

(i) Average and maximum daily rate and volume of the fluid to be injected; and

(ii) Average and maximum injection pressure;

(9) Proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) Proposed stimulation program;

(11) Proposed injection procedure;

---

[82] § 144.31 is entitled "Application for a permit; authorization for a permit." There is no complete state corollary because 20.6.2.5102 NMAC, which covers the same topic, does not cover Class I hazardous waste wells. In order to allow this cross reference to work, 20.6.2.5102 NMAC has been amended to include hazardous waste wells.

(12) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) Contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any groundwater of the State of New MexicoUSDW;

(14) Plans (including maps) for meeting monitoring requirements of Section 20.6.2.5358 NMAC§ 146.68;[83]

(15) For wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under Section 20.6.2.5354 NMAC§ 146.64;[84]

(16) Construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) A demonstration pursuant to Section 20.6.2.5320 NMACpart 144, subpart F,[85] that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

(b) **B.** Prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the Director shall review the following information, which shall be included in the completion report:

(1) All available logging and testing program data on the well;

(2) A demonstration of mechanical integrity pursuant to Section 20.6.2.5358 NMAC§ 146.68;[86]

(3) The anticipated maximum pressure and flow rate at which the permittee will operate;

(4) The results of the injection zone and confining zone testing program as required in Subsection A(9) of Section 20.6.2.5360 NMAC§ 146.70(a)(9);[87]

(5) The actual injection procedure;

(6) The compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

---

[83] Internal cross reference (see cross reference table for details).

[84] Internal cross reference (see cross reference table for details).

[85] Internal cross reference (see cross reference table for details). Part 144, subpart F refers to 40 CFR §§ 144.60-70.

[86] Internal cross reference (see cross reference table for details).

[87] Internal cross reference (see cross reference table for details).

(7) The calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under Subsections A(2) and (3) of Section 20.6.2.5360 NMAC~~§ 146.70(a) (2) and (3).~~;[88]

(8) The status of corrective action on wells identified in Subsection A(15) of Section 20.6.2.5360 NMAC~~§ 146.70(a)(15).~~; and[89]

(9) Evidence that the permittee has obtained an exemption under 40 C.F.R. Part 148, Subpart C for the hazardous wastes permitted for disposal through underground injection.

~~(c)~~ **C.** Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the Director shall review the information required in Subsection A(4) of Section 20.6.2.5361 NMAC and Subsection A of Section 20.6.2.5362 NMAC~~§§ 146.71(a)(4) and 146.72(a)~~.[90]

~~(d)~~ **D.** Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

(1) The generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) Injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

~~§~~ 20.6.2.5361~~146.71~~

CLOSURE:

~~(a)~~ **A.** *Closure Plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of Subsection D~~paragraph (d)~~ of this section and is acceptable to the Director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the Director no later than the date on which

[88] Internal cross reference (see cross reference table for details).

[89] Internal cross reference (see cross reference table for details).

[90] Internal cross reference (see cross reference table for details).

notice of closure is required to be submitted to the Director under Subsection B~~paragraph (b)~~ of this section.

(3) The plan shall assure financial responsibility as required in Subsection A(7) of Section 20.6.2.5342 NMAC~~§ 144.52(a)(7)~~.[91]

(4) The plan shall include the following information:

(i) The type and number of plugs to be used;

(ii) The placement of each plug including the elevation of the top and bottom of each plug;

(iii) The type and grade and quantity of material to be used in plugging;

(iv) The method of placement of the plugs;

(v) Any proposed test or measure to be made;

(vi) The amount, size, and location (by depth) of casing and any other materials to be left in the well;

(vii) The method and location where casing is to be parted, if applicable;

(viii) The procedure to be used to meet the requirements of Subsection D(5)~~paragraph (d)(5)~~ of this section;

(ix) The estimated cost of closure; and

(x) Any proposed test or measure to be made.

(5) The Director may modify a closure plan following the procedures of Section 20.6.2.3109 NMAC~~§ 124.5~~.[92]

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(i) Has received authorization from the Director; and

(ii) Has described actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger groundwater of the State of New Mexico~~USDWs~~ during the period of temporary disuse. These

[91] Internal cross reference (see cross reference table for details).

[92] Section 124.5 is entitled "Modification, revocation, and reissuance, or termination of permits; subsection (c) applies to NPDES and UIC permits. Section 20.6.2.3109 NMAC provides corollary requirements.

actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the Director 30 days prior to resuming operation of the well.

~~(b)~~ **B.** *Notice of intent to close.* The owner or operator shall notify the Director at least 60 days before closure of a well. At the discretion of the Director, a shorter notice period may be allowed.

~~(c)~~ **C.** *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the Director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

(1) A statement that the well was closed in accordance with the closure plan previously submitted and approved by the Director; or

(2) Where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

~~(d)~~ **D.** *Standards for well closure.*

(1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the Director. The Director shall analyze the pressure decay and the transient pressure observations conducted pursuant to Subsection E(1)(i) of Section 20.6.2.5358 NMAC~~§ 146.68(e)(1)(i)~~[93] and determine whether the injection activity has conformed with predicted values.

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(i) Pressure tests with liquid or gas;

(ii) Radioactive tracer surveys;

(iii) Noise, temperature, pipe evaluation, or cement bond logs; and

(iv) Any other test required by the Director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

[93] Internal cross reference (see cross reference table for details).

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between groundwater of the State of New MexicoUSDWs.

(5) Placement of the cement plugs shall be accomplished by one of the following:

(i) The Balance Method;

(ii) The Dump Bailer Method;

(iii) The Two-Plug Method; or

(iv) An alternate method, approved by the Director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).

§ 20.6.2.5362146.72

POST-CLOSURE CARE:

(a) **A.** The owner or operator of a Class I hazardous waste well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of Subsection Bparagraph (b) of this section and is acceptable to the Director. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under Subsection C of Section 20.6.2.5361 NMAC§ 146.71(c).[94]

(3) The plan shall assure financial responsibility as required in Section 20.6.2.5363 NMAC§ 146.73.[95]

[94] Internal cross reference (see cross reference table for details).

[95] Internal cross reference (see cross reference table for details).

(4) The plan shall include the following information:

(i) The pressure in the injection zone before injection began;

(ii) The anticipated pressure in the injection zone at the time of closure;

(iii) The predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico~~USDW~~;

(iv) Predicted position of the waste front at closure;

(v) The status of any cleanups required under Section 20.6.2.5354 NMAC~~§ 146.64~~;[96] and

(vi) The estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the Director may modify the post-closure plan after submission of the closure report following the procedures in Section 20.6.2.3109 NMAC.~~§ 124.5.~~[97]

~~(b)~~ **B.** The owner or operator shall:

(1) Continue and complete any cleanup action required under Section 20.6.2.5354 NMAC~~§ 146.64~~,[98] if applicable;

(2) Continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost groundwater of the State of New Mexico~~USDW~~. The Director may extend the period of post-closure monitoring if he determines that the well may endanger groundwater of the State of New Mexico~~a USDW~~.

(3) Submit a survey plat to the local zoning authority designated by the Director. The plat shall indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat shall be submitted to the ~~Regional Administrator~~Director ~~of the appropriate EPA Regional Office~~.

(4) Provide appropriate notification and information to such State and local authorities as have cognizance over drilling activities to enable such State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone.

---

[96] Internal cross reference (see cross reference table for details).

[97] Section 124.5 is entitled "Modification, revocation, and reissuance, or termination of permits; subsection (c) applies to NPDES and UIC permits. Section 20.6.2.3109 NMAC provides corollary requirements.

[98] Internal cross reference (see cross reference table for details).

(5) Retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids. The Director shall require the owner or operator to deliver the records to the Director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the Director for that purpose.

~~(c)~~ **C.** Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) The fact that land has been used to manage hazardous waste;

(2) The name of the State agency or local authority with which the plat was filed, as well as the address of the Director~~Regional Environmental Protection Agency Office to which it was submitted~~;

(3) The type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

§ 20.6.2.5363~~146.73~~

FINANCIAL RESPONSIBILITY FOR POST-CLOSURE CARE:

The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in Section 20.6.2.5320 NMAC,[99] ~~40 CFR part 144, subpart F.~~ The amount of the funds available shall be no less than the amount identified in Subsection A(4)(vi) of Section 20.6.2.5362 NMAC~~§ 146.72(a)(4)(vi)~~.[100] The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

20.6.2.5364 – 20.6.2.5399: [RESERVED]

[99] Internal cross reference (see cross reference table for details). Part 144, subpart F refers to 40 CFR §§ 144.60-70.

[100] Internal cross reference (see cross reference table for details).

A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells

William R. Rish
Hull and Associates, Inc. 6161 Cochran Road, Suite A
Solon, Ohio 44139

Approximately 150 underground injection wells exist in the United States that are categorized by the United States Environmental Protection Agency (U.S. EPA) as Class IH. These are wells that inject hazardous liquid waste. Based on figures from the U.S. EPA's Toxic Release Inventory (TRI), the volume of hazardous waste disposed of through Class IH deep well injection is about 220 million pounds. Since the primary goal of deep well injection is waste isolation, the primary risk to the environment is loss of waste containment. Surprisingly, no quantitative assessment of the risk of loss of waste isolation from Class IH injection, as currently practiced, has been performed by advocates, critics, or regulators of the industry. Using Failure Modes and Effects Analysis (FMEA), we identified and evaluated all the ways in which a deep well injection system can fail. Event and fault trees were developed for release to the lowermost underground source of drinking water (USDW), and frequencies were assigned to each event. Uncertainty about event frequencies was treated explicitly by developing probability distributions for each and propagating these through event sequences using Monte Carlo analysis and the Boolean algebra inherent to the trees. Based on the results of the analysis, it was estimated that the risk of loss of waste isolation from the accessible environment over the operating period of a Class IH injection well is less than one in one million (1E-6) at reasonable confidence levels.

INTRODUCTION

The disposal of the large volumes of industrial and municipal wastes has been a source of on-going concern throughout the latter half of the twentieth century. Over the past 20 years increasing stringent waste disposal regulations have improved environmental quality while limiting disposal options and raising costs. Since waste reduction techniques are equally subject to the law of diminishing returns, some waste will always result from human activities and disposal issues will remain to be addressed. From a societal viewpoint, the ideal disposal method should be (virtually) infinite, cheap, permanent, and result in no human or ecological exposures in the foreseeable future. Most current regulated methods of disposal, for example landfills or incineration, fail on one or more of these scores. Only deep well injection appears to satisfy all four requirements; however, the environmental risks associated with Class IH disposal technology remains a source of controversy.

Approximately 150 underground injection wells exist in the United States that are categorized by the United States Environmental Protection Agency (U.S. EPA) as Class IH[41]. These are wells that inject hazardous liquid waste. The majority of Class IH wells are located in the Great Lakes Region and the Gulf States, due to the favorable geology in these regions. Over half of Class IH wells are located in Texas and Louisiana, and almost 90% are in U.S. EPA Regions V and VI[41]. Based on figures from the U.S. EPA's Toxic Release Inventory (TRI)[42], the volume of hazardous waste disposed of through Class IH deep well injection is about 220 million pounds. This value is somewhat deceptive since the practice of deep well injection involves dilution of the waste with large amounts of water before it is pumped into the subsurface. Industries that practice deep well injection are sometimes singled out as major sources of pollutant releases to the environment. Since

the intent of deep well injection is the permanent isolation of waste from the biosphere, it is unclear if the use of deep well injection is properly termed a release to the environment. While problems resulting from deep well injection have occurred, these incidents took place in the past and the conditions that caused them do not occur under current regulation and practice.

U.S. EPA promulgated regulations in 1980 governing all injection wells including those injecting hazardous waste (53 FR 28131). In 1988 U.S. EPA passed additional regulations requiring operators of Class IH wells to demonstrate that no migration of the waste constituents will occur from the injection zone while the waste remains hazardous (or for 10,000 years) (40 CFR Parts 146 and 148). Waste isolation is accomplished by a combination of:

- the application of strict siting criteria,
- the presence of multiple redundant engineered and geological barriers,
- practices to ensure chemical compatibility of waste with geology,
- operating restrictions and preventive maintenance during active injection operations,
- continual monitoring and testing of performance and confinement integrity, and
- the presence of alarms and a full-time operator.

These factors combine to assure that waste will be prevented from entering the accessible environment, i.e., that portion of the environment where human or ecological exposure can occur. In the absence of such exposure, no risk to health or welfare exists.

Studies published by both industry and the U.S. EPA in the past 10 years have concluded that the current practice of deep well injection is both safe and effective, and poses acceptably low risk to the environment[3,5,10,32,35,36,39,44]. Nonetheless, the effectiveness of deep well injection regulations has been challenged by various advocacy groups and the practice opposed on principle[15,19,28]. Studies purporting to examine the risks from deep well injection take as their starting point the assumption that release of waste from confinement to a drinking water aquifer has occurred and then model the transport time to a receptor well and the dose received by that receptor[31]. None to date has assessed the probability of the release occurring in the first place. Since the primary risk associated with deep well injection is that isolation from the accessible environment will fail, this probability must be examined before drawing any conclusions regarding health or environmental risks from such a release.

The purpose of this paper is to specifically examine this issue and to provide an objective and quantitative analysis of the risk of waste isolation loss from Class IH underground injection wells that will allow meaningful identification and comparison of waste isolation subsystems as contributors to that risk. Areas of uncertainty will be identified and quantified as to their possible contribution and importance to the risk estimates with a view of collecting additional data, identifying new sources of data, or stimulating new research to reduce these uncertainties. In doing so, we hope to provide all stakeholders with the type of rigorous scientific support needed to make appropriate decisions regarding deep well injection.

BACKGROUND

A review of available studies on Class I injection well failures over the past 20 years was conducted. These studies originated from a variety of sources including industry studies, peer-reviewed studies, trade association reports as well as reports from advocacy groups. Case studies and accident reports involving injection wells were reviewed as well. The relevant regulations were also carefully reviewed to determine the ways that regulatory requirements and restrictions affect siting, design, construction and operations. Numerous discussions and interviews were held with injection well operators and regulators. Based on this information, the critical factors to maintaining waste isolation were identified.

An important concept that appears throughout injection well risk studies and regulations is that of the underground source of drinking water (USDW). Releases from injection wells to the accessible environment (i.e., that portion of the environment where human or ecological exposures can occur) may occur either at the ground surface or into subsurface groundwater zones with potential human use. These groundwater zones are typically referred to as USDWs in studies and regulations. Surface releases are readily observed and remedied, and as such do not result in chronic exposures and have not been included in risk assessments. Potential releases to USDWs are the primary focus of risk assessments and regulations. Accordingly, in this assessment the relevant release point was assumed to be the lowermost USDW (i.e., closest to the injection zone).

In general, previous studies fall into four categories. The first category is case studies of injection well failures that have resulted in releases[4,6,12,17,25,34]. There are relatively few cases of this sort and none involving a release from a Class I well to a USDW since the U.S. EPA regulations took effect in 1980[35,39]. These historical incidents are confined without exception to issues of well siting, design, and operation that are no longer allowed under today's regulations, nor exist in today's population of Class I wells[5,12,17,25,34,39].

The second category is geologic fate and transport modeling studies[1,8,11,14,21,22,24,26,37,38,44]. These studies assume a release from an injection well and model the fate and transport of contaminants as they migrate through the typical geologic formations associated with injection wells. This includes modeling efforts performed for the "no migration petition" required for an operating permit. In general, such studies demonstrate that proper selection of the geologic formation creates an effective means to achieve waste isolation. While such studies can provide useful information on geologic factors important for maintaining waste isolation and the potential for failure of geologic barriers, they assume that a release has already occurred and do not account for waste isolation provided by engineered barriers of the well system. These studies can help with understanding mechanisms and general likelihood of failure of the geologic formations as one component of the loss of waste isolation, and can help in developing estimates of release volumes and concentrations to USDWs.

The third category is properly characterized as exposure studies[31]. One study of this type was found. In this study, it was assumed that a release occurred from the injection well to the USDW. The transport of this release in the USDW aquifer was modeled to a point of withdrawal for potable use. As with other modeling studies, a release was assumed without providing any information on how the release occurred and the probability of that release mechanism. Additionally, such studies do not

take into account the effect of the containment or attenuation factors posed by geologic features (e.g., layers of low permeability rock) between the point of release and the USDW.

The final category is regulatory reviews and comparative risk studies. A 1989 U.S. EPA comparative risk evaluation of waste management alternatives by experts in the field concluded that deep well injection posed among the lowest environmental risks on a relative scale[36]. A 1991 U.S. EPA analysis of their restrictions on Class IH wells concluded that since 1980, Class IH wells are safer than virtually all other waste disposal practices[39]. U.S. EPA studied over 500 Class I wells in operation from 1988 to 1991 and found no failures known to have affected a USDW. In response to a 1992 House of Representatives subcommittee inquiry, U.S. EPA[40] provided state-by-state summaries of reported Class I well failure incidents between 1988 and 1992. This was defined as a breakdown or operational failure of components of the well system, whether waste isolation loss occurred or not. Although component failures were reported during the survey period, no waste isolation failure occurred and no waste from a Class I injection well reached a USDW. While these studies indicate the waste isolation effectiveness of current injection practices, they do not quantitatively address future risk.

In summary, no studies were identified that provide full quantitative characterization of the risk of Class I hazardous waste injection wells. Some describe release incidents for well systems that cannot and do not exist under today's regulations. Others characterize only a portion of the risk, for example, estimating exposures that might occur after presuming a release (often by mechanisms that have never occurred). Others demonstrate that releases have not occurred under current practices, but do not characterize the likelihood that releases might occur in the future. To properly assess the environmental risks posed by Class I injection wells, it is critical that the probability of loss of waste isolation be quantitatively assessed. Waste volumes and concentrations corresponding to realistic release scenarios should be included in the assessment.

METHODOLOGY

To quantitatively evaluate environmental risks posed by Class IH well injection, it was necessary to develop a detailed characterization of how the siting, construction, design, operation, testing and maintenance of a Class IH well system function together to create and ensure waste isolation[2,3,16,27,45]. The critical elements of this system that are important in maintaining waste isolation are singled out for special attention. Inherent in this approach is a systematic identification and depiction of events and conditions that could result in loss of waste isolation. This information was gathered from historical records on well failure events, and obtained from interviews with injection well construction, maintenance and testing practitioners, operators of injection wells, and the agencies that regulate them. From this information, a comprehensive set of scenarios was developed depicting the ways that a typical Class IH injection well system can fail to isolate waste. The probability of waste isolation loss in each of these scenarios was then quantified. Uncertainties in the analysis were given explicit quantitative treatment using Monte Carlo Analysis.

More specifically, the techniques of probabilistic risk assessment (PRA) were employed. PRA is a generally accepted approach for analyzing risks that arise through failure of engineered systems. In this case, PRA was used to identify sequences of events by which waste isolation could fail and result in waste reaching the lowermost USDW, and to characterize the probabilities of these event

sequences. The results quantitatively and probabilistically demonstrate the degree of certainty that waste injected in this manner will effectively remain isolated and pose no future risk. The outcome of interest was the loss of waste isolation by release to the lowermost USDW from any cause. Factors considered included:

- errors in site selection or characterization, such as inappropriate or incompatible geology, unidentified abandoned wells, undetected geologic faults, or incorrect characterization of waste migration potential,
- geologic or engineered system failures, such as seismic fracturing of confining zones, tubing or casing breaches, annulus fluid pressure loss, or alarm failures,
- operator errors, such as failure to respond to alarms, failure to detect leaks during testing, over-pressurizing, or injecting incompatible waste, and
- other human errors, such as inadvertent extraction of waste in the future.

The following steps were taken and detailed discussion of each follows:

1. the Class IH well system, individual components, and conditions upon which the PRA is based were defined,
2. a Failure Modes and Effects Analysis (FMEA) was performed with the assistance of injection well experts,
3. based on the FMEA results, event and fault trees were developed, depicting the sequence of events that must occur for waste isolation to be lost,
4. based on historical or expert information, probability distributions characterizing the uncertainty in the frequency of occurrence of the various failures and other events were developed, and
5. Boolean logic and Monte Carlo analysis were used to combine the frequencies of independent and dependent events as depicted in the event and fault trees to estimate the overall probability of waste isolation loss for a Class IH well.

CLASS IH INJECTION WELL SYSTEM DEFINITION

In order to quantitatively assess the risk of loss of waste isolation from Class IH injection wells, the injection well system must be defined at a detailed enough level that specific event sequences can be identified and their frequencies quantified. At the similar time, the system definition must not be so unique that its methodologies and conclusions cannot be generalized to the population of Class IH wells at large. The Class IH well system definition used was based on the minimal design and operation features allowed under current regulations. This ensures the broadest applicability of the study results and conclusions. The regulatory system is sufficiently effective that there is no possibility that any Class IH injection wells exist and operate that do not meet at least the system definition used. This conclusion was verified by discussions with state and U.S.EPA officials, a review of the current U.S. EPA injection well database[41], and a random survey of Class I injection well operators involving about 20 percent of currently operating Class IH wells[47]. It is nonetheless appropriate to evaluate the possible failure of certain elements of the regulatory process that influence the effectiveness of waste isolation, and this was done. For instance, the possibility that an unplugged well in the area is unaccounted for in the site review was included.

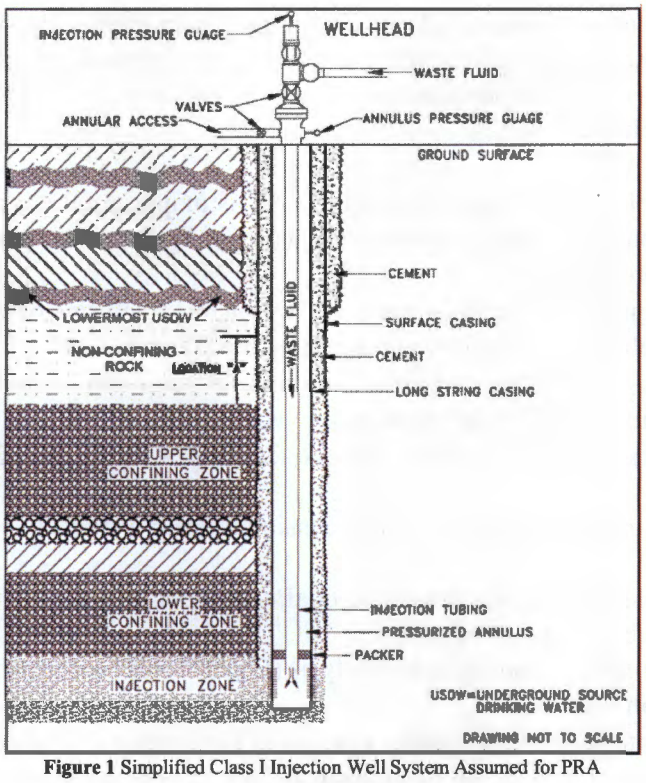


Figure 1 Simplified Class I Injection Well System Assumed for PRA

The design and operation features of the system analyzed are listed in Table 1 and a diagram of the system is shown in Figure 1. As a standard Class IH injection well, the system is assumed to comply with the requirements of the Code of Federal Regulations, Chapter 40, Parts 146 and 148 and Part 267, Subpart G. The salient features of these requirements with respect to waste isolation are listed in Table 1. It is assumed that the well operator has prepared a no migration petition, required to receive a permit to inject restricted wastes. The no migration petition results in a marked increase in site and system scrutiny by both the industry and the regulators. The operator must demonstrate through modeling that no migration of the waste will occur from the injection zone while the waste remains hazardous (or for 10,000 years). Such petitions extensively document the local geology and faults, the well design, the operation and maintenance procedures, comprehensive local well surveys, and fate and transport through mathematical modeling. In the process of characterizing the proposed injection site, an "area of review" (AOR) extending a two mile radius around the site must be investigated. The impact of these extensive analyses and investigations need to be considered in assessing the probability of release.

Table 1
CLASS IH WELL SYSTEM DEFINITION - DESIGN AND OPERATING FEATURES

WASTE ISOLATION ELEMENT	DESIGN OR OPERATING FEATURE
Applicable Regulation	Complies with 40 CFR 146 Subpart G
Site Selection and Characterization	Area of Review: 2 mile radius "No Migration Petition" for injection of restricted wastes
Geologic Barriers	Two confining layers between injection zone & lowermost USD
Engineered Barriers	Surface casing set below lower most USDW Casing completed with continuous cement Liquid-based annulus pressure barrier
Testing, Monitoring and Inspection	Equipped with auto alarm and a full time operator Annual Radioactive Tracer survey or OA log for fluid movement Temperature and noise logs once every five years

The geologic features of the system analyzed are depicted in Figure 1. The *injection zone* is the permeable subsurface rock that receives the waste. Class I injection well depths nationally range from 1,700 to 9,500 feet[41]. Typically, the USDW and injection zone are separated by several thousand feet[41]. The injection zone is required to be separated from the USDW by at least two confining zones consisting of dense rock or other geologic formations impermeable to fluid migration. For this assessment, it was assumed that only two confining zones exist. In actual practice, Class I injection wells have more than two confining layers[41], separated by non-potable water-bearing zones referred to as "buffer zones". Studies have shown that if waste fluid were to migrate through a confining zone, there would be significant dilution in each successive buffer zone[11,38]. This phenomenon has not been accounted for in exposure assessments to date[31], which generally assume that the waste inventory is released directly to a USDW.

Injection wells are constructed by extending concentric pipes or *casings* down the drilled well boring. Corrosion resistant materials such as steel alloy or fiberglass are used in the casings. The upper and outermost casing (Figure 1) is called the *surface casing* and is required by regulation (Table 1) to extend below the base of the lowermost USDW. As shown in Figure 1, the surface casing may not extend into the uppermost confining zone. This may result in a section of the well without surface casing that passes through an area of non-confining rock below the lowermost USDW but above the confining zones (*Location A* on Figure 1). This area is important in the PRA because it is the location with the least number of barriers to loss of waste isolation.

Within the surface casing is the *long string casing* which extends to the injection zone. Chemically resistant cement or epoxy resin is used to fill the borehole space outside the surface casing, between the surface and long string casings, and the borehole space outside the long string casing from top to bottom. These casings were assumed to be completed with continuous cement (Table 1). This effectively binds the casings together and seals the well boring along its entire length, creating a single unit. Nonetheless, in this assessment the cement was conservatively considered to be a barrier for vertical but not horizontal fluid migration.

A smaller steel or fiberglass pipe, the *injection tube*, extends the length of the casings through a lower seal (the *packer*) into the injection zone. Waste pumped from above flows into and is forced out of the portion of the borehole that extends into the injection zone. This is known as the *injection interval*, and may be uncased or fitted with a perforated section to prevent loose material from entering and potentially clogging the borehole or injection tube.

The space between the long string casing and the injection tube (*the annulus*) is sealed at the surface by the wellhead and the base by the *packer*, and filled with a non-corrosive fluid under positive pressure in excess of the injection tube pressure. In Class IH wells the annulus fluid is required to function as an additional pressure barrier to prevent waste fluid from leaking through the injection tube or the packer. Measurement of the fluid pressure and volume within the annulus is used to monitor the mechanical integrity of the injection tube, long string casing, and packer.

An operating Class IH injection well system incorporates the redundancy of safety systems that typically characterize safe engineering design. The long string casing is continuously cemented from top to bottom. Along with the annulus fluid pressure, the casing is a barrier to an injection tube or packer leak and the cement provides a barrier to vertical migration of any fluid that would escape along the outside of the casing or the borehole. The surface casing presents another barrier to waste migration in the portion of the well passing through USDWs. Finally, the annulus is sealed at both ends and is pressurized. Since the pressure in the annulus is higher than the pressure used to inject the waste (positive pressure), any leaks in the injection tube would result in annulus fluid forced into the tube rather than waste fluid escaping into the annulus. The fluid pressure is required to be continuously monitored both by automated alarm systems and manually by a full-time operator for loss of pressure or volume that might indicate that the system integrity (*e*.g., pump failure, packer failure, casing failure, packer failure) is compromised. Most Class IH systems include automatic shutdown of the injection pumps upon alarm, although this auto-shutdown was conservatively assumed to not be present in the system assessed. Of course, the injection pumps shutdown upon loss of power events.

Class IH wells are monitored annually for a number of factors related to waste isolation including: injection zone pressure buildup, water quality monitoring in lower USDW in some cases, and required mechanical integrity testing to detect fluid movement outside of the long string casing. This testing includes annual radioactive tracer or oxygen activation logging, as well as temperature and noise logging at least once every five years. Casing inspection logs are required whenever the injection tube is removed. When migration or flaws are detected they are repaired.

In summary, the system assessed was a Class I hazardous waste injection well that minimally complies with 40 CFR 146 Subpart G requirements. The system components included in the PRA included geologic, engineered and human elements. Finally, the system was assumed to be operating, with an operating lifetime of 30 years. Post-operating risks analyzed included the possibility of inadvertent human extraction of waste and migration through breached geologic confining zones.

FAILURE MODES AND EFFECTS ANALYSIS

A Failure Modes and Effects Analysis (FMEA) were performed on the Class IH injection well system defined above. This is a systematic technique for identifying all means by which the injection well components could fail, and what the effect could be with respect to waste isolation. Each component and activity identified as important was evaluated by:

- identifying all possible failure modes of the component (*e.g.*, injection tube leaks, injection tube crushes, injection tube plugs, etc.),
- identifying the possible reasons for these failure modes (*e.g.*, corrosion, improper installation, etc.),
- assessing the possible consequences of the failure mode (*e.g.,* loss of annulus pressure, fracturing of injection zone, etc.), and
- identifying the system features that serve to prevent the failure or mitigate its consequences (*e.g.*, the annulus fluid is under positive pressure).

The FMEA process is a brainstorming activity that does not exclude events based on the probability of their occurrence. All plausible events are considered even if they are considered to be of very low probability. The results of the FMEA are qualitative in nature and are not in themselves suitable for quantifying risk. Since the process identifies all potential failure modes for the system, failure mechanisms of the components, and the safety systems designed to prevent or mitigate failures, it creates a level of understanding that can be used to develop the probabilistic framework to quantify risk (i.e., the event and fault trees).

The FMEA process in this assessment was one through a series of workshops with deep well injection operators and expert consultants. In addition, FMEA results were presented at a number of Ground Water Protection Council national meetings and refined based on input obtained there from injection well operators, maintenance and testing professionals, and state and U.S. EPA regulatory staff.

EVENT AND FAULT TREE DEVELOPMENT

Based on understanding gained from the FMEA, event trees were developed that identify potential sequences of events that could result in a release to the lowermost USDW. Seven possible initiating events were identified that characterize the overall risk of waste isolation loss for the Class IH injection well system defined. The seven initiating events identified were:

1. Packer Leak
2. Major Packer Failure
3. Injection Tube Leak
4. Major Injection Tube Failure
5. Cement Microannulus Leak
6. Confining Zone(s) Breach, and
7. Inadvertent Injection Zone Extraction.

Once initiated, the likelihood of waste isolation loss depends on the subsequent failure of additional components, barriers and back-up systems within a relevant time domain. The event tree is a

diagram that depicts the sequence of events and component failures that must follow for a release to the lowermost USDW to occur. Pathway can be traced through the event tree along its branches, depicting different combinations of failures and successes of system components and operational events that function together to prevent or result in waste isolation loss.

Three events were of sufficient complexity, involving multiple events themselves, that fault trees were developed for them. These three events were: loss of the annulus pressure barrier, lower geologic confining zone breach, and upper geologic confining zone breach.

The event and fault trees for each initiating event sequence are discussed in more detail below, but first the development of estimated frequencies of occurrence for events in the trees is described.

EVENT FREQUENCY DISTRIBUTION DEVELOPMENT

Perhaps the most problematic part of this PRA was estimating frequencies of occurrence for events in the trees. For many of these events, occurrence is so rare and data are so sparse that a confident point estimate for the frequency of occurrence cannot be established. Consequently, uncertainty about occurrence frequencies was given explicit quantitative treatment in the assessment. Probability distributions of event occurrence frequencies were developed, either based on available occurrence data or expert judgement. These distributions are shown in Table 2, where the event names correspond to event names appearing on the event and fault trees in Figures 2 through 11. Simultaneous occurrence of the events in a sequence is required for a release to occur. The period of time during which simultaneous occurrence could feasibly happen before detection and remedy would occur was assumed to be one day. Thus, the frequencies shown in Table 2 are based on a daily time frame, unless they are on-demand probabilities of a failed state or response once a sequence is in progress (e.g., the probability that an alarm fails or the probability that a discontinuity is present in the confining zone).

Table 2
Event Probability Distributions Class I Hazardous Well

EVENT NAME	DESCRIPTION	PROBABILITY DISTRIBUTION TYPE	LOWER BOUND	MEDIAN	UPPER BOUND
ALARM	Automatic alarm fails	Uniform	5E-05	3E-04	5E-04
ANNPRESSLO	Annulus pressure drops below injection pressure	From Fault Tree	9E-14	7E-12	8E-11
CAPLOSS	Loss of injection zone capacity results in overpressurization	Uniform	1E-05	1E-04	1E-03
CHECKPA	Annulus check valve fails open	Triangular	1E-04	3E-04	1E-03
CONFINEBRCHL	Transmissive breach occurs through lower confining zone	From Fault Tree	6E-04	3E-03	1E-02
CONFINEBRCHU	Transmissive breach occurs through upper confining zone	From Fault Tree	6E-04	3E-03	1E-02
CONTROLPA	Annulus pressure control system fails resulting in underpressurization	Uniform	1E-06	1E-05	1E-04
CONTROLPI	Injection pressure control system fails resulting in overpressurization	Uniform	1E-06	1E-05	1E-04
DETECTWELL	Failure to identify abandoned well in AOR	Uniform	1E-03	5E-03	1E-02
DISCONT	Presence of unidentified transmissive discontinuity	Uniform	1E-04	1E-03	1E-02
EXTRACT	Extraction of injection zone groundwater	Uniform	1E-05	1E-04	1E-03
FLUIDTEST	Testing fails to detect injection fluid migration along outside of long string casing	Uniform	5E-04	3E-03	5E-03
INCOMPWASTE	Waste injected that is chemically incompatible with geology or previously injected waste	Uniform	1E-05	5E-05	1E-04
ITUBFAIL	Sudden/major failure and breach of injection tube	Poisson	3E-07	6E-07	8E-07
ITUBLEAK	Injection tube leak	Poisson	3E-05	6E-05	8E-05
LBUOYANCY	Injected fluid is sufficiently buoyant to penetrate lower confining zone breach	Single Value	1E+00	1E+00	1E+00
LOCATION A	Long string casing leak is located between surface casing and uppermost confining zone	Uniform	1E-02	3E-02	5E-02
LOCATION B	Long string casing leak is located above base of surface casing	Uniform	1E-02	5E-02	1E-01
LOCATION C	Long string casing leak is located below confining zone(s)	Uniform	9E-01	9E-01	1E+00
LSCASEFAIL	Sudden/major failure and breach of long string casing	Poisson	2E-07	3E-07	5E-07
LSCEMLEAK	Long string casing cement microannulus allows fluid movement along casing	Poisson	2E-06	6E-06	1E-05
LSTRINGLEAK	Long string casing leak	Poisson	2E-05	3E-05	5E-05
MIGRATION_A	Waste migrates up microannulus to Location A between surface casing and upper confining zone	Uniform	1E-04	1E-03	1E-02
NORECOGNIZE	Failure to recognize that groundwater extraction is located within injection waste zone	Uniform	1E-03	5E-03	1E-02
OPERINJ	Operator fails to recognize changes in confining zone capacity	Uniform*	5E-05	3E-05	5E-04
OPERRDET	Operator fails to detect/respond to unnacceptable pressure differential	Uniform*	5E-05	3E-05	5E-04
OPERRFRAC	Operator error results in induced transmissive fracture through lower confining zone	Uniform*	5E-05	3E-04	5E-04
OPERRPA	Operator error causes annulus pressure below injection pressure	Uniform*	5E-05	3E-04	5E-04
OPERRPI	Operator error causes injection pressure above annulus pressure	Uniform*	5E-05	3E-04	5E-04
OUTAOR	Injection waste has migrated outside of Area of Review to unconfined zone	Uniform	1E-05	5E-05	1E-04
PACKFAIL	Sudden/major failure and breach of packer	Poisson	2E-07	4E-07	6E-07
PACKLEAK	Packer leak	Poisson	2E-05	4E-05	6E-05
PERMEA	Confining zone has unexpected transmissive permeability	Uniform	1E-05	1E-04	1E-03
PLUGFAIL	Identified abandoned well plug fails	Poisson	2E-04	8E-04	2E-03
PUMPPA	Annulus pump fails	Triangular	5E-05	5E-04	5E-03
RELDETECT	Groundwater monitoring fails to detect waste release outside injection zone	Single Value	5E-01	5E-01	5E-01
SEISMFAULT	Seismic event induces a transmissive fault or fracture	Uniform	1E-05	5E-05	1E-04
SURFCASELEAK	Surface casing leak	Poisson	2E-06	3E-06	5E-06
TRANSLCZ	Unidentified abandoned well is transmissive from injection zone through lower confining zone	Single Value	1E-01	1E-01	1E-01
TRANSUSDW	Unidentified abandoned well is transmissive through upper confining zone to USDW	Single Value	1E-01	1E-01	1E-01
UBUOYANCY	Injected fluid is sufficiently buoyant to penetrate upper confining zone breach	Same as OPERRDET	1E-05	5E-05	1E-04
WASTEPRESENT	Injected waste has not transformed into non-waste	Uniform	1E-02	1E-01	1E+00

Frequencies are per day or per demand

* Operator error event probability distributions are correlated (r=0.5) to account for same operator or similar training

QUANTITATIVE ANALYSIS OF EVENT TREES

In PRA, event frequencies are combined according to the logic of the event and fault trees using Boolean algebra. The result is the estimated frequency (or probability) of a release to the lowermost USDW over the lifetime of the Class I hazardous waste injection well. Since uncertain event frequencies in this assessment were characterized by probability distributions, these distributions were propagated through the Boolean algebra calculations using Monte Carlo analysis. The result is expressed as a distribution of the probability that waste isolation will be lost during the lifetime of

the injection well. This approach enables one to draw conclusions as to the certainty of the waste isolation loss risk estimates and conduct sensitivity analyses to identify which individual events contribute the most uncertainty to the risk estimates. To facilitate such analysis, both fault and event tree probabilities were placed into Excel™ spreadsheets while the random sampling and generation of stochastic results was performed using Crystal Ball™. Latin Hypercube Sampling (LHS) was used to generate the input values for all distributions. The analysis was performed with 5,000 iterations to provide the best possible estimate of the percentiles. For operator errors likely to involve the same operator or similarly-trained operators, the frequency distributions were correlated. A parametric sensitivity analysis was also performed based on percent contribution of uncertain event frequencies to overall variance in the loss of waste isolation probability distribution.

PROBABILISTIC RISK ASSESSMENT (PRA) RESULTS

Using the event and fault trees, the risk of waste isolation loss and release to the USDW over the 30 year life of a Class IH hazardous waste injection well was characterized quantitatively. Most of the trees represent the daily probability of the event sequence, and their results are converted into 30 year probabilities for presentation below. Events that are independent of time (*i.e.*, inadvertent injection zone extraction) are presented as event probabilities. The cumulative percentile results of the analysis for each event sequence are presented in Table 3. Values shown in Table 3 are probabilities of the loss of waste isolation (i.e., release to the lowermost USDW) over the lifetime of the well. The cumulative percentile is the likelihood of being less than or equal to (i.e., of not exceeding) the corresponding loss of isolation risk.

Table 3
Cumulative Percent Results for Each Loss of Waste Isolation Event Class I Hazardous Well

Cumulative percentile is the likelihood of being less than or equal to (i.e., not exceeding) the corresponding loss of isolation risk.

Cumulative Percentile	Packer Leak	Packer Sudden Failure	Injection Tube Leak	Injection Tube Sudden Failure	Cement Microannulus	Confining Zones Fail	Inadvertent Extraction
0%	2.05E-20	7.73E-10	3.31E-20	1.15E-09	0.00E+00	5.05E-12	2.35E-10
10%	5.35E-19	2.05E-09	8.46E-19	3.22E-09	1.78E-08	6.37E-11	3.55E-09
25%	1.18E-18	2.82E-09	1.85E-18	4.45E-09	4.33E-08	1.20E-10	1.22E-08
50%	2.67E-18	4.08E-09	4.19E-18	6.35E-09	1.35E-07	2.38E-10	4.79E-08
75%	5.76E-18	5.53E-09	8.98E-18	8.54E-09	4.50E-07	4.80E-10	1.94E-07
90%	1.11E-17	7.00E-09	1.77E-17	1.06E-08	1.04E-06	8.98E-10	6.41E-07
100%	9.12E-17	1.32E-08	1.09E-16	2.08E-08	4.57E-06	6.39E-09	8.64E-06

Packer Leak

The initiating event in this sequence is the development of a leak in the packer at the base of the injection tube and pressurized annulus (See Figure 2). If the packer leaks during injection, containment is maintained as long as the annulus pressure is greater than the injection pressure. If the annulus pressure drops, containment will still be maintained by the long string casing. A leak in the long string casing may occur, but its location will be critical since this determines what

additional failures must occur to lose containment. A long string casing leak in the area between the bottom of the surface casing and the upper confining zone (Location A) was assumed to result in a release to the lowermost USDW, even though current regulations require the surface casing to be set below the base of the lowermost USDW into a confining bed. Also there may actually be significant geologic interaction between this point and the USDW. If the long string casing leak is located above the base of the surface casing, a release to the USDW requires either a leak in the surface casing or a crack (microannulus) open in the long string casing cement to Location A. A leak below the confining layer(s) requires a breach of the geologic barrier(s) or a microannulus to Location A.

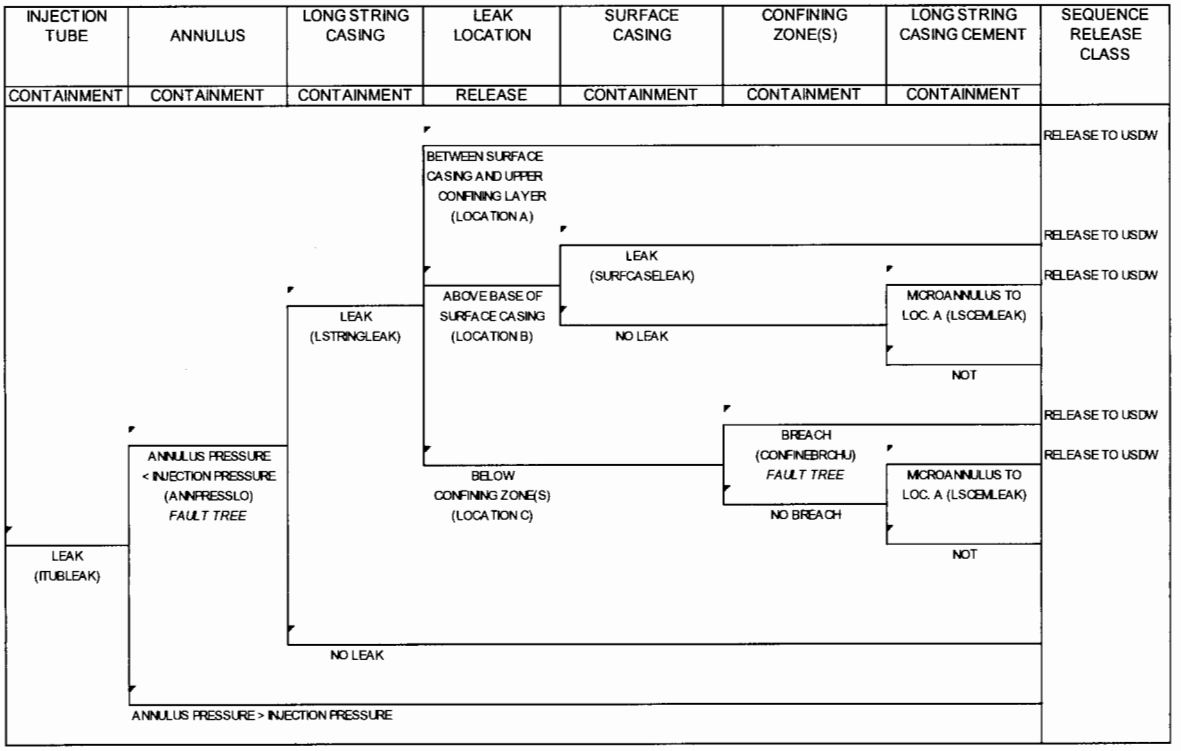


Figure 2
Packer Leak Event Tree Class I Hazardous Well

Two component failures in the event tree are described by fault trees: the first quantifies the probability that the annulus pressure is less than the injection pressure while the second addresses the probability that the confining zone is breached. These fault trees are presented in Figures 3 and 4, respectively, while the event probabilities associated with these fault trees can be found in Table 2.

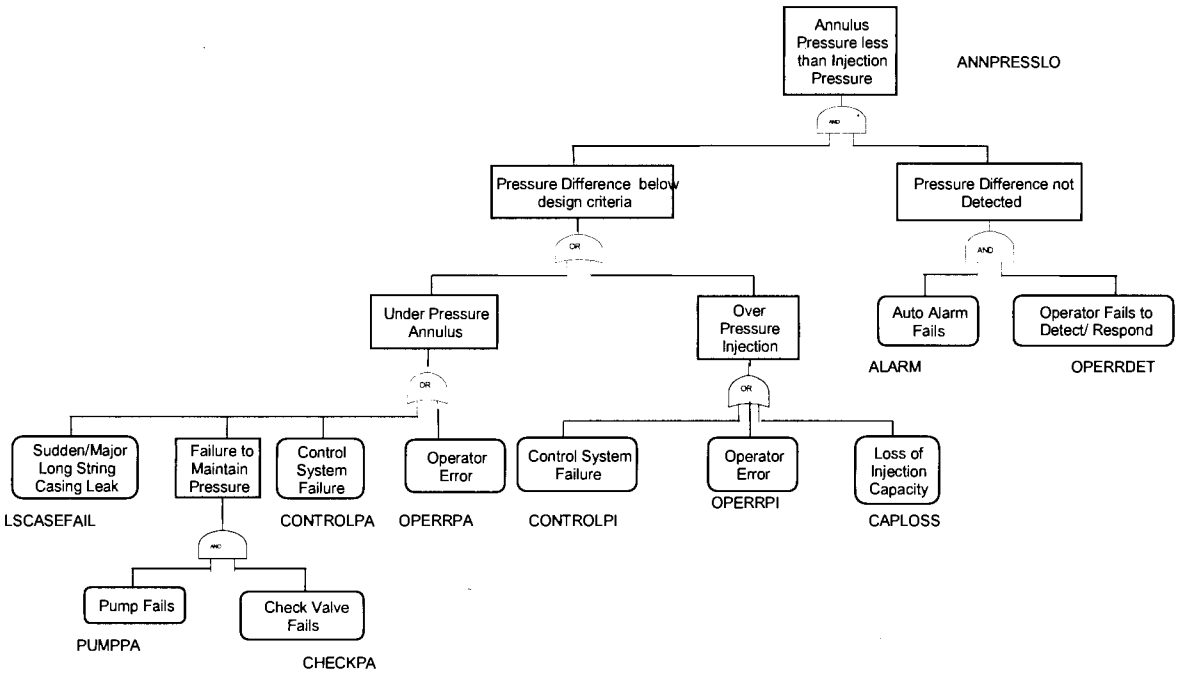


Figure 3
Annulus Pressure Barrier Failure Fault Tree Class I Hazardous Well

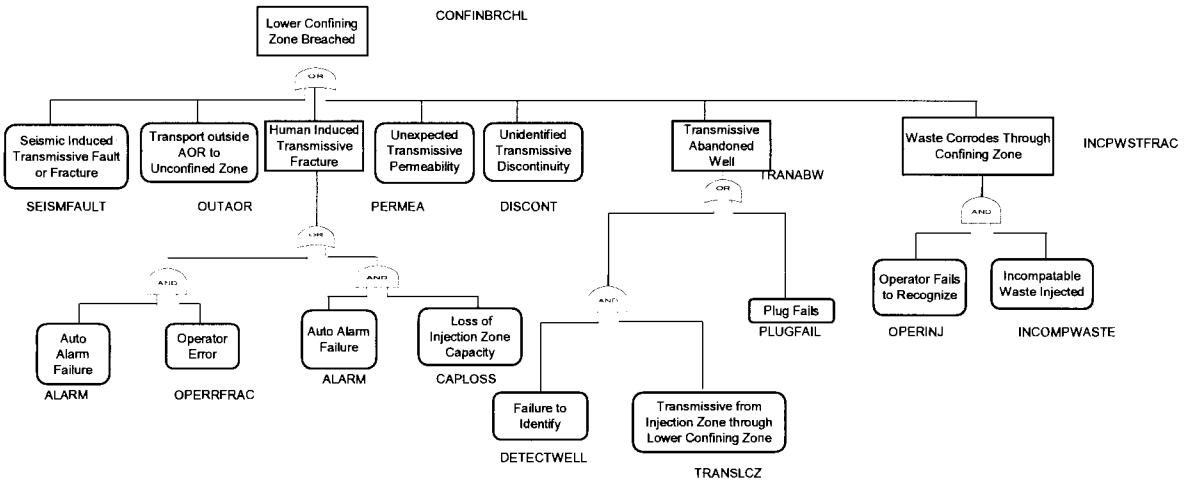


Figure 4
Lower Confining Zone Breach Fault Tree Class I Hazardous Well

The PRA results of the packer leak scenario indicate that the probability of waste isolation loss over the life of the well from this initiating event is on the order of 10^{-17} to 10^{-18} (see Table 3). The annulus pressure is the primary barrier to loss of containment and the probability of pressure loss is extremely low since it would require simultaneous alarm and full-time operator failures. In fact, the difference in pressure between the annulus and injection fluids do occur, but the high reliability of the redundant auto-alarm and full-time operator keep the probability of this resulting in a pressure

barrier loss during injection extremely low. Additionally, the location of a long string casing leak is a critical factor to waste isolation loss as it determines the presence or absence of additional barriers.

Major Packer Failure

This event is distinguished from the "Packer Leak" event in that it involves a complete and sudden loss of the packer and the subsequent rapid loss of annulus pressure (See Figure 5). Without the annulus pressure barrier, the containment now depends on the integrity of the long string casing and associated components. The sequence of component failure leading to waste isolation loss thereafter is similar to the packer leak tree except there is no annulus pressure barrier.

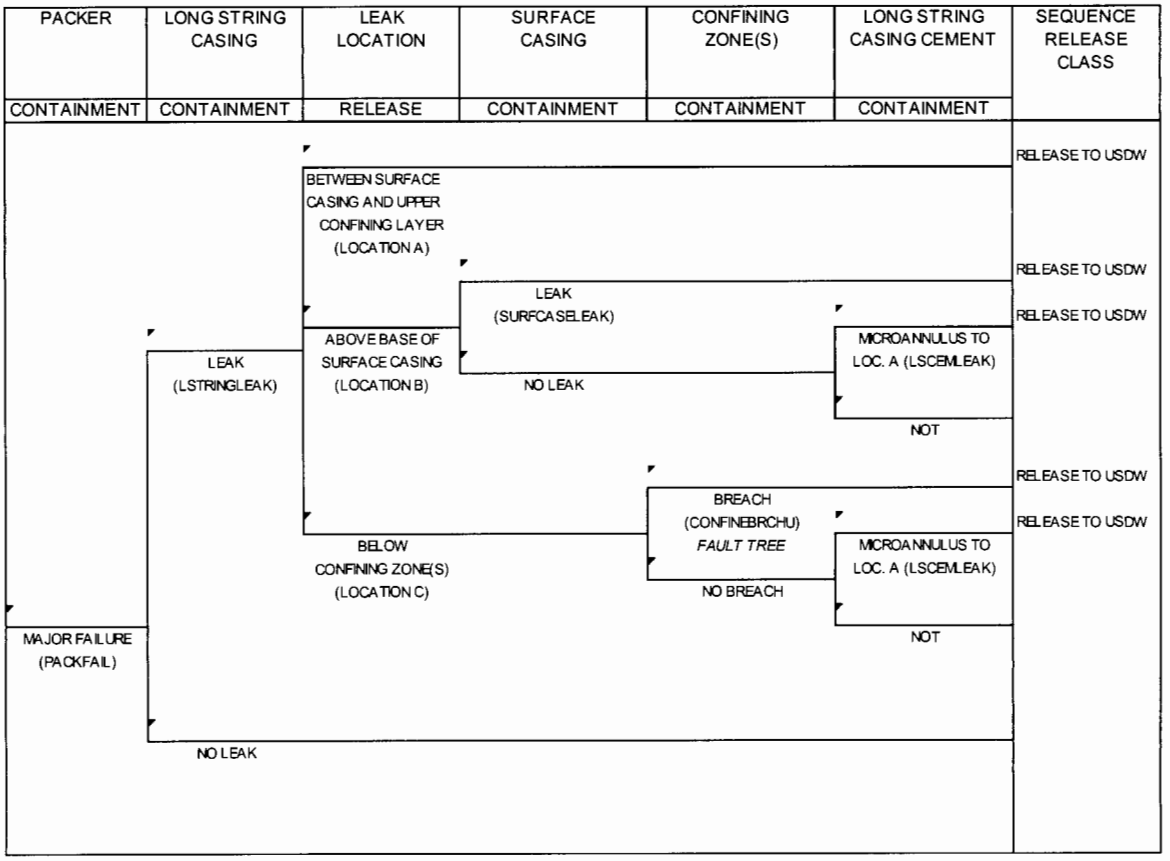


Figure 5
Packer Major Failure Event Tree Class I Hazardous Well

A major packer failure is a lower probability event than a packer leak. Despite this, the assumed absence of annulus pressure eliminates an important barrier to waste isolation loss and results in a higher risk than for a simple packer leak, on the order of 10^{-8} to 10^{-9} (see Table 3). With the loss of pressure, the waste is assumed to mix in the annulus fluid in the column. As above, the location of the long string casing is a critical factor to waste isolation loss.

Injection Tube Leak

This initiating event involves a leak in the injection tube above the packer (See Figure 6). Since it is

not a catastrophic failure, annulus pressure is maintained. Aside from the location of the leak, the events and the sequence leading to containment loss is identical to that of the packer leak scenario. Similar to the packer leak, the results indicate that the probability of waste isolation loss over the life of the well is extremely low, on the order of 10^{-17} to 10^{-19} (see Table 3). As with the packer leak, the annulus pressure is the primary barrier to loss of containment. Additionally, the location of the long string casing remains a critical factor to waste isolation loss to the accessible environment.

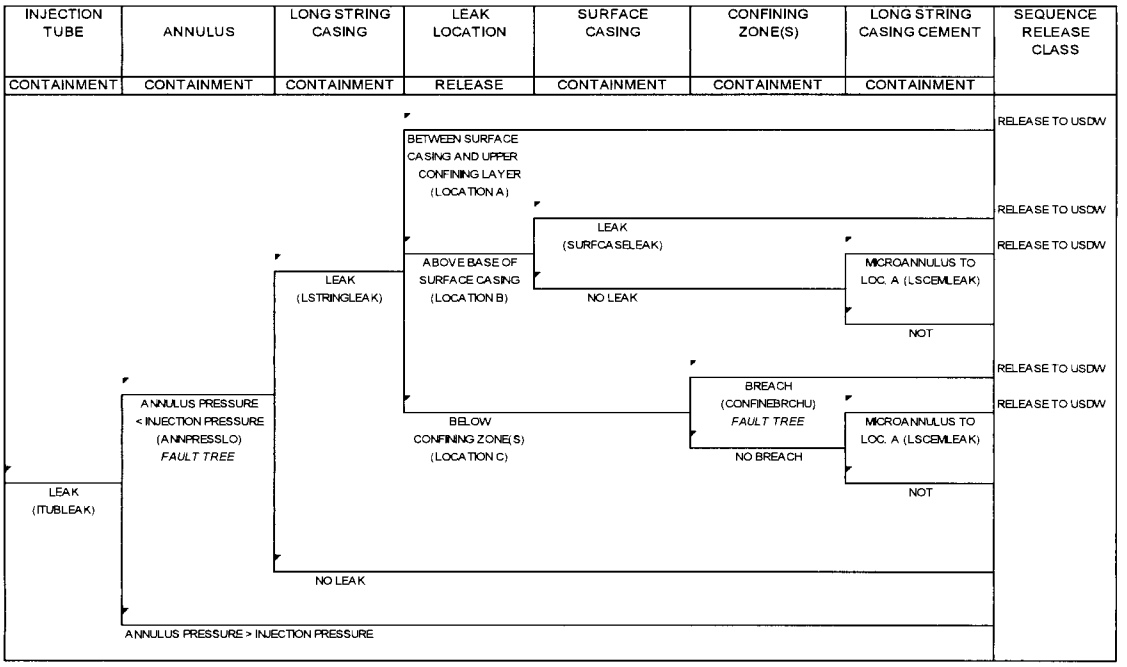


Figure 6
Injection Tube Event Tree Class I Hazardous Well

Major Injection Tube Failure

This initiating event is similar to the major packer failure and characterized by a catastrophic failure of the injection tube above the packer with the resulting loss of annulus pressure (See Figure 7). Aside from the location of the failure, the events and the sequence leading to possible containment loss is identical to that of the major packer failure scenario discussed above.

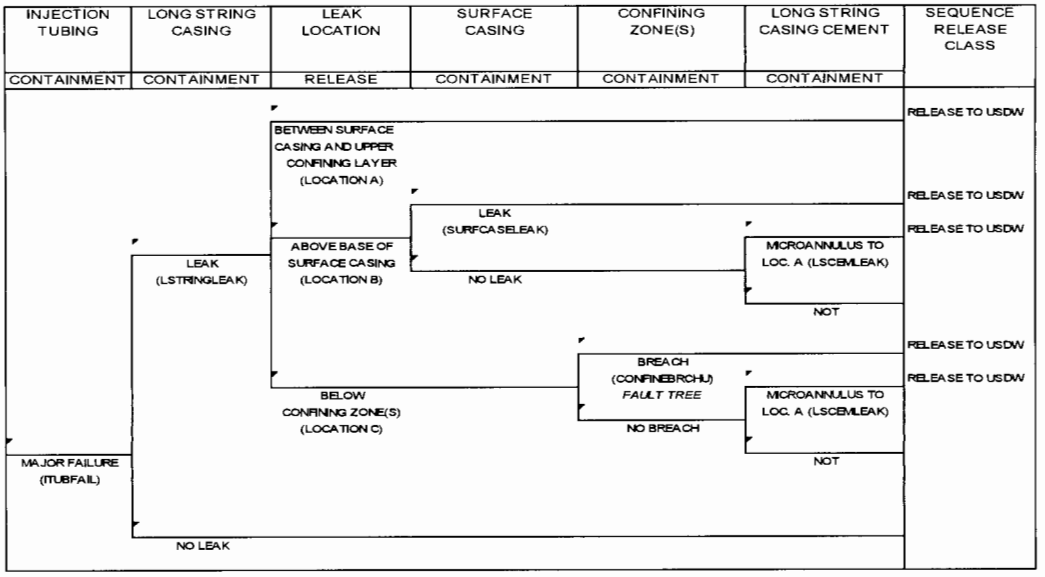


Figure 7
Injection Tubing Major Failure Event Tree Class I Hazardous Well

A major injection tube failure is a lower probability event than an injection tube leak. As with the major packer failure, the assumed immediate loss of annulus pressure eliminates an important barrier to waste isolation loss and results in a higher risk than a simple leak of the injection tube, on the order of 10^{-8} to 10^{-9} (see Table 3). With the loss of positive pressure, the waste is assumed to mix in the annulus fluid and escapes through the leak in the long string casing. As in all these scenarios, the location of the long string casing is a critical factor to waste isolation loss.

Cement Microannulus Failure

Radiotracer studies are performed annually on Class IH wells to detect migration. This event sequence involves the possibility that an extended vertical opening (i.e., microannulus) in the cement surrounding the long string casing remains undetected and results in waste isolation loss (See Figure 8). The cement extends from the surface through all confining layers to the injection zone. Should a microannulus crack open in the cement, extend from the injection zone through the upper confining zone and remain undetected, waste injected under pressure could possibly migrate up to Location A and then to the USDW. Alternatively, waste could migrate only up to a location below the upper confining zone, then the upper confining zone could breach. An additional fault tree is needed to estimate the probability that the upper confining zone will be breached. This fault tree is presented in Figure 9 with the corresponding probabilities presented in Table 2.

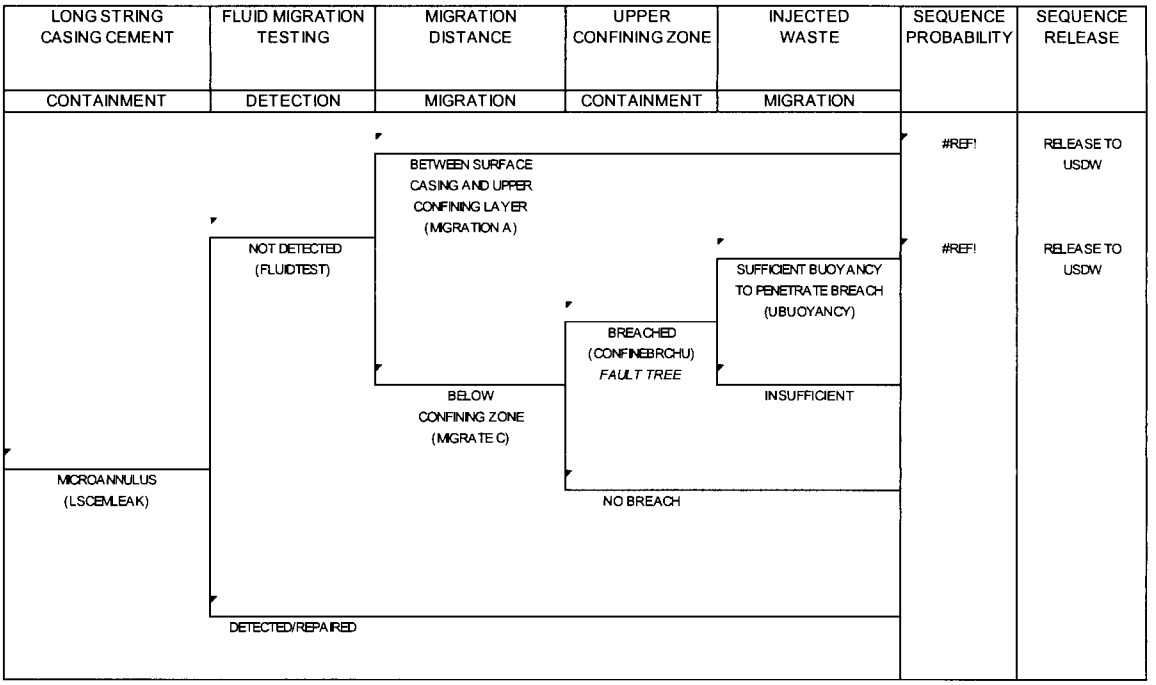


Figure 8
Cement Microannulus Event Tree Class I Hazardous Well

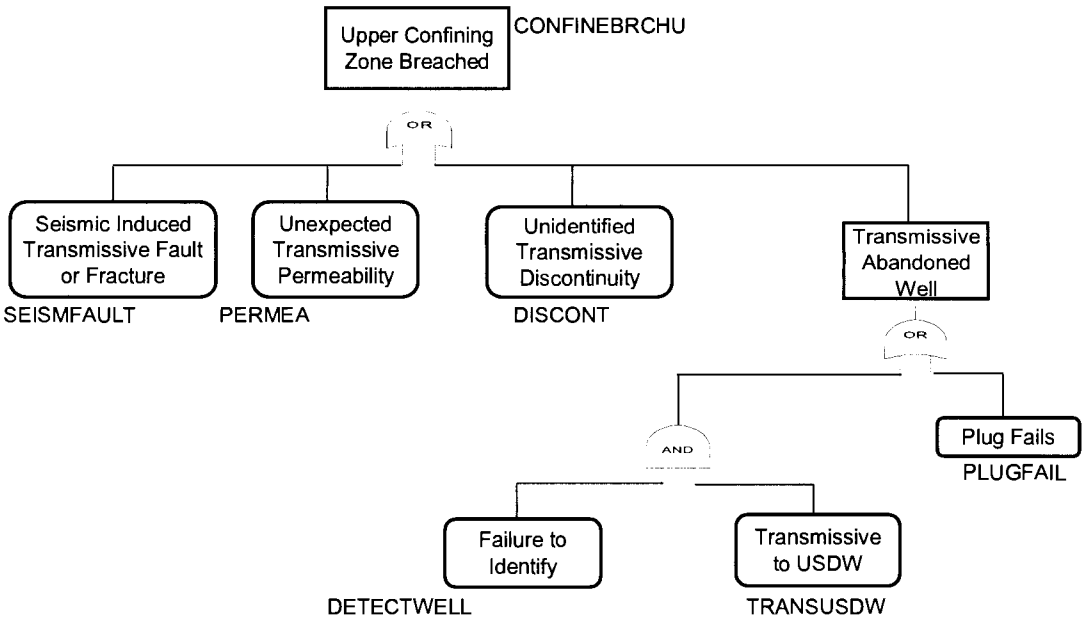


Figure 9
Upper Confining Zone Breach Fault Tree Class I Hazardous Well

The probability that loss of waste isolation will result under this scenario was calculated to be on the order of 10^{-6} to 10^{-8} (see Table 3). The event sequence is controlled by the location to which the microannulus extends. In this case, it was assumed to extend from the injection zone to the USDW. The greatest uncertainty lies in whether such an extended and transmissive microannulus will occur and if the waste fluid can travel that far given that the injection zone represents the path of least resistance to the pressurized waste stream. Additionally, the annual testing for fluid migration also limits the risk to loss through this mechanism.

Confining Zone Breach

The initiating event in this scenario is a transmissive breach of the lower confining zone (directly above the injection zone) (See Figure 10). The probability of this event is based on the fault tree analysis first developed for the packer leak (Figure 4). Once the lower confining zone is breached, the remaining barriers to waste isolation loss are:

1. the waste is sufficiently buoyant to penetrate the lower confining zone breach;
2. groundwater monitoring fails to detect waste outside of the injection zone;
3. the upper confining zone is breached; and
4. the waste is sufficiently buoyant to penetrate the upper confining zone breach.

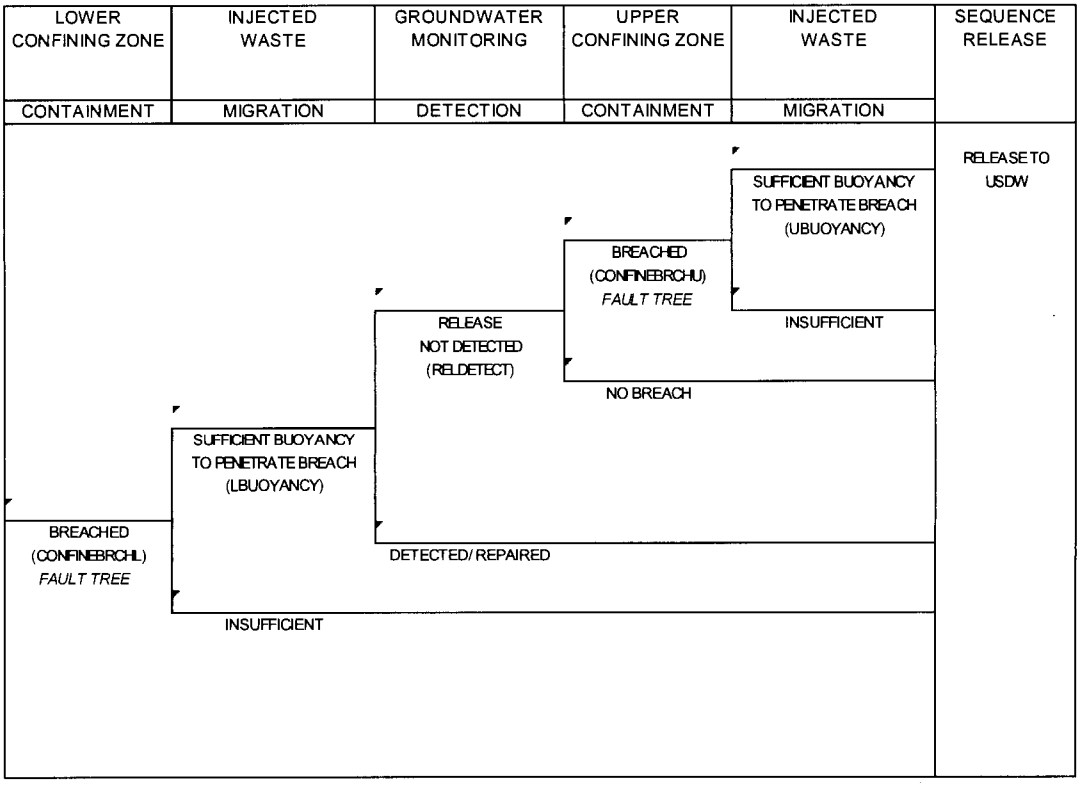


Figure 10
Confining Zone (s) Breach Event Tree Class I Hazardous Well

A breach in the confining zone requires that all confining zones must be completely breached with transmissive openings. This must remain undetected in spite of on-going monitoring of pumping pressure and volumes, injection zone pressure and groundwater quality. Additionally, the waste must have a driving force in all zones in order to be sufficiently buoyant to penetrate to the USDW above, and no bleed-off must occur into the buffer aquifers between the confining zones. This scenario has a probability of loss of waste isolation on the order of 10^{-10} (see Table 3).

Inadvertent Injection Zone Extraction

Given the depth of most injection wells, future human intrusion into the injection zone is unlikely (See Figure 11). An extraction scenario also does not rely on any additional components of the operating system. The initiating event assumes extraction of injected waste with the additional sequence probabilities included to assess the possibility that the extraction of the injection zone material goes unnoticed by the well user. The time domain is not relevant as all such activities are assumed to be post-closure of the system.

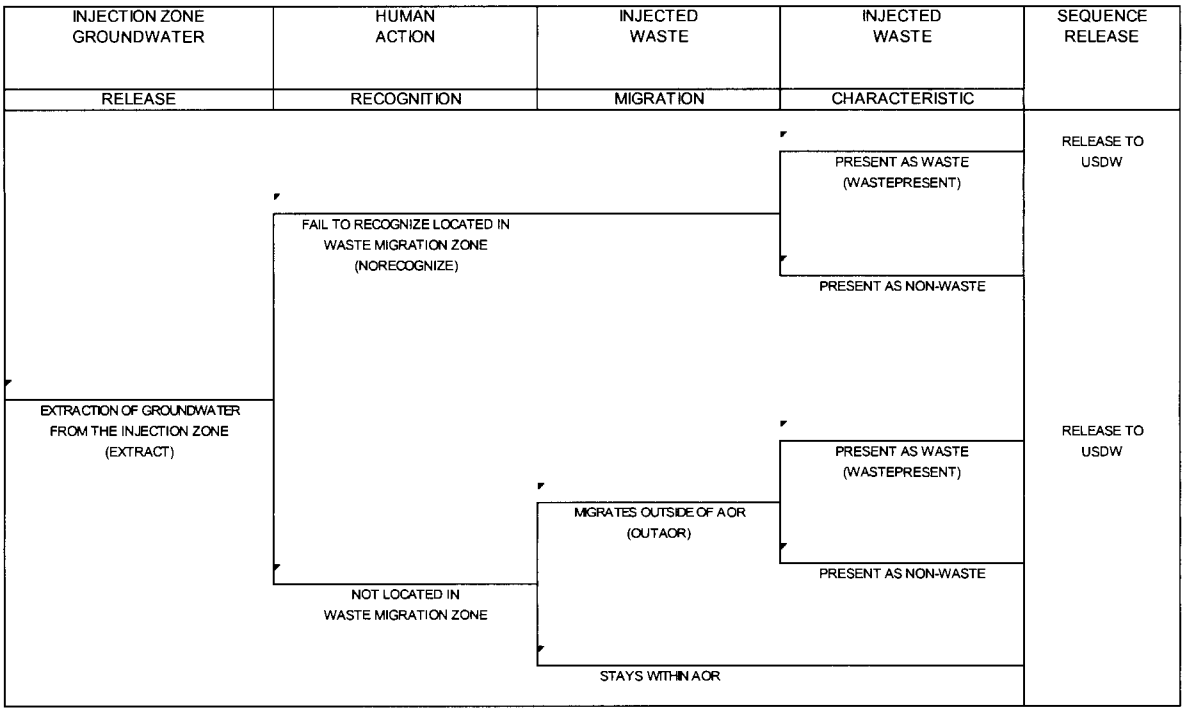


Figure 11
Inadvertent Injection Zone Water Extraction Event Tree Class I Hazardous Well

This scenario is the most difficult to estimate the probability of occurrence. Even so, the possibility that extraction of isolated waste will occur post-closure was calculated to be less than 10^{-6} (see Table 3). Since injection zones are more than 1,000 feet deep and presumably underlie most accessible and higher quality aquifers, it is unclear why water from the injection zone would be extracted by anyone. Depending on timing and location, the waste may no longer present a potential hazard or the plume may not be intersected by the extraction wells.

Incompatible Waste Injection

The issue of incompatibility of wastes and well components or geologic formations was covered under the outcomes of the other event trees. Carbon dioxide or other gas formation may result in packer blow-out, rupture of the injection tube, transmissive geologic fracturing, or well head blow-out. Each of these events are covered by the event trees for packer or injection tube failure, the fault tree for confining zone breaches, or are considered spills and not relevant to this evaluation. Corrosion of rock or other system components are covered under the fault tree for the lower confining zone breach or the event tree for the relevant system component (*i.e.*, injection tube leak or failure). A chemical interaction may also result in a plug forming in the system resulting again in packer blow-out, failure of the injection tube, or fractures of the different confining zones in response to a pressure build-up. These are addressed by the event trees for the confining zone breach, the packer or injection tube failure, or the fault tree for the breach of the lower confining zone.

OVERALL LOSS OF WASTE ISOLATION RESULTS

Based on the PRA conducted for Class IH wells, the 90th percentile risks for the individual scenarios detailing the potential loss of waste isolation range from a low of 10^{-17} (packer leak) to a high of 10^{-6} (cement microannulus) (See Figure 12). The probability for all events combined (assuming that these risks are additive) resulting in loss of waste isolation is between 10^{-6} and 10^{-8} (Figure 12). The event sequences that are predominant contributors to overall risk are the microannulus failure and the possibility of inadvertent future extraction. The sensitivity analysis (Figure 13) identified the following contributions to overall uncertainty about probability of loss of waste isolation:

- distance that waste migrates along a vertical cement microannulus (52% of the variance);
- likelihood of future extraction from the injection zone (17% of the variance);
- probability that at the time of future extraction the waste is no longer hazardous or the plume is not present (15% of the variance);
- likelihood that the fluid testing fails to detect migration (8% of the variance); and
- likelihood that the extracted material is unrecognized as waste by the well user (3% of the variance).

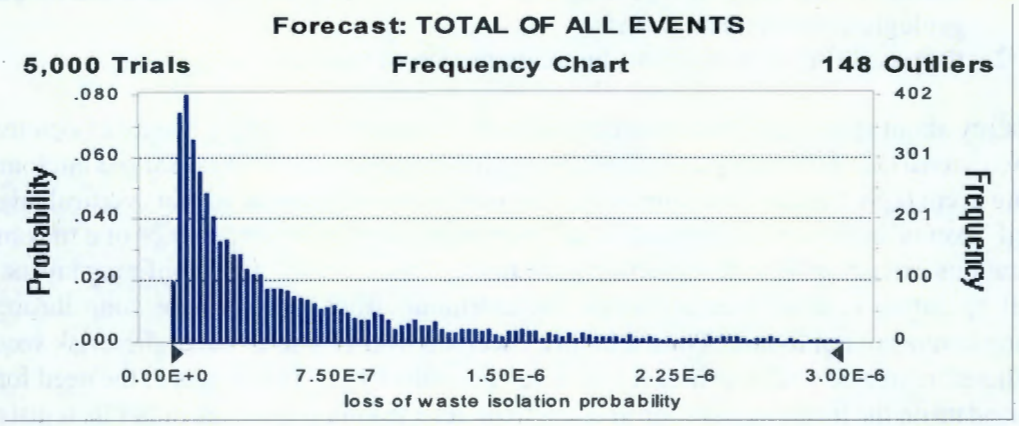


Figure 12. Probability Distribution Loss of Waste Isolation Total Risk Class I Hazardous Well

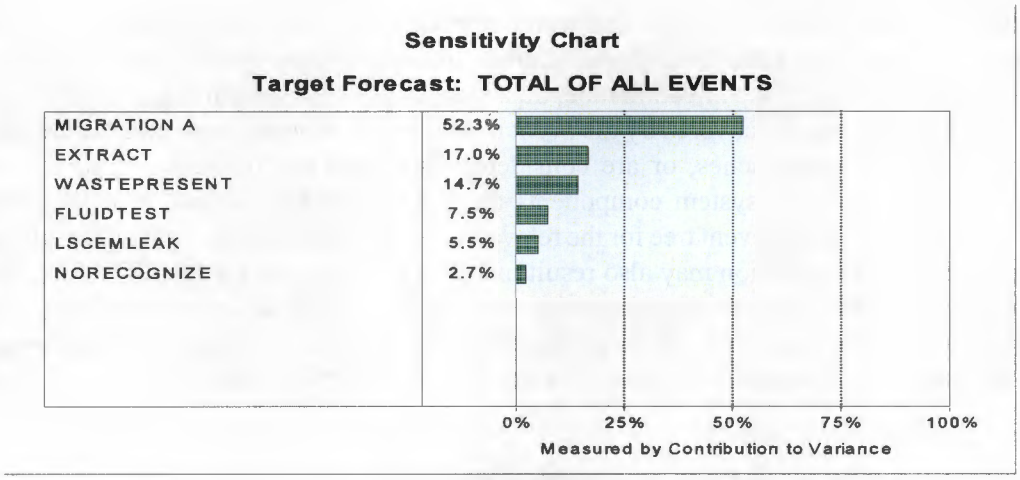


Figure 13
Sensitivity Chart Relative Contributions to Overall Uncertainty About Loss of Waste Isolation Risk

CONCLUSIONS AND RECOMMENDATIONS

Because of the conservative assumptions used for failure event probabilities and the explicit treatment given to uncertainties in this analysis, we believe that the risk of loss of waste isolation from Class IH wells is less than 10^{-6}. The low risk is due in large measure to the use of redundant engineered systems and geology to provide multiple and diverse barriers to prevent release to the accessible environment. This is aided in part by the fact that deep well injection is a simple design relying on passive systems to limit failure modes and frequencies to a minimum. The annulus pressure is a critical barrier and performance monitor, but displays high reliability due to the presence of automatic alarms, shut-offs, and full-time operators.

The risk that waste isolation is lost is dominated by two failure scenarios:

1. the possibility that a transmissive microannulus develops in the cemented borehole outside of the long string casing and it extends from the injection zone up past the geologic confining zones, and
2. the possibility of inadvertent future extraction of injected waste.

Uncertainty about the overall risk to waste isolation is also dominated by events associated with these two scenarios. For example, in developing the frequency distribution for the microannulus initiating event (LSCEMLEAK in Figure 8), it was conservatively assumed that "vertical migration detected" events in the well failure database[40] were equivalent to the occurrence of a transmissive microannulus extending from the injection zone through one or both of the confining layers. Class IH well operators contend that microannulus extending from the injection zone through the confining layers are not found. Thus, a highly uncertain event initiates the highest risk sequence, and is therefore treated with significant conservatism in the PRA. This points to the need for more complete data on the location, duration and length of detected microannulus, rather than just noting the number of times that vertical migration is detected.

Numerous conservative assumptions were used in this PRA that, combined with the explicit treatment of uncertainty given (i.e., the Monte Carlo analysis) lend confidence to the conclusions of low risk. Credit was not taken for any cement as a horizontal barrier to waste migration. Likewise, in using the well failure database[40], all events termed "failure" for packers, tubing and casing were assumed to be breaches of sufficient size and duration to transmit waste. As explained above, "vertical migration detected" events were similarly assumed to represent a complete transmissive pathway from the injection zone up past the geologic confining layer(s). In the event of a breach of the confining layers, the buoyancy of the waste and the injection pressure was assumed to be high enough to drive migration through breaches of multiple confining layers. The significant bleed-off and attenuation that occurs in the intervening buffer aquifers was not taken into account. Only two geologic confining layers were assumed throughout this PRA when survey information indicates that three or more confining zones are usually present. Published human error data were used as the lower bound on probability distributions for these events that assumed equal probability that error rates can be an order of magnitude higher than published rates. Automatic shutdown of the injection well pumps is a usual operating feature of most Class IH wells. For this PRA, no automatic shutdown was assumed. It was further assumed that a release between the surface casing and the upper confining zone was equivalent to a release to the USDW, and that releases below the confining zones involved only one confining zone barrier to the USDW. Finally, the timing between independent occurrences in the various event and fault trees was assumed to be coincident for sufficient duration prior to detection and corrective action that a release could occur.

Since the failure location and timing of the individual events are critical to the development of these release scenarios, uncertainty would be reduced and knowledge improved if this information was collected and included in the databases maintained on Class I well failures. The presence, degree of training, and diligence of the human operator is important to preventing system failure and loss of waste isolation. This is especially critical in maintaining the annulus pressure, which is a major barrier to loss of waste from the system. Uncertainty over the existence and transmissivity of extended vertical cement breaches is important. Experimental or field data on the microannulus assumed to exist in these scenarios would assist in reducing this uncertainty and improving the risk estimates. Finally, we recommend that future assessments of the potential environmental risks associated with deep well injection explicitly take into account the probability of release and the amount of waste that could be released by the mechanisms of feasible system failure scenarios.

REFERENCES

1) Buss, D.R. et al. *A Numeric Stimulation Study of Deep-Well Injection in Two Hydrogeologic Settings -- Texas Gulf Coast, Great Lakes Basin.* GeoTrans, Inc. (June 20, 1984).

2) Buttram, J.R. *Operation and Maintenance of Underground Injection Wells.* Ground Water Monitoring Review. pp. 64-67 (Summer 1986).

3) CH2M Hill. *A Class I Injection Well Survey. Phase II Report - Performance Evaluation.* Prepared for Underground Injection Practices Council. Oklahoma City, OK. D19976.S2.00 (May 1986).

4) CH2M Hill. *A Class I Injection Well Survey Phase I Report. Survey of Selected Sites.* Prepared for Underground Injection Practices Council. Oklahoma City, OK. D19976.S1 (April 1986).

5) Clark, J.E. *Environmental Scoring Without Risk Assessment.* Presented at Clean Texas 2000 - Environmental Trade Fair. E.I. du Pont de Nemours and Co., Inc. (April 14, 1994).

6) Clark, J.E. *Factors That Can Cause Abandoned Wells to Leak as Verified by Case Histories from Class II Injection,*

Texas Railroad Commission Files. Underground Injection Practices Council, Proc. of the International Symposium on Substance Injection of Oilfield Brines (May 1987).

7) Clement, R.T. Making Hard Decisions: An Introduction to Decision Analysis. pp. 253-254 (PWS-KENT Publishers, 1991).

8) Davis, S. *Responses to Questions from the Chemical Manufacturers Association.* Submitted to Chemical Manufacturers Association by Department of Hydrology and Water Resources. University of Arizona. Tucson, Arizona (April 10, 1987).

9) Davis, M.L. and D.G. Satterwhite. *Summary Procedures Guide for Application of Risk and Hazards Analysis Techniques.* EG&G, Idaho (1988).

10) Department of Energy and Natural Resources et al. *Illinois Scientific Surveys Joint Report 2. Evaluation of Underground Injection of Industrial Waste in Illinois* (1989).

11) Don L. Warner, Inc. and Engineering Enterprises, Inc. *Confining Layer Study.* Prepared for U.S. EPA Region V (December 1984).

12) Engineering Enterprises, Inc., Geraghty & Miller, Inc. and Ken E. Davis Associates. *Class I Hazardous Waste Injection Wells Evaluation of Non-Compliance Incidents.* Prepared for U.S. Environmental Protection Agency. Washington, D.C. (September, 1986).

13) Envirosphere Company. *Draft Task Report. Below Regulatory Concern Waste Accident Scenario Dose Assessment Task 1: Unexpected Event/Accident Identification.* Prepared for Electric Power Research Institute, Palo Alto, California (February 1988).

14) Goolsby, D.A. *Geochemical Effects and Movement of Injected Industrial Waste in a Limestone Aquifer.* U.S. Geological Survey, Tallahassee, FL. (1972).

15) Gordon, W. and J. Bloom. *Deeper Problems: Limits to Underground Injection as a Hazardous Waste Disposal Method.* Natural Resources Defense Council, Inc. (1985)

16) *Journal of the Underground Injection Practices Council. Vol. 1* (1986).

17) Ken E. Davis Associates. *Conclusions and Recommendations on the Assessment of Fourteen Alleged Class I Well Failures.* Keda Project No. I 001633. Houston, TX (May 1986).

18) Lannoy and Procaccia. *European Industry Reliability Databank* (1996).

19) MacLean, A. and R. Puchalsky. *Where the Wastes Are: Highlights from the Records of the More than 5,000 Facilities that Receive Transfers of TRI Chemicals.* OMB Watch and Unison Institute (April 1994).

20) McCormick. Reliability and Risk Analysis. Chapter 3. (Academic Press, Inc., San Diego, 1981).

21) Meritt, M.L. *Digital Simulation of the Regional Effects of Subsurface Injection of Liquid Waste Near Pensacola, Florida.* U.S. Geological Survey. Prepared in cooperation with the Florida Dept. of Environmental Regulation. Tallahassee, FL (1984).

22) Miller, C. et al. *Flow and Containment of Injected Wastes.* Ground Water Monitoring, Review. pp. 37-47 (Summer 1986).

23) Morgan, P.G. *A Closer Look at "Deeper Problems" - A Response to Those Who Would Ban Hazardous Waste Disposal by Underground Injection: The New Mexico Experience.* New Mexico Environmental Improvement Division, Underground Injection Control Program (1985).

24) Morganwalp, D.W. and R.E. Smith. *Modeling of Representative Injection Sites.* (1988).

25) Paque, M.J. *Class I Injection Well Performance Survey.* Ground Water Monitoring Review. pp. 68-69 (Summer 1986).

26) Scrivner, N.C. et al. *Chemical Fate of Injected Wastes.* Ground Water Monitoring Review. pp. 53-57 (Summer 1986).

27) SCS Engineers. *Final Report. Summary of Chemical Manufacturers Association Underground Injection Well Survey.* Prepared for CMA UIC Work Group. Washington, D.C. (February 1985).

28) Sierra Club Legal Defense Fund. E. P. Jorgensen, editor. The Poisoned Well. New Strategies for Groundwater Protection. Island Press. Washington, D.C. (1989).

29) Swain, A.D. and A.L. Guttman. *Handbook of Human Reliability Analysis with Emphasis on Nuclear Power Plant Applications*. NUREG/CR-1278. Scandia National Laboratories (1980).

30) Swain, A.D. *Accident Sequence Evaluation Program: Human Reliability Analysis Procedure*. NUREG/CR-4772, SAND86-1996 (February 1987).

31) The Cadmus Group, Inc. *Regulatory Impact Analysis of Proposed Hazardous Waste Disposal Restrictions for Class I Injection of Phase III Wastes*. Prepared for U.S. EPA, Office of Ground Water and Drinking Water, Jan. 12, 1995.

32) Underground Injection Practices Council. *A Class I Injection Well Survey. Phase II Report - Survey of Operations*. Oklahoma City, OK (December 1987).

33) Underground Injection Practices Council. *Injection Well Bibliography*. Oklahoma City, OK (January 1989).

34) Underground Resource Management, Inc. *Evaluation of a Subsurface Waste Injection System near Vickery, Ohio*. Prepared for the Ohio EPA (March 1984).

35) U.S. Environmental Protection Agency. *Report to Congress on Injection of Hazardous Waste*. EPA 570/9-85-003. U.S. EPA Office of Drinking Water. (May 1985).

36) U.S. Environmental Protection Agency. *OSWER Comparative Risk Project Executive Summary and Overview Report*. Washington, D.C. (September 1989).

37) U.S. Environmental Protection Agency. *Assessing the Geochemical Fate of Deep-Well-Injected Hazardous Waste. A Reference Guide*. EPA/625/6-89/025a. U.S. EPA Office of Research and Development. (June 1990).

38) U.S. Environmental Protection Agency. *Assessing the Geochemical Fate of Deep-Well-Injected Hazardous Waste. Summaries of Recent Research*. EPA/625/6-89/025b. U.S. EPA Office of Research and Development. (July 1990).

39) U.S. Environmental Protection Agency. *Analysis of the Effects of EPA Restrictions on the Deep Injection of Hazardous Waste*. EPA/570/9-91-031. U.S. EPA Office of Ground Water and Drinking Water. (October 1991).

40) U.S. Environmental Protection Agency. Letter from Martha G. Prothro, Acting Assistant Administrator, U.S. EPA Office of Water to Honorable John D. Dingell, Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives. Attachment W. (April 19,1993).

41) U.S. Environmental Protection Agency. *Draft UICWELLS Database*. U.S. EPA Office of Water, Underground Injection Control Branch. (April 1996).

42) U.S. Environmental Protection Agency. *1997 Toxics Release Inventory Public Data Release Report*. U.S. EPA Office of Prevention, Pesticides and Toxic Substances. (April 1999).

43) Visocky, A.P. et al. *Study of Current Underground Injection Control Regulations and Practices in Illinois*. Ground Water Monitoring Review. pp. 59-63 (Summer 1986).

44) Ward, D.S. et al. *A Numerical Evaluation of Class I Injection Wells for Waste Containment Performance*. GeoTrans, Inc. Prepared for U.S. EPA Office of Drinking Water, Underground Injection Control Program. (September 30, 1987).

45) Warner, D.L. and J.H. Lehr. *An Introduction to the Technology of Subsurface Wastewater Injection*. University of Missouri - Rolla and National Water Well Association. Prepared for Robert S. Kerr Environmental Research Lab, Ada, OK. (December 1977).

46) Wesson, R.L. and C. Nicholson. *Earthquake Hazard Associated with Deep Well Injection*. Prepared for U.S. EPA. U.S. Geological Survey. (June 1987).

47) Woodward Clyde Consultants. *Underground Injection Well Questionnaire*. Survey prepared for Chemical Manufacturers Association. (August 1995).

APPENDIX A

Basis for Event Frequency Probability Distributions

There are 39 events identified in the PRA (listed in Table 2 of the paper) for which failure rates are needed to calculate event tree and fault tree probabilities. For many of these events, occurrence is so rare and data are so sparse that a confident point estimate for the frequency of occurrence cannot be established. Directly applicable compilations of data on the frequency of most events were not found. In common practice, most component failure modes are identified and corrected during required testing and maintenance, and thus may not be recorded as a failure event per se. More than one third of the events involve some type of human error. There are available compilations of human error frequency data[29,30]; however, their direct applicability to the human tasks involved here is uncertain.

Consequently, uncertainty about occurrence frequencies was given explicit quantitative treatment in the PRA. Probability distributions of event occurrence frequencies were developed, either based on available occurrence data or expert judgement. In general, probability distributions for event frequencies were derived as follows.

1. A 1993 U.S. EPA reply to a House of Representatives subcommittee inquiry[40] provided state-by-state summaries of certain reported types of Class I injection well failure events between 1988 and 1992. Numbers of events were reported for 469 Class I wells (hazardous and nonhazardous) located in twelve states. Events reported included tubing leaks, casing leaks, packer leaks and waste migration on the outside of the long string casing (i.e., cement microannulus). The number of reported events was divided by 855,925 well-days (469 wells x 5 yrs x 365 days/yr) to derive an estimate of the average daily occurrence rate for each type of event. Since nonhazardous wells have less regulatory restrictions than hazardous, it was a conservatism to include these data.

   Modeling these failure rates with a binomial distribution, it is possible to determine the confidence intervals for a given average failure rate. Estimations of the 90th percentile upper confidence limit of the average failure rates were calculated using methods outlined by McCormick[20]. These are shown in the following table.

Component	Number of Reported Failures	90th Percentile Confidence Limit Of Average Failure Rate (day^{-1})
Tube	48	6.80E-05
Casing[1]	28	4.20E-05
Packer[1]	31	4.60E-05
Waste Migration[2]	5	1.10E-05

1. Three recorded "annulus leak" events were included because it could not be determined

if these were casing or packer related.

2. This category is assumed to be a surrogate for casing cement leak events.

Probability distributions representing uncertainty about the frequency rate of these events (ITUBLEAK, LSTRINGLEAK, PACKLEAK, LSCEMLEAK) were developed by using these upper confidence limits for the average rate as the rate parameter in a Poisson distribution. The Poisson distribution is commonly used in reliability analysis to describe random failures in a system that cause irreversible transitions in the system[20], such as a loss of waste isolation. The Poisson distribution requirements[20], which are met for this application, include:

- Events can happen at any time within the day
- The probability of an event is small
- Events can happen independently of other events
- The average number of events per day does not change with time

2. For events involving typical components of any industrial system such as valve, pump, control system or alarm failures, occurrence frequencies were obtained from available industrial reliability databases[9,13,18].

3. Most human errors rates were derived from available human reliability data for similar activities. Usually, these human error data have been compiled for highly trained and scrutinized occupations such as nuclear power plant operators[29,30] and firemen[9,13]. While Class I hazardous injection well operators arguably fall into this same category, in the assessment these rates were conservatively assigned as the lower bound of the distribution with an upper bound set at an order of magnitude higher rate.
4. For events in which data are entirely lacking, the authors relied on professional judgement, shaped in part by the experience of deep well operators and regulators elicited during workshops held in conjunction with Ground Water Protection Council national meetings. To account for uncertainty in professional judgement, relatively large bounds of uncertainty were applied to frequencies derived in this manner. When the uncertainty was high, the range of the distribution may span several orders of magnitude. In some cases the frequency was set at a maximum value, for example the probability that injected fluid is sufficiently buoyant to penetrate a lower confining zone breach was assumed to be 1.

The probability distributions representing uncertainty about event frequencies are summarized in Table 2 of the paper and discussed individually below.

Event:	ITUBLEAK
Description:	Injection tube leak
Probability:	Poisson distribution with 6.8E-05/day rate
Basis:	This event quantifies the probability that the injection tube carrying waste to the injection zone will develop a leak. Based on compilation of state-by-state data analyzed as discussed above.
Event:	ITUBFAIL
Description:	Sudden and major failure and breach of the injection tube

Probability: 1/100th of ITUBLEAK probability

Basis: ITUBFAIL assumes a sudden and major failure of the injection tube such that the annulus pressure is lost simultaneously. Based on professional judgement, the likelihood of the injection tube failing catastrophically was estimated to be 1/100th the probability of a leak. Thus the ITUBFAIL probability was assigned a value 0.01 times ITUBLEAK.

Event: ANNPRESSLO

Description: Annulus pressure drops below injection pressure

Probability: Determined by Fault Tree Analysis

Basis: Due to the multiple components associated with this failure event, an ANNULUS PRESSURE BARRIER FAILURE FAULT TREE (Figure 3 in paper) was developed and used to evaluate the event probability. The resulting cumulative distribution for this event frequency is:

10th percentile	1.5E-12
20th percentile	2.6E-12
30th percentile	3.8E-12
40th percentile	5.2E-12
50th percentile	7.0E-12
60th percentile	9.3E-12
70th percentile	1.2E-11
80th percentile	1.7E-11
90th percentile	2.4E-11

Event: LSTRINGLEAK

Description: Long string casing leak

Probability: Poisson distribution with 4.2E-05/day rate

Basis: Based on compilation of state-by-state data analyzed as discussed above.

Event: LSCASEFAIL

Description: Sudden and major failure and breach of the long string casing

Probability: 1/100th of LSTRINGLEAK probability

Basis: LCASEFAIL assumes a sudden and major failure of the long string casing such that the annulus pressure is lost simultaneously. Based on professional judgement, the likelihood of the long string casing failing catastrophically was estimated to be 1/100th the probability of a leak. Thus the LCASEFAIL probability was assigned a value 0.01 times LSTRINGLEAK.

Event: SURFCASELEAK

Description: Surface casing leak

Probability: Poisson distribution with 4.2E-06/day rate

Basis: The surface casing surrounds the long string casing and provides one of the final engineered barriers to the Underground Source of Drinking Water (USDW). Failure probabilities are derived from LSTRINGLEAK with a correction of 0.1 to account for the fact that the surface casing is subject to less stress than the long string casing, and it is shorter and closer to the surface making it less likely to be subject to

construction failure modes.

Event: LSCEMLEAK
Description: Long string casing cement micro-annulus allows fluid movement along casing
Probability: Poisson distribution with 1.1E-05/day rate
Basis: Surrounding the entire length of the long string casing is cement which fills the void between the casing and the surrounding geology. Given that there may be discontinuities in the cement pack, there is the probability that waste may migrate up the outer length of the casing through a micro-annulus discontinuity in the cement. Based on the state-by-state data responses for "waste migration", a failure rate parameter for the distribution was determined using the methodology described above.

Event: LOCATION A
Description: Long string casing leak is located between surface casing and uppermost confining zone
Probability: Uniform distribution from 1.0E-02 to 5.0E-02
Basis: Given that a long string casing leak has occurred, the exact location along its entire length determines the likely migration route. If the leak occurs within the bounds defined by LOCATION A, migration to the USDW is assumed to be immediate and complete. Estimation of probability is based on professional judgement taking into account the length of casing in this location relative to typical overall long string casing length. In addition, consideration was given to the fact that stresses on the casing increase with depth.

Event: LOCATION B
Description: Long string casing leak is located above the bottom of the surface casing
Probability: Uniform distribution from 1.0E-02 to 1.0E-01
Basis: The same logic applied to the determination of LOCATION A probability is used here.

Event: LOCATION C
Description: Long string casing leak is located below the confining zone(s)
Probability: 1-Prob(LOCATION A)-Prob(LOCATION B)
Basis: The final section of the casing string extends from the top of the upper most confining zone to the injection zone. This represents the largest fraction of the casing length and stresses increase with depth, so the likelihood for a casing leak is higher in this location. Given that a long string casing leak has occurred, the probabilities for LOCATION A, LOCATION B, and LOCATION C must sum to unity. Thus, an algorithm is included in the event tree for the Monte-Carlo simulation that calculates the probability of LOCATION C based on the probabilities selected at each iteration for LOCATION A and LOCATION B.

Event: PACKLEAK
Description: Packer leak

Probability: Poisson distribution with 4.6E-05/day rate
Basis: This event quantifies the probability that the packer will develop a leak. The packer seals the bottom of the annulus between the long string casing and the injection tube. The probability is based on compilation of state-by-state data analyzed as discussed above.

Event: PACKFAIL
Description: Sudden and major failure and breach of packer
Probability: $1/100^{th}$ of PACKLEAK probability
Basis: Using the same basis applied to other catastrophic failure events, a professional judgement of 1/100th of the probability of a leak was used for complete packer failure.

Event: FLUIDTEST
Description: Testing fails to detect injection fluid migration along outside of long string casing
Probability: Uniform distribution from 5.0E-04 to 5.0E-03
Basis: Regular testing is required to detect migration fluid along the outside of the casing material. Generally, the probability of failing to detect a leak is most likely due to operator error either in the procedure or in the interpretation of results. Thus, the probability of failing to detect fluid migration is based on the probability of operator and hence human error. A primary source of human error rates is studies prepared for nuclear power plant reliability analysis[29,30]. These studies show that errors of omission for nonpassive tasks (maintenance, test, or calibration) occur at a rate of approximately 1.0E-03 per demand, with a range from 5.0E-04 to 5.0E-03. It is assumed that a single failure to detect on demand (i.e., at the time of the test) results in significant fluid migration.

Event: CONFINEBRCHL
Description: Transmissive breach occurs through lower confining zone
Probability: Determined by Fault Tree Analysis
Basis: Due to the multiple components associated with this failure event, a LOWER CONFINING ZONE BREACH FAULT TREE (Figure 4 in paper) was developed and used to evaluate the event probability. The resulting cumulative distribution for this event frequency is:

10^{th} percentile	1.7E-03
20^{th} percentile	1.9E-03
30^{th} percentile	2.2E-03
40^{th} percentile	2.5E-03
50^{th} percentile	2.9E-03
60^{th} percentile	3.4E-03
70^{th} percentile	4.3E-03
80^{th} percentile	5.8E-03
90^{th} percentile	8.2E-03

Event: CONFINEBRCHU
Description: Transmissive breach occurs through upper confining zone

Probability: Determined by Fault Tree Analysis

Basis: Due to the multiple components associated with this failure event, an UPPER CONFINING ZONE BREACH FAULT TREE (Figure 9 in paper) was developed and used to evaluate the event probability. The resulting cumulative distribution for this event frequency is:

10^{th} percentile	1.6E-03
20^{th} percentile	1.8E-03
30^{th} percentile	2.1E-03
40^{th} percentile	2.4E-03
50^{th} percentile	2.7E-03
60^{th} percentile	3.3E-03
70^{th} percentile	4.2E-03
80^{th} percentile	5.6E-03
90^{th} percentile	7.9E-03

Event: LBUOYANCY

Description: Injection fluid is sufficiently buoyant to penetrate lower confining zone breach

Probability: 1.0

Basis: Since fluid is being injected under pressure below the lower confining zone, it is conservatively assumed that this provides sufficient buoyancy to penetrate a breach. In general, in the absence of active injection pressure it is unlikely that buoyancy would be sufficient to transmit injected fluid completely through a breach.

Event: UBUOYANCY

Description: Injection fluid is sufficiently buoyant to penetrate upper confining zone breach

Probability: Uniform Distribution from 1.0E-05 to 1.0E-04

Basis: It is assumed that fluid injection would need to be maintained (while losing pressure to the breach in the confining zones) or even over-pressurized to provide a sufficient force to drive fluid through breaches in both the lower and upper confining zones. For this to occur, there would need to be an operator error in failing to detect an injection pressure loss or over-pressurization. As explained above, human reliability data show that errors of omission for non-passive tasks occur within a range of 5.0E-04 to 5.0E-03 per demand. While pressure is checked continuously during injection, it is conservatively assumed that a single failure to detect a pressure change results in significant fluid movement up through the breaches.

Event: RELDETECT

Description: Groundwater monitoring fails to detect waste release outside injection zone

Probability: 0.5

Basis: This probability is based on professional judgement. Given a release of waste fluid through postulated confining zone breaches, required groundwater monitoring should detect a release. At that detection the injection would be ceased and the driving force for upward fluid movement would be eliminated. This sequence could fail if the monitoring locations are not at or downgradient of the location of the breach in the confining zone, or if the time between release and detection is long enough that a significant release occurs before corrective action is taken.

Event: EXTRACT
Description: Extraction of groundwater from same saturated zone as injection zone
Probability: Uniform Distribution from 1.0E-05 to 1.0E-03
Basis: This probability is based on professional judgement. Deep well injection zones contain non-potable water, usually of high salinity, with no attractive resource value. A number of more useful water bearing zones occur at shallower depths that can be accessed much more cost-effectively. The probability of this event occurring near an existing or former deep injection well at any time in the foreseeable future is considered to be very low.

Event: NORECOGNIZE
Description: Failure to recognize that groundwater extraction is located within injected waste plume
Probability: Uniform Distribution from 1.0E-03 to 1.0E-02
Basis: Assuming that someone in the future screens an extraction well at injection zone depth, this is the probability that they do not recognize the well has intercepted an injected waste plume. This event would require both failure to recognize the well is located within a documented Class I hazardous waste injection well Area or Review (AOR) and failure to recognize that the extracted water contains waste. The distribution is based on professional judgement, taking into consideration significant uncertainties associated with time frames in the thousands of years as well as the small area of the plume relative to the entire saturated zone.

Event: OUTAOR
Description: Injection waste has migrated outside of the AOR to an unconfined zone
Probability: Uniform distribution from 1.0E-05 to 1.0E-04
Basis: Migration of the injected waste plume outside the Area of Review (AOR) is assigned a low probability of occurrence given the extensive characterization efforts required for the no-migration petition. It is conservatively assumed in the PRA that if this event occurs and the injected material is still characteristically hazardous then a release to a USDW occurs. Horizontal and upward migration of injected fluid very far out of predicted ranges would be necessary for this to occur.

Event: WASTEPRESENT
Description: Injected waste has not transformed into non-waste
Probability: Uniform distribution from 1.0E-02 to 1.0
Basis: This event addresses the probability that injected waste has not transformed into a non-hazardous form at a future time when either (a) groundwater is inadvertently extracted from the injected waste plume or (b) the plume has migrated outside of the Area of Review to an unconfined zone. The assigned probability distribution takes into consideration (a) it is not uncommon to render the waste non-hazardous by pretreatment and dilution prior to or during injection, (b) injected waste attenuates in the plume, and (c) biodegradation and other transformation/loss processes may decrease hazardous constituents over time. Inadvertent extraction and migration outside the AOR are events with long time frames, and there is reasonable likelihood

that these factors could have transformed the waste by the time of these event sequences.

Event: PUMPPA
Description: Annulus pump fails
Probability: Triangular distribution with min=5.0E-05; mode=3.0E-04; max=5.0E-03
Basis: The European Industry Reliability Data Bank[18] provides a resource of compiled data for equipment failure rates. Based on the failure rates per hour (5.0E-07 to 5.0E-04) for pumps with long operating times, the daily (assuming a 10 hr daily operating period) probability of pump failure is between 5.0E-06 and 5.0E-03 day^{-1}. This data is supported in general, by similar mechanical failure rates from PRAs performed for the nuclear power industry. Range estimates for pump failures from a number of nuclear industry resources[20] provide a median value of 3.0E-05 failures/hour (3.0E-04 failures/day). For the nuclear industry, redundancies and routine replacement ensures that the failure rates and consequences of pump failure are minimal. A triangular distribution was used for annulus pump failure rate, using the nuclear power industry value of 3.0E-04 failures/day as the mode and assigning the European database values as the extreme range values.

Event: CHECKPA
Description: Annulus check value fails open
Probability: Triangular distribution with min=1.0E-04; mode=3.0E-04; max=1.0E-03
Basis: Given that the annulus pump fails, CHECKPA is the probability that the check valve, designed to keep the annulus fluid contained and pressurized in the annulus, stays open. This an on-demand failure rate in that failure only occurs when the component is called upon to function. Data from McCormick[20] gives an on-demand failure rate for check values (fail open) of 1.0E-04 to 1.0E-03 per demand (median of 3.0E-04). Since CHECKPA is conditional upon PUMPPA, and both are represented by the same AND gate within the fault tree, the on-demand probability is used directly.

Event: CONTROLPA
Description: Annulus pressure control system fails resulting in under-pressurization
Probability: Uniform distribution from 1.0E-06 to 1.0E-04
Basis: Control system failures are usually the result of electronic or electrical failures resulting from loss of signal function. Lannoy and Procaccia[18] list the range of electrical/electronic failures from the compiled databases to be between 5.00E-08 and 1.00E-05 per hour. For a one-day operating period, this range converts to a failure probability of 1.2E-06 to 2.4E-04 day^{-1}. Since this range has no point of central tendency a uniform distribution is selected for the PRA.

Event: CONTROLPI
Description: Injection pressure control system resulting in over-pressurization
Probability: Uniform distribution of 1.0E-06 to 1.0E-04
Basis: This is a similar control system failure as was described for CONTROLPA. Similar logic is used to specify a probability distribution.

Event: OPERRPA
Description: Operator error causes annulus pressure to drop below injection pressure
Probability: Uniform distribution from 5.0E-05 to 5.0E-04
Basis: Swain[30] provides data on human error showing a frequency of 1.0E-05 error per action. Assuming the operator is performing 5 critical actions per day that could lead to a potential pressure drop, the daily failure rate is 5.0E-05. A uniform distribution is used which assumes this estimate is the lower bound and it is equally likely to be up to an order of magnitude higher frequency of human error. Since all operator errors in this PRA may be performed by either the same or a similarly-trained operator, this and the other operator error event probability distributions were correlated in the Monte Carlo simulation using a correlation coefficient of 0.5.

Event: OPERRPI
Description: Operator error causes injection pressure to rise above annulus pressure
Probability: Uniform distribution from 5.0E-05 to 5.0E-04
Basis: The same basis applies as for event OPERRPA above.

Event: OPERRDET
Description: Operator fails to detect/respond to unacceptable pressure differential
Probability: Uniform distribution from 5.0E-05 to 5.0E-04
Basis: The same basis applies as for event OPERRPA above.

Event: OPERRFRAC
Description: Operator error results in induced transmissive fracture through lower confining zone
Probability: Uniform distribution from 5.0E-05 to 5.0E-04
Basis: The same basis applies as for event OPERRPA above.

Event: OPERINJ
Description: Operator fails to recognize changes in confining zone capacity
Probability: Uniform distribution from 5.0E-05 to 5.0E-04
Basis: The same basis applies as for event OPERRPA above.

Event: CAPLOSS
Description: Loss of injection zone capacity results in over-pressurization
Probability: Uniform distribution from 1.0E-05 to 1.0E-03
Basis: The capacity of injection zone rock is carefully studied for a Class I well as part of the site selection process and no-migration petition. Given the extent of the characterization efforts involved, it is unlikely that a lack of capacity will be overlooked. This would be the result of a human error of omission, which occur at a rate of approximately 1.0E-03 per demand. Since at least one additional independent review of this factor would be performed (e.g., by the regulatory agency), this frequency is assumed to be the upper bound of the distribution.

Event: PERMEA
Description: Confining zone has unexpected transmissive permeability
Probability: Uniform distribution from 1.0E-05 to 1.0E-03

Basis: The permeability of confining zone rock is carefully studied for a Class I well as part of the site selection process and no-migration petition. Given the extent of the study efforts involved, it is unlikely that permeability will be incorrectly characterized. This would be the result of a human error of omission, which occur at a rate of approximately 1.0E-03 per demand. Since at least one additional independent review of this factor would be performed (e.g., by the regulatory agency), this frequency is assumed to be the upper bound of the distribution.

Event: DISCONT
Probability: Uniform distribution from 1.0E-04 to 1.0E-02
Description: Presence of unidentified transmissive discontinuity
Basis: As per the discussion on the characterization efforts outlined above for PERMEA, it is unlikely that the geologic properties of the confining zone were not completely described. However, irregularities in the geological characteristics of the confining zone are possible given the lateral extent of the injection zone. Thus a factor of ten higher probability is used than was assigned to PERMEA.

Event: DETECTWELL
Description: Failure to identify abandoned well in AOR
Probability: Uniform distribution from 1.0E-03 to 1.0E-02
Basis: Based on similar arguments as used for PERMEA and DISCONT, it is unlikely that the presence of abandoned wells within the AOR would remain undetected. However, records for abandoned wells can be missing or in error. The distribution range used is higher in error frequency to reflect this added consideration.

Event: ALARM
Description: Automatic alarm fails
Probability: Uniform distribution: 1.00E-05 to 1.00E-03
Basis: The frequency of alarm failures were analyzed by Davis and Satterwaite[9] for fire hazards associated with the management and storage of radioactive waste. A failure probability of 5.00E-05 was determined. However, this assessment was based on alarms with high reliability requirements specified for nuclear facilities. To account for the possibility that less reliable equipment may exist at an injection well facility, this value was used as the lower bound of a uniform distribution that includes an equal probability that the alarm failure rate can be as much as a factor of 100 higher.

Event: SEISMFAULT
Description: Seismic event induces a transmissive fault or fracture
Probability: Uniform distribution: 1.00E-05 to 1.00E-04
Basis: Avoidance of areas prone to seismic activity is carefully studied for a Class I well as part of the site selection process and no-migration petition. In addition, seismic factors are part of the design criteria for the well. Given the extent of the study efforts involved, it is unlikely that the well will be located where seismic activity has been incorrectly characterized. The event would more likely be a rare event that heretofore had not occurred at such a magnitude in the region of the well site, and therefore is not reflected in historical seismic event data. In addition, the seismic

event would need to be of a nature that it results in a transmissive fault or fracture penetrating entirely through the confining zone. This event was assigned, by judgement, a probability of occurrence in the range of 1 in 100,000 to 1 in 10,000.

Event: PLUGFAIL
Description: Identified abandoned well plug fails
Probability: Poisson distribution with 8E-04/well rate
Basis: Assignment of failure probability is based on TRC proper plug hearing files in Clark[6]. In this study, 2531 oil and gas fields were examined for plug leakage incidents from abandoned wells. Two leakage incidents were found. The number of abandoned wells may exceed the number of fields by a factor of ten. A conservative failure rate was estimated as 2 plug failures per 2531 fields, or 8E-04 plug failures per abandoned well (assuming only one well per field). Since this event meets the Poisson distribution requirements (see above in introductory remarks), a Poisson distribution was assumed using the failure rate determined here.

Event: TRANSUSDW
Description: Unidentified abandoned well is transmissive through upper confining zone to USDW
Probability: 0.1
Basis: There are no data upon which to base this event frequency. The probability assumed here of 0.1 is believed to be very conservative considering that the event requires the abandoned well to provide a pathway, other than plug failure, to transmit injected waste through the entire confining zone.

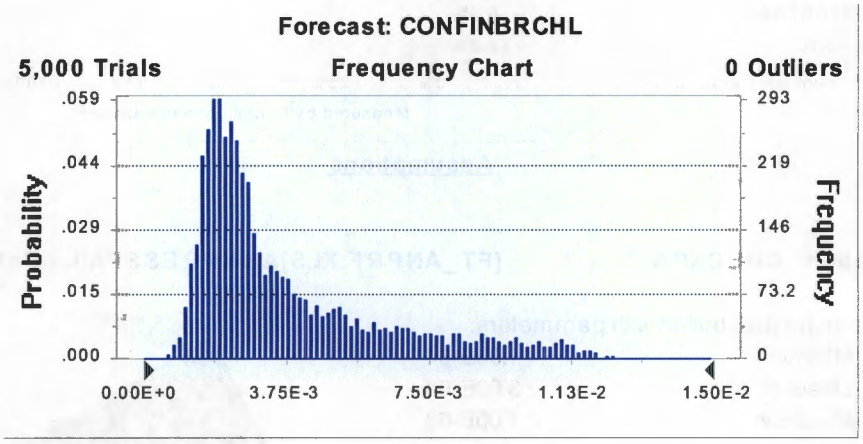
Event: TRANSLCZ
Description: Unidentified abandoned well is transmissive from injection zone through lower confining zone
Probability: 0.1
Basis: There are no data upon which to base this event frequency. The probability assumed here of 0.1 is believed to be very conservative considering that the event requires the abandoned well to provide a pathway, other than plug failure, to transmit injected waste through the entire confining zone.

Event: INCOMPWASTE
Description: Injected waste is incompatible with previously injected material
Probability: Uniform distribution: 1.00E-05 to 1.00E-04
Basis: Material that is injected is well characterized to ensure that no chemical or physical reactions can take place that can sufficiently alter the properties of the material in the injected zone. In addition, the no migration petition process requires study of waste-host rock compatibility. This event also assumes sufficient waste volume and reaction with confining zone rock to result in a complete breach of the confining zone. This event was assigned, conservatively by judgement, a probability of occurrence in the range of 1 in 100,000 to 1 in 10,000.

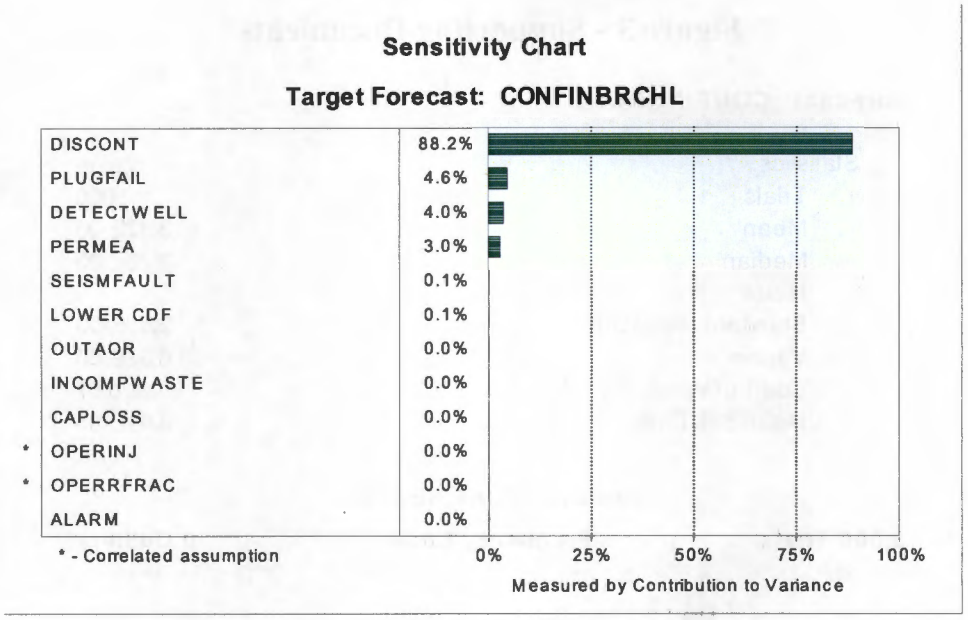
Figure 3 - Supporting Documents

Forecast: CONFINBRCHL

Statistics:	Value
Trials	5000
Mean	3.82E-03
Median	2.76E-03
Mode	—
Standard Deviation	2.55E-03
Variance	6.52E-06
Coeff. of Variability	0.67
Mean Std. Error	3.61E-05



Cumulative Percentile	Failure Frequency
0%	6.17E-04
10%	1.60E-03
25%	2.01E-03
50%	2.76E-03
75%	4.91E-03
90%	8.00E-03
100%	1.31E-02



Assumptions

Assumption: CHECKPA **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: E28**

Triangular distribution with parameters:

Minimum	1.00E-04
Likeliest	3.00E-04
Maximum	1.00E-03

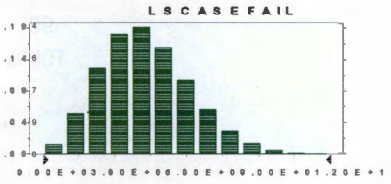
Selected range is from 1.00E-4 to 1.00E-3
Mean value in simulation was 4.67E-4

Assumption: LSCASEFAIL **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: A20**

Poisson distribution with parameters:

Rate	4.20E+00

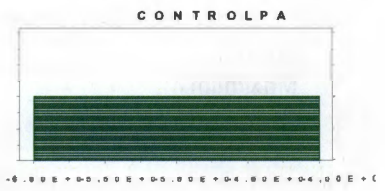
Selected range is from 0.00E+0 to +Infinity
Mean value in simulation was 4.18E+0



Assumption: CONTROLPA **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: E20**

Uniform distribution with parameters:

Minimum	-6.00E+00
Maximum	-4.00E+00

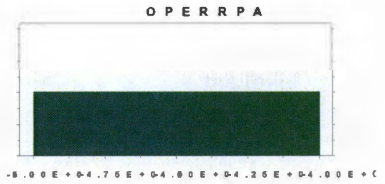


Mean value in simulation was -5.00E+0

Assumption: OPERRPA **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: F20**

Uniform distribution with parameters:

Minimum	-5.00E+00
Maximum	-4.00E+00



Mean value in simulation was -4.50E+0

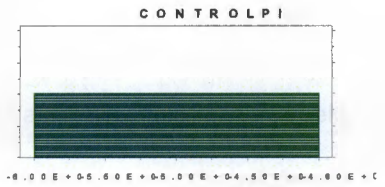
Correlated with:

OPERRPI (J20)	0.50
OPERRDET (O13)	0.50

Assumption: CONTROLPI **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: H20**

Uniform distribution with parameters:

Minimum	-6.00E+00
Maximum	-4.00E+00

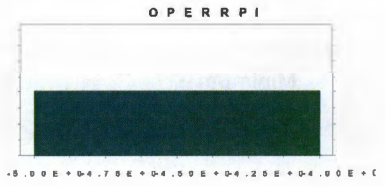


Mean value in simulation was -5.00E+0

Assumption: OPERRPI **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: J20**

Uniform distribution with parameters:

Minimum	-5.00E+00
Maximum	-4.00E+00



Mean value in simulation was -4.50E+0

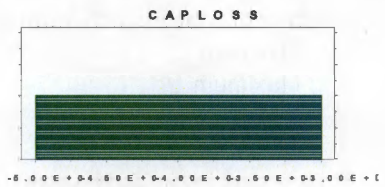
Correlated with:

OPERRPA (F20)	0.50

Assumption: CAPLOSS **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: M20**

Uniform distribution with parameters:

Minimum	-5.00E+00
Maximum	-3.00E+00

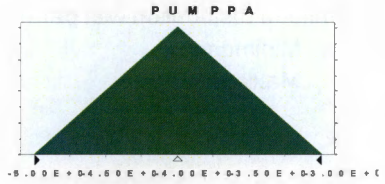


Mean value in simulation was -4.00E+0

Assumption: PUMPPA **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: B28**

Triangular distribution with parameters:

Minimum	-5.00E+00
Likeliest	-4.00E+00
Maximum	-3.00E+00

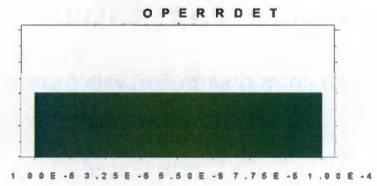


Selected range is from -5.00E+0 to -3.00E+0
Mean value in simulation was -4.00E+0

Assumption: OPERRDET **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: O13**

Uniform distribution with parameters:

Minimum	1.00E-05
Maximum	1.00E-04



Mean value in simulation was 5.50E-5

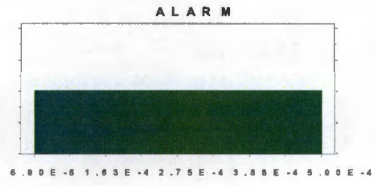
Correlated with:

OPERRPA (F20)	0.50

Assumption: ALARM **[FT_ANPRF.XLS]ANNPRESSFAIL - Cell: M13**

Uniform distribution with parameters:

Minimum	5.00E-05
Maximum	5.00E-04



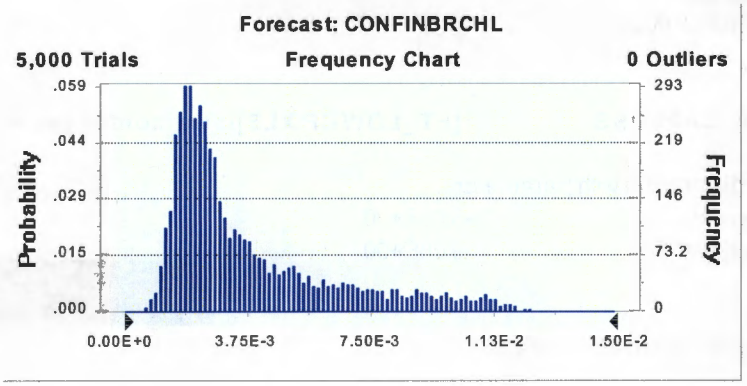
Mean value in simulation was 2.75E-4

1.2E-13	0%
9.8E-13	5%
1.5E-12	10%
2.1E-12	15%
2.6E-12	20%
3.2E-12	25%
3.8E-12	30%
4.5E-12	35%
5.2E-12	40%
6.0E-12	45%
7.0E-12	50%
8.0E-12	55%
9.3E-12	60%
1.1E-11	65%
1.2E-11	70%
1.4E-11	75%
1.7E-11	80%
2.0E-11	85%
2.4E-11	90%
3.1E-11	95%
7.6E-11	100%

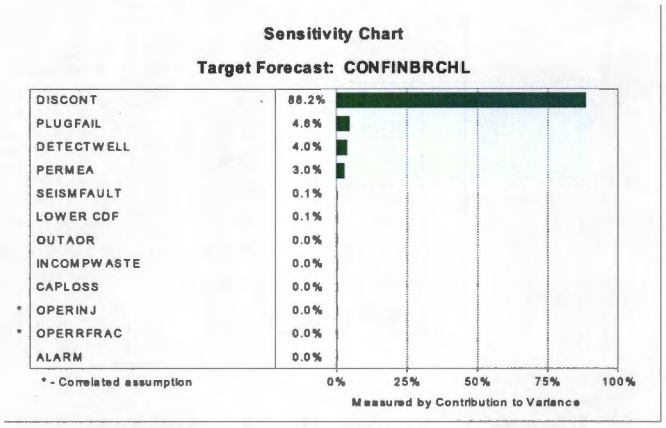
Figure 4 - Supporting Documents

Forecast: CONFINBRCHL

Statistics:	Value
Trials	5000
Mean	3.82E-03
Median	2.76E-03
Mode	—
Standard Deviation	2.55E-03
Variance	6.52E-06
Coeff. of Variability	0.67
Mean Std. Error	3.61E-05



Cumulative Percentile	Failure Frequency
0%	6.17E-04
10%	1.60E-03
25%	2.01E-03
50%	2.76E-03
75%	4.91E-03
90%	8.00E-03
100%	1.31E-02

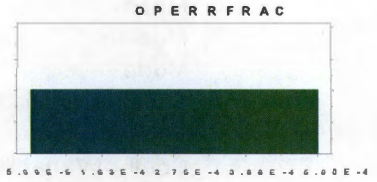


Assumptions

Assumption: OPERRFRAC **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: C27**

Uniform distribution with parameters:

Minimum	5.00E-05
Maximum	5.00E-04



Mean value in simulation was 2.75E-4

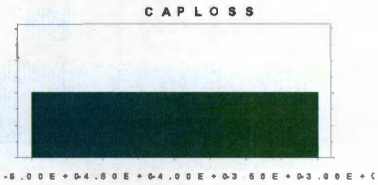
Correlated with:

OPERINJ (M24)	0.50

Assumption: CAPLOSS **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: F26**

Uniform distribution with parameters:

Minimum	-5.00E+00
Maximum	-3.00E+00

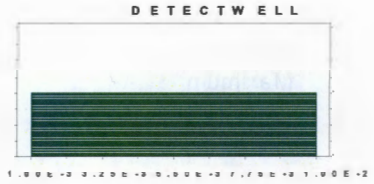


Mean value in simulation was -4.00E+0

Assumption: DETECTWELL **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: G32**

Uniform distribution with parameters:

Minimum	1.00E-03
Maximum	1.00E-02



Mean value in simulation was 5.50E-3

Assumption: OPERINJ **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: M24**

Uniform distribution with parameters:

Minimum	1.00E-05
Maximum	1.00E-04

Mean value in simulation was 5.50E-5

Correlated with:

Assumption: OPERINJ (cont'd) **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: M24**

OPERRFRAC (C27)	0.50

Assumption: SEISMFAULT **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: A15**

Uniform distribution with parameters:

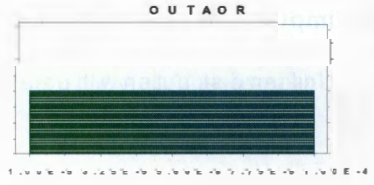
Minimum	1.00E-05
Maximum	1.00E-04

Mean value in simulation was 5.50E-5

Assumption: OUTAOR **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: C15**

Uniform distribution with parameters:

Minimum	1.00E-05
Maximum	1.00E-04



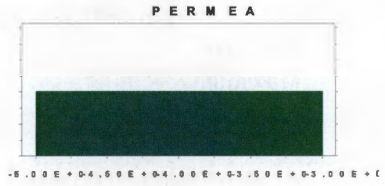
Mean value in simulation was 5.50E-5

Assumption: PERMEA **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: E15**

Uniform distribution with parameters:

Minimum	-5.00E+00
Maximum	-3.00E+00

Mean value in simulation was -4.00E+0

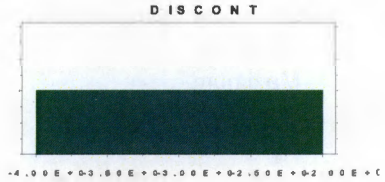


Assumption: DISCONT **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: G15**

Uniform distribution with parameters:

Minimum	-4.00E+00
Maximum	-2.00E+00

Mean value in simulation was -3.00E+0

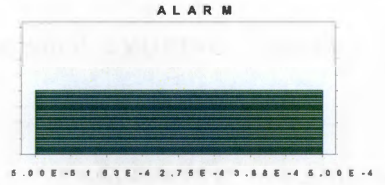


Assumption: ALARM **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: A27**

Uniform distribution with parameters:

Minimum	5.00E-05
Maximum	5.00E-04

Mean value in simulation was 2.75E-4

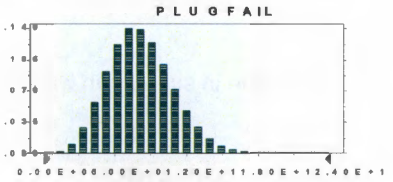


Assumption: PLUGFAIL **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: K24**

Poisson distribution with parameters:

Rate	8.00E+00

Selected range is from 0.00E+0 to +Infinity
Mean value in simulation was 7.98E+0



Assumption: INCOMPWASTE **[FT_LOWCF.XLS]lowerconf-layer IH - Cell: O24**

Uniform distribution with parameters:

Minimum	1.00E-05
Maximum	1.00E-04

Mean value in simulation was 5.50E-5

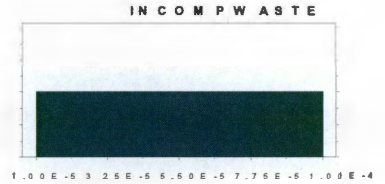
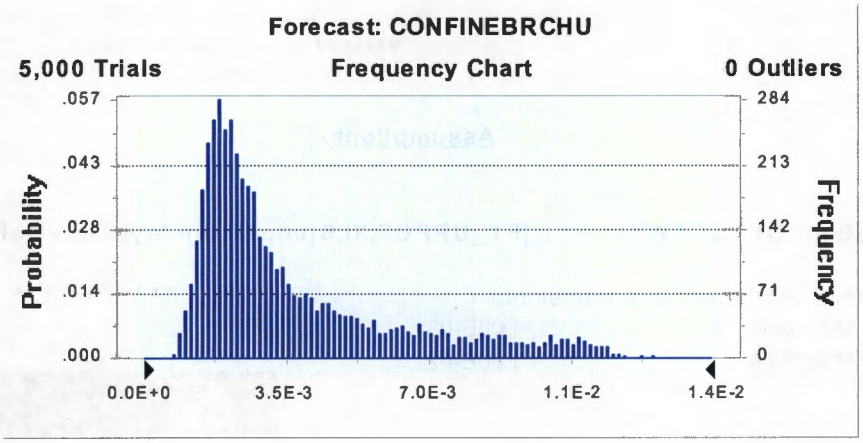


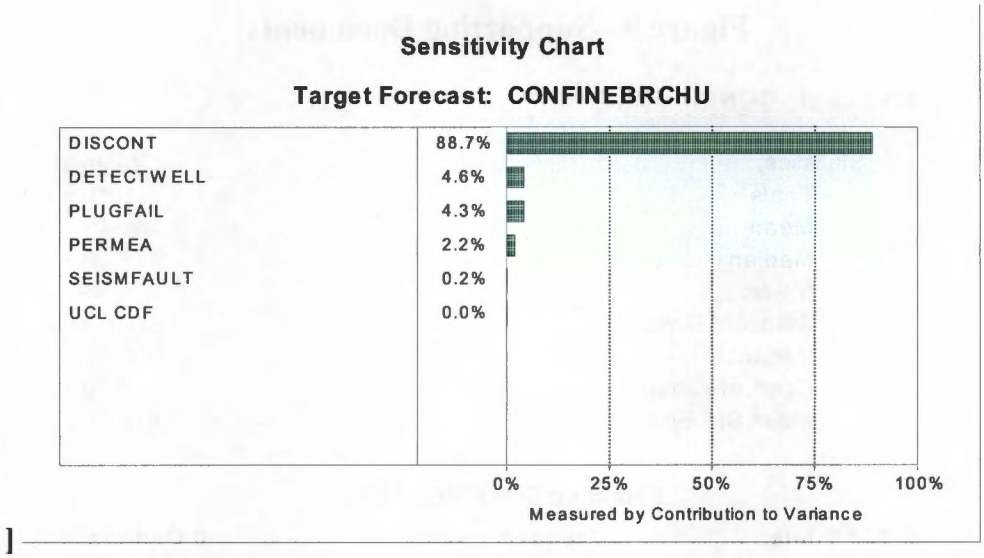
Figure 9 - Supporting Documents

Forecast: CONFINEBRCHU

Statistics:	Value
Trials	5000
Mean	3.8E-03
Median	2.7E-03
Mode	--
Standard Deviation	2.6E-03
Variance	6.5E-06
Coeff. of Variability	0.68
Mean Std. Error	3.61E-05



Cumulative Percentile	Failure Frequency
0%	6.2E-04
10%	1.6E-03
25%	2.0E-03
50%	2.7E-03
75%	4.8E-03
90%	8.0E-03
100%	1.3E-02



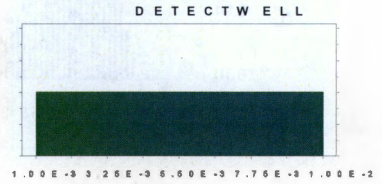
Assumptions

Assumption: DETECTWELL **[FT_UPPCF.XLS]upperconf-layer IH - Cell: D26**

Uniform distribution with parameters:

Minimum	1.00E-03
Maximum	1.00E-02

Mean value in simulation was 5.50E-3

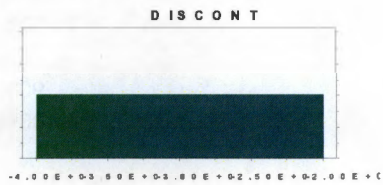


Assumption: DISCONT **[FT_UPPCF.XLS]upperconf-layer IH - Cell: E15**

Uniform distribution with parameters:

Minimum	-4.00E+00
Maximum	-2.00E+00

Mean value in simulation was -3.00E+0

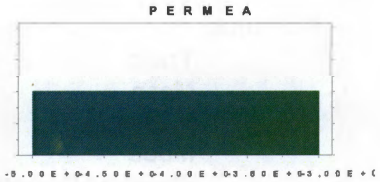


Assumption: PERMEA **[FT_UPPCF.XLS]upperconf-layer IH - Cell: C15**

Uniform distribution with parameters:

Minimum	-5.00E+00
Maximum	-3.00E+00

Mean value in simulation was -4.00E+0



Assumption: SEISMFAULT **[FT_UPPCF.XLS]upperconf-layer IH - Cell: A15**

Uniform distribution with parameters:

Minimum	1.00E-05
Maximum	1.00E-04

Mean value in simulation was 5.50E-5

Assumption: PLUGFAIL **[FT_UPPCF.XLS]upperconf-layer IH - Cell: I21**

Poisson distribution with parameters:

Rate	8.00E+00

Selected range is from 0.00E+0 to +Infinity
Mean value in simulation was 7.99E+0

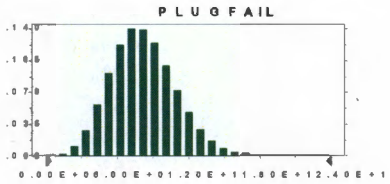


Figure 12 - Supporting Documents

Statistics:	Value
Trials	5000
Mean	6.48E-07
Median	3.23E-07
Mode	---
Standard Deviation	8.70E-07
Variance	7.57E-13
Coeff. of Variability	1.34E+00
Mean Std. Error	1.23E-08

Cumulative Percentile	Loss of waste isolation probability
0%	9.27E-09
5%	4.38E-08
10%	6.25E-08
15%	8.13E-08
20%	1.01E-07
25%	1.23E-07
30%	1.52E-07
35%	1.84E-07
40%	2.24E-07
45%	2.69E-07
50%	3.23E-07
55%	3.86E-07
60%	4.62E-07
65%	5.51E-07
70%	6.58E-07
75%	7.92E-07
80%	9.78E-07
85%	1.23E-06
90%	1.63E-06
95%	2.43E-06
100%	8.94E-06

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC	**WQCC 14-15 (R)**
Navajo Refining Company, L.L.C.,	
Petitioner.	

DIRECT TESTIMONY OF

ALBERTO A. GUTIÉRREZ, RG

ON BEHALF OF

NAVAJO REFINING COMPANY, L.L.C.

June 15, 2015

Contents

1. Please state your name and business address.

My name is Alberto A. Gutiérrez. My business address is Geolex, Inc., 500 Marquette Avenue NW Suite 1350, Albuquerque, NM 87102.

2. By whom are you employed and in what capacity?

I am employed by Geolex, Inc. as its president and CEO, and I am a principal geologist and hydrogeologist for the firm. Geolex is an environmental and geologic consulting firm with extensive experience in injection well siting, permitting, construction and operation pursuant to underground injection control (UIC) regulations. Geolex and I also have extensive experience in identifying and characterizing groundwater contamination at many types of sites and developing/implementing remedial programs under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Geolex also provides extensive regulatory assistance and environmental remediation services to private industry and government throughout the United States and abroad.

3. Please describe the purpose of your testimony.

The purpose of my testimony is to provide geologic and engineering information to the Water Quality Control Commission (WQCC) that supports adoption of a permitting program for disposal wells to be used by oil refineries to dispose of process wastewaters that may be classified as hazardous due to the concentration of chemical constituents caused by water conservation and reuse measures designed to enhance protection of groundwater resources and the environment. In addition, I will provide the WQCC with information to evaluate the proposed modification of the Class I UIC regulations in the context of the state of New Mexico's UIC program generally.

4. Please briefly summarize your testimony and the conclusions made in it.

In my testimony, I explain that there are four factors that must be addressed to ensure that any deep injection well will be protective of groundwater of the state of New Mexico as well as human health and the environment. These four factors are: geology, well construction, well operation, and well closure. I also evaluate New Mexico's existing UIC program and conclude that it has been effective in protecting groundwater of the state of New Mexico. Based on a comparison of the proposed rule to the factors listed above, I also conclude that wells sited, constructed, operated, and ultimately plugged and closed in accordance with the proposed regulations will satisfy each of the factors listed above and, as a result, will be protective of the groundwater of the state of New Mexico as well as human health and the environment.

I believe that my testimony provides the WQCC with the information necessary to determine if the proposed regulations, which would provide for the permitting and operation of Class I hazardous waste injection wells for refineries, are protective of the waters of New Mexico and protective of human health and the environment. Furthermore my testimony will demonstrate that the regulations will require the submission of information throughout the permitting process to allow the New Mexico Oil Conservation Division (NMOCD) to evaluate the ability of any

particular proposed project to be protective of human health and the environment through appropriate geologic analyses, well design/construction, well operation and closure/post-closure care.

5. Please describe your educational background and training.

I hold a Master's Degree (Magna Cum Laude) in Geology from the University of New Mexico, in 1980 and a Bachelor of Science (Summa Cum Laude) in Geomorphology from the University of Maryland in 1977. I have nearly 40 years of professional experience in environmental geology, geomorphology, hydrogeology and petroleum geology including work experience with the United States Geological Survey (USGS) in Reston, Virginia and Albuquerque, New Mexico, Radian Corporation of Austin, Texas, LHR Exploration in Santa Fe, New Mexico, Geoscience Consultants, Ltd. in Albuquerque, New Mexico, and Geolex, Inc., also in Albuquerque. I am a registered professional geologist with AIPG and maintain active professional registration in 21 states in the U.S.

In addition, I have extensive regulatory experience having served on the New Mexico Environmental Improvement Board for six years with four years as its Chairman and as a Commissioner with the WQCC for four years. I have over 25 peer-reviewed publications or presentations in the field including numerous publications relating to the safe and successful permitting of Class II acid gas injection (AGI) wells and the analyses of environmental issues arising from other oil and gas activities throughout North America, South America, Europe and Africa. I have testified in numerous litigation and regulatory development matters throughout the United States and have been accepted as an expert in hydrogeology, geology and petroleum geology by the New Mexico Oil Conservation Commission (NMOCC), NMOCD, New Mexico Environment Department (NMED), WQCC, Texas Railroad Commission (TRRC), the California Regional Water Quality Control Board (RWQCB), and various other state and federal agencies. I have also provided testimony in numerous matters involving the contamination or potential contamination of soil, groundwater and surface waters for numerous state and federal courts in the United States and abroad. In addition, I have participated extensively with the NMOCD and NMOCC in the development of new proposed UIC (Rule 26) regulations for the permitting and operation of Class II AGI and enhanced recovery wells. In addition, I have extensive experience over the last 15 years in the geologic analyses, well design/construction, operation and closure of Class II AGI wells under the UIC program throughout the US and similar programs in Canada and I have served as principal-in-charge of most AGI well projects in the State. My curriculum vitae is included herein as Exhibit A.

6. What have you reviewed in preparation for your testimony?

I have reviewed the petition to amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC, and numerous applications that Geolex has successfully made in support of permitting of Class II acid gas injection wells. These applications have resulted in the development, siting, design and oversight of construction and operation of all but one of the Class II AGI wells in New Mexico and various AGI and salt water disposal wells in other states including Texas, Utah, Wyoming, Oklahoma, Mississippi, and Kansas, and in Canada. I have reviewed U.S. Environmental Protection Agency (EPA) and NMOCD data on Class I wells throughout the U.S. and specifically the proposed provisions of the proposed amended rules which are similar to those for

existing disposal wells in New Mexico and throughout the U.S., and EPA's existing Class I well regulations

7. What factors must be considered to ensure that underground injection wells are protective of human health and the environment?

The four factors that must be considered to determine if any particular well is protective of groundwater, human health and the environment are:

A. Siting and geologic analyses.

In the siting of any potential injection well, it is necessary to conduct extensive geologic analyses to document that there is a geologic seal that will permanently contain wastes within the injection zone. In addition, an injection reservoir must be identified and characterized which is laterally extensive, porous and contains excess capacity for the anticipated waste disposal. These reservoirs should contain both internal seals within the injection formation, and a caprock with no transmissive fractures, faults, or porosity/permeability. As required by the proposed regulations, the injection zone must be well isolated from any fresh groundwater, at a depth sufficient to assure suitable seals and caprock which will prevent the escape of wastes from the injection zone. In addition, the proposal's corrective action provisions state that wells already existing within the area of review required by the regulations must be analyzed to assure that they do not provide potential conduits allowing wastes to escape the injection zone.

B. Well design and construction

As reflected by the proposed regulations, an injection well must be designed and constructed with multiple strings of casing comprised of compatible materials, cemented to the surface and verified by appropriate cement bond logs and tests, and appropriate infrastructure that will assure there is no escape of injection fluids outside the wellbore that could threaten overlying groundwater resources. The design and construction of the well must consider the appropriate material and equipment selection for the specific waste stream and geologic conditions as identified in factor 1 above. Wells must be designed to contain appropriate monitoring equipment to monitor pressure and well integrity as required by the proposed regulations.

C. Well Operation and Maintenance

The safe operation of injection wells require the implementation of a series of procedures including regular inspection, testing and maintenance to assure that the well equipment continues to provide the protection of groundwater and the environment envisioned through the original design and construction. As required by the proposed regulations, the periodic mechanical integrity testing of the well in addition to the monitoring and required reporting of pressure and other injection conditions act together to provide ongoing assurance that the well continues to be protective of groundwater and the environment. These procedures and protective measures assure that well and disposal zone integrity are maintained throughout the operational life of the well.

D. Closure, post-closure care and financial assurance

At the end of the useful life of the well or facility, the proposed regulations incorporate procedures for the closure (plugging) of the well in accordance with current best practices, as well as requirements for post-closure care, to avoid the potential escape of wastes contained within the injection zone through the well which is being decommissioned. In addition, these proposed regulations contain provisions for financial assurance which assure the State that the funds will be available to conduct the closure and post-closure activities consistent with regulatory requirements and the post-closure care and monitoring will be conducted to assure continued integrity and containment of the wastes within the disposal zone.

8. How do you ensure that wells will inject waste into appropriate geologic formations?

There are several steps involved in identifying potentially suitable injection zones (siting or feasibility analyses) for Class I hazardous wastes before a determination can be made that any particular location or reservoir are appropriate for injection of wastes. Each of the steps outlined here is generally required by the proposed regulations. These steps have been used successfully over the past 10-15 years in New Mexico and elsewhere to evaluate the suitability of geologic reservoirs for other UIC disposal wells. The following generic description of the components of a siting and feasibility analysis are not necessarily applicable at all sites and geologic conditions, and the relative importance of specific data sets or analysis methodology will vary as appropriate from site to site.

The primary focus in the initial stages of study involves identification and characterization of wells in the area in which an injection well is to be drilled, and the geologic and hydrogeologic conditions in the project area. The first steps in characterizing a potential injection zone are to identify and characterize the stratigraphic section in the area, identify all fresh groundwater (<10,000 TDS) zones, and clearly establish the maximum depth of groundwater of the state of New Mexico in order to develop an appropriately protective well design and monitoring system. As an additional step, a permit applicant could establish the baseline water quality of groundwater of the state of New Mexico in the project area by reviewing all available data on water wells within the project area and the well's area of review. These data can be obtained from a variety of sources in New Mexico, including but not limited to, the records of the office of the State Engineer. As part of the analysis of the deep stratigraphy in the area and the identification of a potentially suitable injection zone, an analysis of potential injection zones and oil and gas zones in the area of review, as well as identification of plugged and abandoned wells and dry holes which could form potential conduits for migration of wastes from candidate injection reservoirs, should be conducted.

Based on the available well and well log control data in the area of interest, a potential injection zone is then selected on the basis of its propensity for porosity and suitable permeability that would accommodate injection needs. In rare cases where there is not enough well control data to conduct a comprehensive assessment resulting in a quantified judgment, other subsurface investigation techniques may be employed. In most cases, that would involve evaluation of commercially available or newly acquired seismic data to evaluate a potential injection zone. Using these techniques, suitable zones separated from all fresh groundwater resources by impermeable strata and not containing economically viable mineral resources within the area of

review can be identified. It should also ideally be confined more locally by impermeable strata both within and immediately adjacent to (above and below) the candidate injection interval.

Once suitable injection zone candidates are identified, the depositional environment(s) of the zones must be determined in order that the geometry and architecture of the zone (lateral extent and shape of the zone) are understood and characterized. These factors also provide data inputs to calculate plume extent and geometry given expected injection rates and injection fluid capacity. Cross-sections showing the distribution of porous and permeable injection zones, as well as seals and caprock, are constructed to analyze and illustrate the permeability pathways within the formation.

It is important to identify all wells, whether active, plugged, or dry holes that penetrate through the proposed injection zone within the area of review, as these have a bearing on the protection of groundwater resources. The selection of an appropriate injection zone along with a careful evaluation of any potential man-made conduits (wells) within the area of review assures that no injected wastes will escape out of the intended injection zone and assures that injected wastes will not migrate up or down section via natural pathways (such as fractures) or improperly completed or plugged wells. The well construction or plugging reports of all wells that penetrate through the zone within the area of review must be examined, and determination made of any exposure behind production casing of any producing zones due to lack of suitable annular cements or plugs. If any such exposure is found, the permit can include conditions of approval that require remediation of these wellbores by the operator of the injection well.

The structural features of the region are also important to understanding the fluid flow pathways the injected wastes are likely to follow, and ultimately are factored into the plume analysis that must be included as part of the required post-closure plan. A number of factors may be considered when analyzing the anticipated plume from an injection well. Regional dip of the sediments, as well as the presence of fractures and faults, needs to be fully characterized in order to anticipate any natural factors that could cause extraordinary escape of fluids up or down the stratigraphic section. Downhole test data, such as data from drillstem tests run in wells in the area, are used to determine the regional pressure and temperature gradients, which are also factors that go into the no migration demonstration. Once all the geologic, structural, and downhole parameters are established, calculations can then be made to determine expected reservoir capacity, and models constructed to predict fluid migration plume paths and affected area within the reservoir over various time periods.

9. How do you ensure that wells are constructed and completed in a manner that maintains well integrity?

Once an application is made and approved to drill an injection well, the drilling is carefully supervised and data essential to determination of reservoir properties is collected during and after drilling. Although the precise steps taken for any given well installation will vary on a site by site basis depending on local conditions, the follow generally occur. Sidewall or whole core samples may be collected in the well in order to get laboratory measurements of porosity, permeability, water chemistry, and any indication of potential hydrocarbon production. Downhole wireline logs are run, which can include: several types of porosity logs (acoustic, density, neutron); resistivity logs to determine relative permeability and water saturations in the zone; Formation

Micro-imager (FMI) logs to map reservoir heterogeneity, structural dip, and fractures; and cement bond logs to examine the integrity of cement after each string of casing is set. The logs are evaluated and specific zones identified for perforation within the approved injection interval. Core data is collected or wireline tests run to establish native fluid chemistry in the zone, to establish compatibility with injection fluids. Once the zones are perforated, they may be swab tested to determine fluid recovery, fluid chemistry, and establish non-productivity to hydrocarbons, and then step rate tests conducted across all sets of perforations to establish transmissivity and injection rates.

The designs of these wells as required by the proposed regulations require setting of surface casing into an impermeable formation below the lowest potable water source. This design often includes multiple casing and cement intervals to isolate fresh groundwater. Production (i.e., injection) casing is set within the surface casing, cemented to the surface, and constructed with materials which will assure the integrity of the base of the production casing exposed to waste stream in the injection zone below the packer. These wells typically have the outermost surface casing set with cement to the surface below the depth of the deepest groundwater of the state of New Mexico. In some cases, it may be necessary to set and cement to the surface an intermediate casing to a depth which will further protect any usable but not potable water (>10,000 TDS) or other formations of interest, at the discretion of the Agency, even though the surface casing string is what is required to protect groundwater of the state of New Mexico. Finally, the injection casing is also set and cemented to the surface. This provides a minimum of four alternating layers of steel casing and cement which serve to isolate the injection zone from any potential of injected wastes affecting shallower zones by travelling up the well bore. In addition, a circumferential cement bond log is run for each of these casing strings to assure that an appropriate bond between cement and casing and cement and formation insures the integrity of the well. A typical well design is included as Exhibit B.

Cement bond logs will assure casing seal to formations. In some cases, it may be appropriate to conduct radioactive tracer surveys across perforated intervals in order to verify containment of fluids within the intended injection zone(s). Appropriate corrosion resistant tubing will be inserted inside the production casing and stabbed into a compatible packer with annular space filled with inert corrosion-inhibited fluid and monitored for pressure to indicate potential tubing leak before it can affect production casing.

Similar designs have been implemented successfully without any instances of groundwater contamination or leakage problems at similar deep zones in southeastern New Mexico, Texas, and Alberta for many years, including many such installations which my firm has designed, permitted and installed.

10. How does the proposed rule ensure that wells will be operated in a manner that protects human health and the environment?

The operation of these wells consistent with the proposed regulations requires the constant monitoring of injection and annular pressures and the regular periodic pressure testing of the production and intermediate casing strings with regularly scheduled mechanical integrity tests (MITs) such as a Braden Head (BH) test for the surface casing. All of these wells are given a conservative maximum allowable operating pressure (MAOP) approved by the Agency as a

condition of approval which further ensures that the wells will be operated in such a manner as to not damage the isolating characteristics of the injection zone in the immediate vicinity of the well. The continuous monitoring combined with a periodic testing program as required by the proposed regulations assures that there is an immediate detection of any condition which could result in an escape of injected fluid out of the injection zone in the immediate vicinity of the wellbore. In addition, the regulations require periodic MITs tests which are independent confirmation of the well's integrity. These tests are required every year for the proposed Class I hazardous waste disposal wells and have been demonstrated to be successful in the case of Class II AGI wells to assure continued integrity of the wellbore and protection of groundwater resources during the operational life of the wells.

In addition to the periodic testing of the wells, the reporting to the Agency of the volumes of wastes injected and demonstration of the operation of the well within permit limits and constraints is required by the proposed regulations to allow independent verification by the Agency of the permittee's compliance with permit conditions.

11. How does the proposed rule ensure that wells will be properly closed or plugged at the end of their useful life?

The proposed rules contain detailed requirements to assure that the wells are properly closed (plugged and abandoned) and that an operator demonstrates financial assurance to ensure that the resources are available to plug the well in a manner that protects groundwater of the state of New Mexico by maintaining the isolation of the injection zone and assuring that the well itself does not become a conduit for wastes injected into the disposal zone to potentially affect other zones. These plugging and post-closure requirements are similarly imposed on production wells which also have the potential to result in the leakage of residual hydrocarbons from the production zones which could affect overlying groundwater resources.

The financial assurance requirements within the proposed regulations provide the State with non-cancelable financial instruments to assure that funds are available for the proper closure (plugging) and post-closure monitoring to assure that the wells are maintained and monitored to ensure containment of injected wastes in perpetuity.

12. In your opinion, are the proposed regulations consistent with the requirements described above?

Yes. I have reviewed the proposed regulations as well as EPA's regulations for Class I hazardous waste injection wells and have concluded that, under the proposed rule, a successful applicant for a Class I hazardous waste injection well permit would be required to comply with each of the steps generally described above. Table I provides a summary of the specific sections of the proposed regulations that cover each of the four factors discussed above which are needed to assure that any of the proposed Class I wells are protective of the groundwater of the state of New Mexico. Of course, there are also many other sections of the proposed regulations that generally support the approach I have described above. Based on this review, it is my opinion that any Class I hazardous waste injection well permitted in compliance with the proposed regulations would be protective of groundwater of the state of New Mexico as well as of human health and the environment.

TABLE 1 CROSS REFERENCE AMONG TESTIMONY, PROTECTIVENESS FACTORS TO BE CONSIDERED FOR CLASS I HAZARDOUS WASTE INJECTION WELLS AND EXISTING AND PROPOSED REGULATIONS

Questions in Testimony Addressing Each Factor	Factors Required to Assure Protectiveness of Permitted Class I UIC Wells	Relevant Sections of 20.6.2.XXXX NMAC (existing regulations in italics; proposed regulation in underlined text)
7, 8	A. Siting and Geologic Analyses	*5102(A);5103(A-L);5104(A-B); 5210(A-C)* 5352(A-D); 5353; 5354(A-E); 5360(A-D)
7,9	B. Well Design and Construction	*5204(A-D);* 5355(A-D); 5356(A-F)
7,10	C. Well Operation and Maintenance	*5204(A-D);* 5357(A-J); 5358(A-F); 5359(A-B); 5360(A-D)
7,11	D. Closure and Post-Closure Care	5361(A-D); 5362(A-C); 5363

13. What classes of underground injection wells are currently operated in New Mexico?

EPA's regulations cover five classes of injection wells which are found in New Mexico. Table 2 includes the latest EPA inventory for UIC wells in Region 6 (2010), which includes New Mexico. To my knowledge, there are currently no Class VI wells in New Mexico.

TABLE 2 DISTRIBUTION OF UIC WELLS IN THE U.S. IN EPA REGION 6 (as of 2010)

STATE	CLASS I HW	CLASS I OTHER	CLASS II	CLASS III	CLASS IV	CLASS V
AR	4	9	1093	0	0	281
LA	15	22	3731	89	0	213
NM	0	5	4585	10	0	1414
OK	0	6	10629	2	2	1928
TX	58	50	52016	6075	4	32594

(Source: http://water.epa.gov/type/groundwater/uic/upload/UIC-Well-Inventory_2010-2.pdf)

There are Non-Hazardous Class I, Class II, Class III and Class V underground injection wells currently permitted and operating throughout the State of New Mexico. The current distribution of UIC wells in New Mexico is provided in Table 3.

TABLE 3 DISTRIBUTION OF CURRENT UIC WELLS PERMITTED IN STATE OF NEW MEXICO

CLASS I		CLASS II			CLASS III	CLASS V
NON-HW	HW WELLS	AGI WELLS	SWDW	EOR	BRINE	MISC.
5	0	15	911	3,521	36	1,005

(Source: New Mexico Oil Conservation Division and New Mexico Environment Department)

Currently, there are 5 active and 1 inactive Class I non-hazardous wells operating in the State, all of which inject non-hazardous wastes and all related to refinery wastes, including those operated by Navajo Refining in southeast New Mexico. Table 4 provides a summary of the six Class I non-hazardous wells currently permitted in New Mexico.

TABLE 4 STATUS OF CLASS I WELLS CURRENTLY PERMITTED IN NEW MEXICO

Order Number	County	Well Location	Entity	Operator	API Number(s)
UICI-10-0	Lea	Unit H, Section 35, Township 19S, Range 36E	Monument #1	MONUMENT DISPOSAL, INC.	3002537918 (Inactive)
UICI-9-0	San Juan	Unit I, Section 27, Township 29, Range 11	GIANT BLOOMFIELD CLASS I DISPOSAL NO. 001	SAN JUAN REFINING CO	3004529002
UICI-8-1	Eddy	Unit O, Section 31, Township 17S, Range 28 E	NAVAJO-WDW1	NAVAJO REFINING COMPANY, L.L.C.	3001527592
UICI-8-2	Eddy	Unit E, Section 12, Township 18S, Range 27E	WDW NO 002, NAVAJO-WDW2	NAVAJO REFINING COMPANY, L.L.C.	3001520894
UICI-8-3	Eddy	**Unit N, Section 01,Township 18S, Range 27E**	WDW No.003, NAVAJO-WDW3	NAVAJO REFINING COMPANY, L.L.C.	3001526575
UICI-5-0	San Juan	Unit E, Section 2, Township 29N, Range 12W	SUNCO DISPOSAL NO 001, Key-SUNCO CLASS I (GW-235)	AGUA MOSS, LLC	3004528653

Class II wells inject brines and other fluids associated with oil and gas production, and hydrocarbons for storage. The Class II wells in New Mexico consist of salt water disposal wells, enhanced oil recovery wells, and AGI wells.

Class III wells inject fluids associated with solution mining of minerals beneath the lowermost groundwater of the state of New Mexico. Currently, there are approximately 36 active Class III wells in the State.

Class V wells within the state of New Mexico include 1,005 wells which are largely used for geothermal purposes or for the injection of domestic wastes or aquifer recharge. There are currently 160 discharge permits covering the 1,005 wells, meaning that many of the permits cover multiple wells.

14. Who is responsible for issuing permits and administering the UIC program in New Mexico?

New Mexico has been delegated authority by EPA to administer the UIC program in the state. Responsibility for administering the UIC program in New Mexico is split between NMED and NMOCD. Class I and Class II injection wells related to oil and gas production or processing operations (including refinery operations) are administered by NMOCD. All other injection wells are administered by the Ground Water Quality Bureau of NMED. This division of authority is outlined in the 1982 Joint Powers Agreement between the Environmental Improvement Division, the Oil Conservation Divisions, and the Minerals and Mining Division and the 1989 WQCC Delegation of Responsibilities to NMED and NMOCD. As a result, permits for the wells associated with the proposed regulations would be reviewed, approved and monitored by the NMOCD.

15. Are UIC injection wells constructed and operated in accordance with New Mexico's current regulations protective of human health and environment?

Yes, existing UIC wells have been demonstrated to be protective of groundwater and human health and the environment in New Mexico. My research combined with investigations and discussions with NMOCD and NMED demonstrate that there have not been any documented instances of impairment of groundwater resources due to the operation of injection wells in New Mexico pursuant to UIC regulations.

16. Have there been any instances of contamination of groundwater of the state of New Mexico as a result of migration of fluids from UIC wells?

Based on my knowledge and discussions with NMOCD and NMED technical staff, I am not aware of any information on UIC wells in New Mexico suggesting that a properly permitted UIC well has resulted in contamination of fresh water resources. Clearly there are numerous documented cases of produced water contaminating ground water resources; however, these instances, to the best of my knowledge, are, in contrast, only related to surface disposal of produced water in pits or surface discharges resulting from tank loading/unloading operations or drilling pits. In fact, the use of injection wells (Class II) instead of older methods of handling produced water (like evaporation pits and ponds) has resulted in a safer and more environmentally friendly disposal mechanism with a greater degree of protection of the State's groundwater resources.

Further, as far as Class II AGI wells are concerned, many of which I have worked with during both permitting and operational stages, there have been no incidents resulting in impairment or contamination of groundwater since these wells began to be used in New Mexico in the late 1990s. Additionally, the recent sampling of H_2S during the drilling of a redundant well at the Linam Facility near Hobbs has demonstrated that the siting and construction of an adjacent Class

II AGI well have assured that the injected wastes are well contained within the injection reservoir. In my experience, there have been some operational, compliance, verification and maintenance issues associated with some Class II deep injection wells, but nothing that resulted in impairment or contamination of groundwater.

17. How would the proposed rule, if adopted, protect human health and the environment?

As described more fully above, by proposing regulations that are based on EPA's Class I hazardous waste injection well program and that incorporate each of four requirements discussed above, the proposed regulations provide even further protection of groundwater of the state of New Mexico than existing state and federal UIC regulations. Given the track record of UIC wells permitted under existing State regulations, it is my opinion that the proposed regulations, which incorporate additional safeguards, will protect groundwater of the state of New Mexico, along with human health and the environment.

In the case of the proposed regulations on Class I hazardous waste disposal wells associated with refinery activities, the larger area of investigation (2 miles vs 0.5 or 1.0 mile) as compared to Class I nonhazardous or Class II wells in New Mexico, along with the requirements for closure and post-closure care, assure that these wells will be even more protective of the waters of the state of New Mexico than current state or federal UIC regulations. Further, by providing refineries with the opportunity to implement water conservation measures that reduce the need for fresh groundwater resources, these proposed regulations will enhance the prevention of waste of the precious resources of groundwater of the state of New Mexico.

Alberto A. Gutiérrez, RG

Date: 6/15/2015

GEOLEX®
INCORPORATED

CURRICULUM VITAE
Alberto Alejandro Gutiérrez, CPG

PERSONAL

Name:	Alberto Alejandro Gutiérrez
Birthdate:	August 8, 1955
Birthplace:	La Habana, Cuba
Citizenship:	United States
Languages:	English, Spanish, and French

Specialization: Contaminant Fate and Transport & Risk Assessment, Evaluation of Environmental Liability, Cost Allocation & Source Fingerprinting, Expert Witness Testimony, Forensic Geochemistry, Hydrogeology, Soil & Groundwater Remediation, Regulatory Compliance Negotiation, , Executive Management, Major Program Management.

EDUCATION

University of New Mexico, 1980
M.S. Cum Laude, Geology - Specializing in Hydrogeology/Geomorphology/Remote Sensing

University of Maryland, 1977
B.S. Magna cum Laude, Geomorphology, Phi Beta Kappa, Phi Kappa Phi

McGill University, 1973-1975
Geomorphology, Remote Sensing, Land Use

PROFESSIONAL CERTIFICATIONS AND REGISTRATIONS

AIPG Certified Professional Geologist #6421
Registered Professional Geologist – State of Alabama #1023
Registered Professional Geologist - State of Alaska #421
Registered Professional Geologist - State of Arizona #18002
Registered Professional Geologist - State of California #4373
Registered Professional Geologist - State of Georgia #1305
Registered Professional Geologist - State of Idaho #933
Registered Professional Geologist - State of Illinois #196-001051
Registered Professional Geologist - State of Kansas #544
Registered Professional Geologist - State of Kentucky #2476
Registered Professional Geologist - State of Louisiana #136
Registered Professional Geologist - State of Minnesota #30196
Registered Professional Geologist - State of Mississippi #0648
Registered Professional Geologist - State of Missouri #RG 0527
Registered Professional Geologist - State of North Carolina #1561
Registered Professional Geologist - State of South Carolina #525
Registered Professional Geologist - State of Tennessee #TN4038
Registered Professional Geologist - State of Texas (#113)
Registered Professional Geologist - State of Utah #5218722-2250
Registered Professional Geologist - State of Virginia #PG-1023
Registered Professional Geologist - State of Wyoming #PG-1391

HONORS AND AWARDS

CEO of GCL on INC 500's List of America's Fastest Growing Private Companies 1988 and 1989
Graduated cum Laude, M.S. Geology, University of New Mexico, May 1980.
Flesch Award and Scholarship for outstanding performance in sedimentology and soft rock geology, Department of Geology, University of New Mexico, January 1979
Sigma Gamma Epsilon Geology Honorary Society and Sigma Xi, January 1979
Phi Beta Kappa, University of Maryland 1977
Phi Kappa Phi, University of Maryland, 1977
Graduated Magna cum Laude B.S. Geomorphology, University of Maryland, May 1977
Academic Scholarship awarded by McGill University, April 1975
Honors Geography/Geomorphology Program at McGill University in Montreal, Canada, GPA3.9/4.0

OFFICES HELD

President, CEO and Director, Geolex, Inc., 1996-Present
Director, UNM Science and Technology Corporation, 1994-2004
Director, Albuquerque Museum Foundation 2005-Present
Director, Caswell Silver Foundation, 1995-Present
Director, Frank C. Hibben Foundation, 1999-Present
Director, New Mexico Natural History Museum Foundation, 1988-2007
Commissioner, Interstate Oil and Gas Compact Commission, 1989-2004
Member & Chairman, Clinical Operations Board, University of New Mexico Hospital, 2001-2004
Commissioner, New Mexico Water Quality Control Commission, 1995-2000
Director, University of New Mexico Foundation, 1992-1999
President, CEO and Director, Geoscience Consultants, Ltd. and H+GCL, 1981-1996
Member, American Geological Institute, Minority Scholarship Committee, 1988-1998
Albuquerque Petroleum Association - Board of Directors, Past President, 1986-1989
Chairman, New Mexico Environmental Improvement Board, 1987-1990

ORGANIZATIONS

American Association of Petroleum Geologists-DEG
American Institute of Professional Geologists
Association of Ground Water Scientists and Engineers
Hazardous Materials Control Research Institute
New Mexico Hazardous Waste Society
Albuquerque Geological Society
New Mexico Geological Society
Geological Society of America - Hydrogeology Division
American Geological Institute
Albuquerque Petroleum Association
Texas Professional Geologists Association

EMPLOYMENT

November 1996 - Present
President, CEO
Geolex, Inc.
500 Marquette Avenue NW, Suite 1350
Albuquerque, New Mexico 87102

Duties, Accomplishments, Responsibilities:

1. Founder. Overall corporate and executive management of Geolex, Inc.

2. Expert witness testimony for private clients in Federal and state courts and regulatory agencies in EPA Regions I, II, III, IV, V, VI, VII, VIII, IX and X on fate and transport of organic and inorganic compounds, environmental liability valuation, CERCLA cost allocation, plume differentiation, fate and transport analysis of air, surface water, and groundwater contamination, hazardous waste and petroleum industry practices, forensic geochemistry, remote sensing, insurance recovery, hydrogeology and regulatory compliance cases. Evaluation of soil and groundwater transport of MGP wastes including coal tar, PAHs and other organic compounds.

3. Computer modeling and fate and transport analysis of saturated and unsaturated flow and contaminant transport in soil and groundwater. Analysis of fingerprints of multiple sources of contamination and and associated remedial cost allocation. Reservoir analysis for liquid and acid gas injection evaluations.

4. Evaluation and development of oil and gas waste disposal options for H_2S acid gas and CO_2 sequestration projects. Reservoir identification, characterization, and feasibility evaluation. These evaluations include land status analysis and UIC and acid gas pipeline permitting on private and public lands. Development, permitting, installation, testing, and completion oversight for AGI and CO_2 sequestration projects.

5. Extensive experience as a Dispute Resolution Officer, mediator, binding arbitrator, and expert in cases involving multiple parties including government entities, multinational corporations, insurance companies, and commercial clients. For example, Mr. Gutierrez has mediated a large environmental case involving tens of millions of dollars between two parties over the remediation of an 1800-acre portion of a downtown site in a metropolitan area. This analysis involved multiple elements, including groundwater modeling, Superfund cost allocation, and forensic accounting.

6. Manage and conduct large multi-site environmental due diligence for entire company or facility acquisitions. Develop valuations of actual and potential environmental liabilities. Consulting on strategies for limiting assumption of environmental liability associated with acquisitions. Estimate compliance and remedial costs and evaluate options for remediation of a wide variety of oil and gas, industrial, commercial, and mining sites.

7. Strategic consulting in areas of environmental regulatory compliance and contamination assessment/remedial action in soil and groundwater. Management of major geohydrologic investigations for private and Federal

clients in RCRA and CERCLA enforcement cases. Serves as an expert for U.S. DOJ and numerous industrial companies in cases involving multiple torts and CERCLA cost recovery actions.

8. Preparation, reviews, submittal and obtaining approval of environmental permit documents for Federal and private clients with respect to multiple media, including air, water, solid, hazardous waste, and UIC.

9. Determination and negotiation of final cleanup standards for implementation of soil, groundwater, and indoor remedial actions at RCRA and CERCLA sites including risk assessments for natural attenuation and containment zones.

November 1981 - October 1996
President, CEO
Geoscience Consultants, Ltd. (GCL)
505 Marquette Avenue NW, Suite 1100
Albuquerque, New Mexico 87102

Duties, Accomplishments, Responsibilities:

1. Founder. Overall corporate and executive management including profit/loss and growth responsibilities for GCL including merger with Hygienetics (1991) and sale to BDM (1994). Total number of employees at time of merger was 450 with overall annual revenues and a budget of over $40 million.

2. Development of oil and gas prospects in the Permian Basin of Southeast New Mexico and West Texas. Evaluation of tight gas reservoirs and oil and gas prospects in New Mexico, Texas, Oklahoma, Colorado, and Wyoming. Land and lease status analysis. Nomination and acquisition of oil and gas and mineral leases on Federal and State lands.

3. Overall technical review and supervision of vice president-level staff and multimillion dollar multi-year, multi-task projects.

4. Expert witness testimony for private clients in Federal and state courts and regulatory agencies in all EPA Regions on environmental liability valuation, CERCLA cost allocation, plume differentiation, forensic geochemistry, fate and transport analysis and RCRA hydrogeological and regulatory compliance cases.

5. Management of major geohydrologic investigations for private and Federal clients in RCRA and CERCLA enforcement cases. Includes large federal GOCO sites in EPA Regions III, IV, VI, VII, VIII and IX.

6. Over 30 years of experience in evaluating fate and transport and risk assessment of organic solvents and heavy metals including lead, mercury, arsenic and chromium in soils, groundwater, surface water and air. Direct management and oversight of investigation and remediation of over 50 mercury spill sites for a major gas company throughout the southwestern US.

8. Preparation, reviews, submittal and obtaining approval of environmental permit documents for Federal and private clients. Preparation and negotiation of RCRA Part B Permits for complex NASA and DoD facilities and in the petroleum production, refining and marketing , chemical and bio-medical industries.

9. Design and implementation of remedial actions for contaminated soil and

groundwater at RCRA and CERCLA sites for private and Federal clients including determination and negotiation of cleanup standards.

May 1980 - November 1981
Hydrogeologist/Program Manager
Radian Corporation
13595 Dulles Technology Drive
Herndon, VA 22071

Duties, Accomplishments, Responsibilities:

1. Development and Management of several programs including hazardous waste site selection, groundwater monitoring, well design and installation, photogeology and remote sensing. Development of computer models for hazardous waste disposal site screening and evaluation for US Department of Energy. Management of programs for solid and hazardous waste permit assistance to various industrial clients in the petroleum and alcohol fuels industry.

2. Field studies and sampling of hazardous wastes and groundwater at various sites in Texas, Washington, California, Maryland and Virginia. Sampling of wastes done with complete impermeable suits with respirator or self-contained air supply.

3. Computer modeling of contaminated groundwater by finite difference and finite element methods in shallow unconfined aquifers. Leachate plume definition at contaminated hazardous waste disposal sites. Coordination of groundwater monitoring design, sampling and data preparation for modeling.

4. Business development and marketing in the areas of hydrogeological studies for hazardous waste disposal, groundwater monitoring, and risk assessment for Environmental Impairment Liability insurance.

5. Management of program to provide industrial clients with complete risk assessment services relating to the risks of long-term gradual environmental impairment arising from their operations. Development of system to evaluate environmental risk for EIL insurers to develop products and pricing for RCRA compliance EIL insurance. These risk assessments are used in obtaining EIL insurance in response to financial liability requirements.

April 1979 - May 1980
Geologist GS-9
National Park Service, Remote Sensing Division, SWCRC
Albuquerque, NM 87125

Duties, Accomplishments, Responsibilities:

1. Interpret and analyze geologic and geomorphic environments on aerial photography and Landsat imagery to determine characteristics associated with natural and cultural resources and waste disposal sites.

2. Predict location of cultural and mineral resources through remote sensing and computer analyses of vegetation, geomorphic, pedologic, and geologic data in Shenandoah National Park.

3. Geohydrologic investigations of shallow groundwater in Chaco Canyon National Park. Relationship of shallow groundwater geochemistry to cultural resource preservation.

4. Identification of geomorphic management problems and recommendations for mitigation on NPS lands based on imagery interpretation and subsequent field investigations.

May 1978 - May 1980
Co-Coordinator
Research Grant from New Mexico Energy and Minerals Department (at University of New Mexico)

Duties, Accomplishments, Responsibilities:

1. Research design and instrumentation of three experimental water sheds to examine fluvial geomorphology and sedimentology of the strippable coal belt of the San Juan Basin, NM. Geohydrologic investigation of shallow groundwater in San Juan Basin arroyo systems

2. Field geology and geomorphic mapping of study area and surrounding larger drainage systems.

3. Photogeologic interpretation and mapping of stratigraphy, reclamation potential and surficial processes in study areas.

September 1977 – December 1978
Private Consulting Geologist
BIA San Juan Basin Regional Uranium Study

Duties, Accomplishments, Responsibilities:

1. Examine hydrogeology and shallow groundwater regime in Ambrosia Lake and Church Rock mining districts. Geochemical studies of leachate from uranium mine tailings disposal. Modeling of groundwater movement in shallow alluvial aquifers near tailings disposal areas.

2. Define dominant geomorphic processes operating in districts of present or predicted high level activity, i.e., Crownpoint, Ambrosia Lake, etc.

3. Analyze impacts of exploration, mining, and milling on geomorphic and surface hydrology variables of selected districts.

February 1976 - July 1977
Geologist, GS-5
U.S. Geological Survey, National Center, Reston, VA
Environmental Impact Analysis Program

Duties, Accomplishments, Responsibilities:

1. Research innovative methods of analyzing and quantifying geomorphic and hydrologic impacts of surface coal mining in semiarid western states. Analysis of environmental systems for use as baseline data to analyze impacts of surface mining.

2. Designed and executed research projects to establish processes operating in, and rates of natural reclamation on unreclaimed surface coal mines in southeastern Wyoming. Ecosystem modeling for EIS preparation.

3. Monitoring of geomorphic variables in surface mine reclamation through use of high-altitude photography and Landsat imagery. Research, development, writing and completion of a manual for the preparation of environmental impact statements on surface mining and oil and gas development.

TEACHING EXPERIENCE

University of New Mexico Geology and Geography Department - Fall 1977-Spring 1980 - Teaching Assistant for Courses in Geomorphology, Quantitative Geomorphology, Geomorphology Lab and Field Courses, Photogeology and Remote Sensing, Physical Geography, Hydrogeology and Environmental Geology

PUBLICATIONS

Gutierrez, Alberto A. and James C. Hunter 2013, Control and Prevention of Hydrate Formation and Accumulation in Acid Gas Injection Systems During Transient Pressure/Temperature Conditions; Proceedings of the Fourth International Symposium on Acid Gas Injection; September 24-27, Calgary, Alberta Canada; 23pp.

Ali, Liaqat, Russell E. Bentley, Alberto A. Gutierrez and Yosmar Gonzales, 2013, Using Distributed Temperature Sensing Technology in Acid Gas Injection Design, Acta Geotechnica; Online ISSN 1861-1133, July 2013, Springer Berlin Heidelberg, 12pp

Gutiérrez, Alberto, A.; 2011 Acid Gas Injection in the Permian Basin: New Developments and Recent Case Studies from New Mexico; Presented at Permian Basin Gas Processor's Association Technical Meeting, May 3, Midland TX.

Lescinsky Dr. David T, ; Alberto A. Gutierrez, RG; James C. Hunter, RG; Julie W. Gutierrez; and Russell E. Bentley, PE, 2010, Acid Gas Injection in the Permian and San Juan Basins: Recent Case Studies from New Mexico; Proceedings of the Second International Symposium on Acid Gas Injection; September 27-30 Calgary, Alberta Canada; 29pp.

Gutierrez, Alberto A., 2009, Benzene Vapor Transport: Measurement and Modeling to Evaluate Remedial Systems and Benzene Exposure in Ambient Air; Proceedings of the 2009 Groundwater Summit, National Groundwater Association April 19-23 Tucson AZ; 24pp.

Gutierrez, Alberto A., 2008, Hydrocarbon Vapor Transport Measurement and Modeling to Evaluate Remedial System Performance and Benzene Exposure in Ambient Air; Proceedings of the Innovative Remedial Technology Conference; American Institute of Professional Geologists; November 6-7, 2008; 22 pp.

Gutierrez, Alberto A., 2004, MTBE in Groundwater; Current Scientific Regulatory and Litigation Trends; Proceedings of the 33rd Annual Conference on Environmental Law; March 11-14, 2004; pp. 449-454

Gutierrez, Alberto A. 1997, Chemical Fingerprinting: A Useful Tool for Source Identification, Differentiation and Remedial Cost Allocation, Hazardous Waste Strategies Update, Volume 8, Number 2, Winter 1997

Gutierrez, Alberto A. and Martin Chandler, 1996, Use of Chemical Fingerprinting in Plume Differentiation and Cost Allocation, The Military Engineer, October/November, 1996

Gutierrez, Alberto A., 1996, Use of Chemical Fingerprints for Source Differentiation at Military Sites, Paper presented at Third International Symposium on Environmental Contamination in Central and Eastern Europe on 12 September in Warsaw, Poland.

Gutierrez, Alberto A., 1996, Reducing Environmental Liability - A Claims Management Approach, Best's Review / Property Casualty April, 1996

Gutierrez, Alberto A. and Michael W. Selke, 1996 Rapid and Cost-Effective Characterization of Deep Groundwater Contamination, Soil and Groundwater Cleanup, April 1996 Issue

Gutierrez, Alberto A., and Randall T. Hicks, 1992, Risk Assessment of Produced Water Disposal Sites using Field Audits and Aquifer Simulation Modeling, paper presented at and published by 1992 International Produced Water Symposium, San Diego, CA

Gutierrez, Alberto A., and Trent H. Thomas, 1990, Negotiating and Implementing RCRA 3008(h) Orders, Federal Facilities Environmental Journal, Volume 1, No. 3, p 313-323

Gutierrez, Alberto A., and Trent H. Thomas, 1990, The Technical Requirements of an RFI/CMS, paper presented at NASA Environmental Conference, January 17-21, Tucson, Arizona.

Gutierrez, Alberto A., and Trent H. Thomas, 1989, Cost-Effective Assessment and Remediation of Leaking Underground Storage Tanks, paper presented at NASA Environmental Symposium, January 17-20 San Diego, California.

Gutierrez, Alberto A., and Kim H. Bullerdick, 1985, Underground Storage Tanks and Corrective Action: Significant New Additions to RCRA, in "The Environmental Forum", Environmental Law Institute, Washington DC, 16p.

Gutierrez, Alberto A., and James C. Hunter, 1985, Exploring for Groundwater in Fractured Carbonates, East-Central New Mexico, Proceedings of the Western Regional Groundwater Conference, Association of Groundwater Scientists and Engineers, January, 1985, Reno, Nevada p.274-281.

Gutierrez, Alberto A., 1983, Sediment Transport in San Juan Basin Badlands, Proceedings of 2nd International American Geomorphological Association, October 7-10, 1983, Albuquerque, New Mexico.

Gutierrez, Alberto A., 1983, The Abo Formation, a Tight Sandstone Gas Reservoir of Southeastern New Mexico, paper presented at the annual meeting of the American Association of Petroleum Geologists in Dallas, Texas, April 17-20, 1983.

Gutierrez, Alberto A., and J.I. Ebert, 1981, Remote Sensing of Geomorphological Factors Affecting the Visibility of Archaeological Materials, Proceedings American Society of Photogrammetry (ASP-ASCM) 1981 Annual Meeting February 22-27, 1981, Washington, D.C.

Gutierrez, Alberto A., 1981, Geomorphology and Hydrology of the Carlsbad Gypsum Plain, Eddy County, New Mexico, Proceedings Eighth International Congress of Speleology, July 18-24, 1981, Bowling Green, Kentucky, USA.

Wells, S.G. and Alberto A. Gutierrez, 1981, Quaternary Evolution of Badlands in the Southeastern Colorado Plateau, USA in Badland Geomorphology and Pipe Erosion (R. Bryan and A. Yair eds.) Geo-Abstracts, LTD, London, England.

Gutierrez, Alberto A., and W. Pearce, 1980, Hazardous Waste Disposal Options, Costs and Disposal Site Evaluation for Coal Gasification/Liquefaction Facilities, Radian Report for US DOE Office of Major Project Management.

Gutierrez, Alberto A., 1980, Sediment Transport in Badland Watersheds, paper presented at the Geological Society of America (GSA) Annual Meeting (1980) in Atlanta, Georgia, November 17-20. GSA Abstracts (1980) p. 440 - MS Thesis Summary.

Ebert, J.I. and Alberto A. Gutierrez, 1979, Applications of Remote Sensor Data to Prediction and Assessment of Cultural Resources and Geomorphic Environments, NPS, Remote Sensing Division
Report 79-7.

Gutierrez, Alberto A., 1979, Quaternary Landscapes of the San Juan Basin, paper presented at the Museum of Northern Arizona, Symposium on the Geology of the Colorado Plateau, August 31, Flagstaff, Arizona.

Gutierrez, Alberto A. and S.G. Wells, 1979, Geomorphology and Hydrology of the Gypsum Plain Karst, Eddy County, New Mexico, Cave Research Foundation 1978 Annual Report.

Hannaford, K., Alberto A. Gutierrez, et al, Hydrogeology and Dissolution History of Alabaster Cave, North-Central New Mexico, Cave Research Foundation 1978 Annual Report.

Ebert, J.I. and Alberto A. Gutierrez, 1979, Relationships Between Landscapes and Archaeological Sites in Shenandoah National Park: A Remote Sensing Approach, APT Bulletin, Vol. XI, No. 4.

Wells, S.G., and Alberto A. Gutierrez, 1979, Geomorphic Adjustments of Fluvial Systems to Ground-water Hydrology in Semiarid and Humid Karst, Cave Research Foundation 1978 Annual Report.

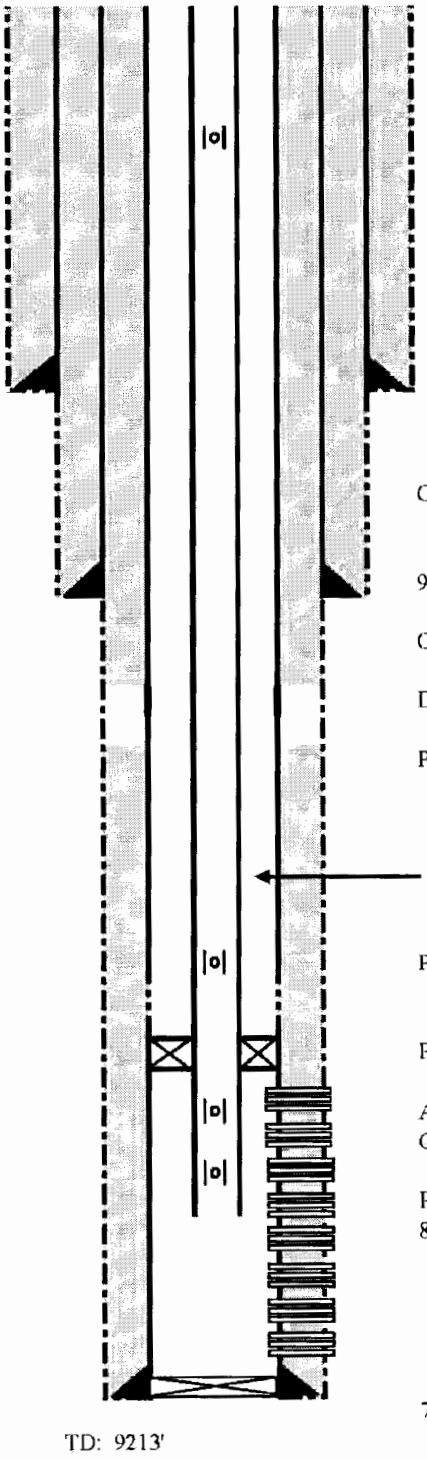
Gutierrez, Alberto A., et al, National Park Service of Canada Bulletin "Archaeology and Prehistoric Land Use of the Proposed Site of Baffin Island National Park, Baffin Island, NWT, Canada," 1975 (end product of research in McGill University Geography Department).

Exhibit B Typical Design of Injection Well Showing Multiple Casing/Cement Strings to Protect Ground Water

Figure 7

DCP LINAM AGI #1
WELLBORE SCHEMATIC

Location: 1980' FSL, 1980' FWL
STR 30-T18S-R37E
County, St.: LEA, NEW MEXICO



SURFACE CASING:
13 3/8", 48.00#/ft, H40, STC at 530'

INTERMEDIATE CASING:
9 5/8", 40.00#/ft, J55, LTC at 4212'

PRODUCTION CASING:
7", 26.00#/ft, L80, STC at 9200'
PBTD = 9137'

TUBING:
Subsurface Safety Valve at 250 ft
3 1/2", 9.2#/ft, L80, Hunting SLF at 8650'

PACKER:
Permanent Production Packer
Adjustable Choke
Check valve

PACKER FLUID (CORROSION INHIBITED):
Diesel w/ Cortron R-2525 (Corrosion inhibitor and oxygen scavenger)

PERFORATIONS:

Primary Target	Secondary Target
Lower Bone Springs	Brushy Canyon
8710' - 8730'	5000' to 5300'
8755' - 8765'	(Not perforated)
8780' - 8795'	
8780' - 8890'	
8925' - 8930'	
8945' - 8975'	
8985' - 9000'	
9045' - 9085'	

GEOLEX®
INCORPORATED

CURRICULUM VITAE
Alberto Alejandro Gutiérrez, CPG

PERSONAL

Name:	Alberto Alejandro Gutiérrez
Birthdate:	August 8, 1955
Birthplace:	La Habana, Cuba
Citizenship:	United States
Languages:	English, Spanish, and French

Specialization: Contaminant Fate and Transport & Risk Assessment, Evaluation of Environmental Liability, Cost Allocation & Source Fingerprinting, Expert Witness Testimony, Forensic Geochemistry, Hydrogeology, Soil & Groundwater Remediation, Regulatory Compliance Negotiation, , Executive Management, Major Program Management.

EDUCATION

University of New Mexico, 1980
M.S. Cum Laude, Geology - Specializing in Hydrogeology/Geomorphology/Remote Sensing

University of Maryland, 1977
B.S. Magna cum Laude, Geomorphology, Phi Beta Kappa, Phi Kappa Phi

McGill University, 1973-1975
Geomorphology, Remote Sensing, Land Use

PROFESSIONAL CERTIFICATIONS AND REGISTRATIONS

AIPG Certified Professional Geologist #6421
Registered Professional Geologist – State of Alabama #1023
Registered Professional Geologist - State of Alaska #421
Registered Professional Geologist - State of Arizona #18002
Registered Professional Geologist - State of California #4373
Registered Professional Geologist - State of Georgia #1305
Registered Professional Geologist - State of Idaho #933
Registered Professional Geologist - State of Illinois #196-001051
Registered Professional Geologist - State of Kansas #544
Registered Professional Geologist - State of Kentucky #2476
Registered Professional Geologist - State of Louisiana #136
Registered Professional Geologist - State of Minnesota #30196
Registered Professional Geologist - State of Mississippi #0648
Registered Professional Geologist - State of Missouri #RG 0527
Registered Professional Geologist - State of North Carolina #1561
Registered Professional Geologist - State of South Carolina #525
Registered Professional Geologist - State of Tennessee #TN4038
Registered Professional Geologist - State of Texas (#113)
Registered Professional Geologist - State of Utah #5218722-2250
Registered Professional Geologist - State of Virginia #PG-1023
Registered Professional Geologist - State of Wyoming #PG-1391

HONORS AND AWARDS

CEO of GCL on INC 500's List of America's Fastest Growing Private Companies 1988 and 1989
Graduated cum Laude, M.S. Geology, University of New Mexico, May 1980.
Flesch Award and Scholarship for outstanding performance in sedimentology and soft rock geology, Department of Geology, University of New Mexico, January 1979
Sigma Gamma Epsilon Geology Honorary Society and Sigma Xi, January 1979
Phi Beta Kappa, University of Maryland 1977
Phi Kappa Phi, University of Maryland, 1977
Graduated Magna cum Laude B.S. Geomorphology, University of Maryland, May 1977
Academic Scholarship awarded by McGill University, April 1975
Honors Geography/Geomorphology Program at McGill University in Montreal, Canada, GPA3.9/4.0

OFFICES HELD

President, CEO and Director, Geolex, Inc., 1996-Present
Director, UNM Science and Technology Corporation, 1994-2004
Director, Albuquerque Museum Foundation 2005-Present
Director, Caswell Silver Foundation, 1995-Present
Director, Frank C. Hibben Foundation, 1999-Present
Director, New Mexico Natural History Museum Foundation, 1988-2007
Commissioner, Interstate Oil and Gas Compact Commission, 1989-2004
Member & Chairman, Clinical Operations Board, University of New Mexico Hospital, 2001-2004
Commissioner, New Mexico Water Quality Control Commission, 1995-2000
Director, University of New Mexico Foundation, 1992-1999
President, CEO and Director, Geoscience Consultants, Ltd. and H+GCL, 1981-1996
Member, American Geological Institute, Minority Scholarship Committee, 1988-1998
Albuquerque Petroleum Association - Board of Directors, Past President, 1986-1989
Chairman, New Mexico Environmental Improvement Board, 1987-1990

ORGANIZATIONS

American Association of Petroleum Geologists-DEG
American Institute of Professional Geologists
Association of Ground Water Scientists and Engineers
Hazardous Materials Control Research Institute
New Mexico Hazardous Waste Society
Albuquerque Geological Society
New Mexico Geological Society
Geological Society of America - Hydrogeology Division
American Geological Institute
Albuquerque Petroleum Association
Texas Professional Geologists Association

EMPLOYMENT

November 1996 - Present
President, CEO
Geolex, Inc.
500 Marquette Avenue NW, Suite 1350
Albuquerque, New Mexico 87102

Duties, Accomplishments, Responsibilities:

1. Founder. Overall corporate and executive management of Geolex, Inc.

2. Expert witness testimony for private clients in Federal and state courts and regulatory agencies in EPA Regions I, II, III, IV, V, VI, VII, VIII, IX and X on fate and transport of organic and inorganic compounds, environmental liability valuation, CERCLA cost allocation, plume differentiation, fate and transport analysis of air, surface water, and groundwater contamination, hazardous waste and petroleum industry practices, forensic geochemistry, remote sensing, insurance recovery, hydrogeology and regulatory compliance cases. Evaluation of soil and groundwater transport of MGP wastes including coal tar, PAHs and other organic compounds.

3. Computer modeling and fate and transport analysis of saturated and unsaturated flow and contaminant transport in soil and groundwater. Analysis of fingerprints of multiple sources of contamination and and associated remedial cost allocation. Reservoir analysis for liquid and acid gas injection evaluations.

4. Evaluation and development of oil and gas waste disposal options for H_2S acid gas and CO_2 sequestration projects. Reservoir identification, characterization, and feasibility evaluation. These evaluations include land status analysis and UIC and acid gas pipeline permitting on private and public lands. Development, permitting, installation, testing, and completion oversight for AGI and CO_2 sequestration projects.

5. Extensive experience as a Dispute Resolution Officer, mediator, binding arbitrator, and expert in cases involving multiple parties including government entities, multinational corporations, insurance companies, and commercial clients. For example, Mr. Gutierrez has mediated a large environmental case involving tens of millions of dollars between two parties over the remediation of an 1800-acre portion of a downtown site in a metropolitan area. This analysis involved multiple elements, including groundwater modeling, Superfund cost allocation, and forensic accounting.

6. Manage and conduct large multi-site environmental due diligence for entire company or facility acquisitions. Develop valuations of actual and potential environmental liabilities. Consulting on strategies for limiting assumption of environmental liability associated with acquisitions. Estimate compliance and remedial costs and evaluate options for remediation of a wide variety of oil and gas, industrial, commercial, and mining sites.

7. Strategic consulting in areas of environmental regulatory compliance and contamination assessment/remedial action in soil and groundwater. Management of major geohydrologic investigations for private and Federal

clients in RCRA and CERCLA enforcement cases. Serves as an expert for U.S. DOJ and numerous industrial companies in cases involving multiple torts and CERCLA cost recovery actions.

8. Preparation, reviews, submittal and obtaining approval of environmental permit documents for Federal and private clients with respect to multiple media, including air, water, solid, hazardous waste, and UIC.

9. Determination and negotiation of final cleanup standards for implementation of soil, groundwater, and indoor remedial actions at RCRA and CERCLA sites including risk assessments for natural attenuation and containment zones.

November 1981 - October 1996
President, CEO
Geoscience Consultants, Ltd. (GCL)
505 Marquette Avenue NW, Suite 1100
Albuquerque, New Mexico 87102

Duties, Accomplishments, Responsibilities:

1. Founder. Overall corporate and executive management including profit/loss and growth responsibilities for GCL including merger with Hygienetics (1991) and sale to BDM (1994). Total number of employees at time of merger was 450 with overall annual revenues and a budget of over $40 million.

2. Development of oil and gas prospects in the Permian Basin of Southeast New Mexico and West Texas. Evaluation of tight gas reservoirs and oil and gas prospects in New Mexico, Texas, Oklahoma, Colorado, and Wyoming. Land and lease status analysis. Nomination and acquisition of oil and gas and mineral leases on Federal and State lands.

3. Overall technical review and supervision of vice president-level staff and multimillion dollar multi-year, multi-task projects.

4. Expert witness testimony for private clients in Federal and state courts and regulatory agencies in all EPA Regions on environmental liability valuation, CERCLA cost allocation, plume differentiation, forensic geochemistry, fate and transport analysis and RCRA hydrogeological and regulatory compliance cases.

5. Management of major geohydrologic investigations for private and Federal clients in RCRA and CERCLA enforcement cases. Includes large federal GOCO sites in EPA Regions III, IV, VI, VII, VIII and IX.

6. Over 30 years of experience in evaluating fate and transport and risk assessment of organic solvents and heavy metals including lead, mercury, arsenic and chromium in soils, groundwater, surface water and air. Direct management and oversight of investigation and remediation of over 50 mercury spill sites for a major gas company throughout the southwestern US.

8. Preparation, reviews, submittal and obtaining approval of environmental permit documents for Federal and private clients. Preparation and negotiation of RCRA Part B Permits for complex NASA and DoD facilities and in the petroleum production, refining and marketing , chemical and bio-medical industries.

9. Design and implementation of remedial actions for contaminated soil and

groundwater at RCRA and CERCLA sites for private and Federal clients including determination and negotiation of cleanup standards.

May 1980 - November 1981
Hydrogeologist/Program Manager
Radian Corporation
13595 Dulles Technology Drive
Herndon, VA 22071

Duties, Accomplishments, Responsibilities:

1. Development and Management of several programs including hazardous waste site selection, groundwater monitoring, well design and installation, photogeology and remote sensing. Development of computer models for hazardous waste disposal site screening and evaluation for US Department of Energy. Management of programs for solid and hazardous waste permit assistance to various industrial clients in the petroleum and alcohol fuels industry.

2. Field studies and sampling of hazardous wastes and groundwater at various sites in Texas, Washington, California, Maryland and Virginia. Sampling of wastes done with complete impermeable suits with respirator or self-contained air supply.

3. Computer modeling of contaminated groundwater by finite difference and finite element methods in shallow unconfined aquifers. Leachate plume definition at contaminated hazardous waste disposal sites. Coordination of groundwater monitoring design, sampling and data preparation for modeling.

4. Business development and marketing in the areas of hydrogeological studies for hazardous waste disposal, groundwater monitoring, and risk assessment for Environmental Impairment Liability insurance.

5. Management of program to provide industrial clients with complete risk assessment services relating to the risks of long-term gradual environmental impairment arising from their operations. Development of system to evaluate environmental risk for EIL insurers to develop products and pricing for RCRA compliance EIL insurance. These risk assessments are used in obtaining EIL insurance in response to financial liability requirements.

April 1979 - May 1980
Geologist GS-9
National Park Service, Remote Sensing Division, SWCRC
Albuquerque, NM 87125

Duties, Accomplishments, Responsibilities:

1. Interpret and analyze geologic and geomorphic environments on aerial photography and Landsat imagery to determine characteristics associated with natural and cultural resources and waste disposal sites.

2. Predict location of cultural and mineral resources through remote sensing and computer analyses of vegetation, geomorphic, pedologic, and geologic data in Shenandoah National Park.

3. Geohydrologic investigations of shallow groundwater in Chaco Canyon National Park. Relationship of shallow groundwater geochemistry to cultural resource preservation.

4. Identification of geomorphic management problems and recommendations for mitigation on NPS lands based on imagery interpretation and subsequent field investigations.

May 1978 - May 1980
Co-Coordinator
Research Grant from New Mexico Energy and Minerals Department (at University of New Mexico)

Duties, Accomplishments, Responsibilities:

1. Research design and instrumentation of three experimental water sheds to examine fluvial geomorphology and sedimentology of the strippable coal belt of the San Juan Basin, NM. Geohydrologic investigation of shallow groundwater in San Juan Basin arroyo systems

2. Field geology and geomorphic mapping of study area and surrounding larger drainage systems.

3. Photogeologic interpretation and mapping of stratigraphy, reclamation potential and surficial processes in study areas.

September 1977 – December 1978
Private Consulting Geologist
BIA San Juan Basin Regional Uranium Study

Duties, Accomplishments, Responsibilities:

1. Examine hydrogeology and shallow groundwater regime in Ambrosia Lake and Church Rock mining districts. Geochemical studies of leachate from uranium mine tailings disposal. Modeling of groundwater movement in shallow alluvial aquifers near tailings disposal areas.

2. Define dominant geomorphic processes operating in districts of present or predicted high level activity, i.e., Crownpoint, Ambrosia Lake, etc.

3. Analyze impacts of exploration, mining, and milling on geomorphic and surface hydrology variables of selected districts.

February 1976 - July 1977
Geologist, GS-5
U.S. Geological Survey, National Center, Reston, VA
Environmental Impact Analysis Program

Duties, Accomplishments, Responsibilities:

1. Research innovative methods of analyzing and quantifying geomorphic and hydrologic impacts of surface coal mining in semiarid western states. Analysis of environmental systems for use as baseline data to analyze impacts of surface mining.

2. Designed and executed research projects to establish processes operating in, and rates of natural reclamation on unreclaimed surface coal mines in southeastern Wyoming. Ecosystem modeling for EIS preparation.

3. Monitoring of geomorphic variables in surface mine reclamation through use of high-altitude photography and Landsat imagery. Research, development, writing and completion of a manual for the preparation of environmental impact statements on surface mining and oil and gas development.

TEACHING EXPERIENCE

University of New Mexico Geology and Geography Department - Fall 1977-Spring 1980 - Teaching Assistant for Courses in Geomorphology, Quantitative Geomorphology, Geomorphology Lab and Field Courses, Photogeology and Remote Sensing, Physical Geography, Hydrogeology and Environmental Geology

PUBLICATIONS

Gutierrez, Alberto A. and James C. Hunter 2013, Control and Prevention of Hydrate Formation and Accumulation in Acid Gas Injection Systems During Transient Pressure/Temperature Conditions; Proceedings of the Fourth International Symposium on Acid Gas Injection; September 24-27, Calgary, Alberta Canada; 23pp.

Ali, Liaqat, Russell E. Bentley, Alberto A. Gutierrez and Yosmar Gonzales, 2013, Using Distributed Temperature Sensing Technology in Acid Gas Injection Design, Acta Geotechnica; Online ISSN 1861-1133, July 2013, Springer Berlin Heidelberg, 12pp

Gutiérrez, Alberto, A.; 2011 Acid Gas Injection in the Permian Basin: New Developments and Recent Case Studies from New Mexico; Presented at Permian Basin Gas Processor's Association Technical Meeting, May 3, Midland TX.

Lescinsky Dr. David T, ; Alberto A. Gutierrez, RG; James C. Hunter, RG; Julie W. Gutierrez; and Russell E. Bentley, PE, 2010, Acid Gas Injection in the Permian and San Juan Basins: Recent Case Studies from New Mexico; Proceedings of the Second International Symposium on Acid Gas Injection; September 27-30 Calgary, Alberta Canada; 29pp.

Gutierrez, Alberto A., 2009, Benzene Vapor Transport: Measurement and Modeling to Evaluate Remedial Systems and Benzene Exposure in Ambient Air; Proceedings of the 2009 Groundwater Summit, National Groundwater Association April 19-23 Tucson AZ; 24pp.

Gutierrez, Alberto A., 2008, Hydrocarbon Vapor Transport Measurement and Modeling to Evaluate Remedial System Performance and Benzene Exposure in Ambient Air; Proceedings of the Innovative Remedial Technology Conference; American Institute of Professional Geologists; November 6-7, 2008; 22 pp.

Gutierrez, Alberto A., 2004, MTBE in Groundwater; Current Scientific Regulatory and Litigation Trends; Proceedings of the 33rd Annual Conference on Environmental Law; March 11-14, 2004; pp. 449-454

Gutierrez, Alberto A. 1997, Chemical Fingerprinting: A Useful Tool for Source Identification, Differentiation and Remedial Cost Allocation, Hazardous Waste Strategies Update, Volume 8, Number 2, Winter 1997

Gutierrez, Alberto A. and Martin Chandler, 1996, Use of Chemical Fingerprinting in Plume Differentiation and Cost Allocation, The Military Engineer, October/November, 1996

Gutierrez, Alberto A., 1996, Use of Chemical Fingerprints for Source Differentiation at Military Sites, Paper presented at Third International Symposium on Environmental Contamination in Central and Eastern Europe on 12 September in Warsaw, Poland.

Gutierrez, Alberto A., 1996, Reducing Environmental Liability - A Claims Management Approach, Best's Review / Property Casualty April, 1996

Gutierrez, Alberto A. and Michael W. Selke, 1996 Rapid and Cost-Effective Characterization of Deep Groundwater Contamination, Soil and Groundwater Cleanup, April 1996 Issue

Gutierrez, Alberto A., and Randall T. Hicks, 1992, Risk Assessment of Produced Water Disposal Sites using Field Audits and Aquifer Simulation Modeling, paper presented at and published by 1992 International Produced Water Symposium, San Diego, CA

Gutierrez, Alberto A., and Trent H. Thomas, 1990, Negotiating and Implementing RCRA 3008(h) Orders, Federal Facilities Environmental Journal, Volume 1, No. 3, p 313-323

Gutierrez, Alberto A., and Trent H. Thomas, 1990, The Technical Requirements of an RFI/CMS, paper presented at NASA Environmental Conference, January 17-21, Tucson, Arizona.

Gutierrez, Alberto A., and Trent H. Thomas, 1989, Cost-Effective Assessment and Remediation of Leaking Underground Storage Tanks, paper presented at NASA Environmental Symposium, January 17-20 San Diego, California.

Gutierrez, Alberto A., and Kim H. Bullerdick, 1985, Underground Storage Tanks and Corrective Action: Significant New Additions to RCRA, in "The Environmental Forum", Environmental Law Institute, Washington DC, 16p.

Gutierrez, Alberto A., and James C. Hunter, 1985, Exploring for Groundwater in Fractured Carbonates, East-Central New Mexico, Proceedings of the Western Regional Groundwater Conference, Association of Groundwater Scientists and Engineers, January, 1985, Reno, Nevada p.274-281.

Gutierrez, Alberto A., 1983, Sediment Transport in San Juan Basin Badlands, Proceedings of 2nd International American Geomorphological Association, October 7-10, 1983, Albuquerque, New Mexico.

Gutierrez, Alberto A., 1983, The Abo Formation, a Tight Sandstone Gas Reservoir of Southeastern New Mexico, paper presented at the annual meeting of the American Association of Petroleum Geologists in Dallas, Texas, April 17-20, 1983.

Gutierrez, Alberto A., and J.I. Ebert, 1981, Remote Sensing of Geomorphological Factors Affecting the Visibility of Archaeological Materials, Proceedings American Society of Photogrammetry (ASP-ASCM) 1981 Annual Meeting February 22-27, 1981, Washington, D.C.

Gutierrez, Alberto A., 1981, Geomorphology and Hydrology of the Carlsbad Gypsum Plain, Eddy County, New Mexico, Proceedings Eighth International Congress of Speleology, July 18-24, 1981, Bowling Green, Kentucky, USA.

Wells, S.G. and Alberto A. Gutierrez, 1981, Quaternary Evolution of Badlands in the Southeastern Colorado Plateau, USA in Badland Geomorphology and Pipe Erosion (R. Bryan and A. Yair eds.) Geo-Abstracts, LTD, London, England.

Gutierrez, Alberto A., and W. Pearce, 1980, Hazardous Waste Disposal Options, Costs and Disposal Site Evaluation for Coal Gasification/Liquefaction Facilities, Radian Report for US DOE Office of Major Project Management.

Gutierrez, Alberto A., 1980, Sediment Transport in Badland Watersheds, paper presented at the Geological Society of America (GSA) Annual Meeting (1980) in Atlanta, Georgia, November 17-20. GSA Abstracts (1980) p. 440 - MS Thesis Summary.

Ebert, J.I. and Alberto A. Gutierrez, 1979, Applications of Remote Sensor Data to Prediction and Assessment of Cultural Resources and Geomorphic Environments, NPS, Remote Sensing Division
Report 79-7.

Gutierrez, Alberto A., 1979, Quaternary Landscapes of the San Juan Basin, paper presented at the Museum of Northern Arizona, Symposium on the Geology of the Colorado Plateau, August 31, Flagstaff, Arizona.

Gutierrez, Alberto A. and S.G. Wells, 1979, Geomorphology and Hydrology of the Gypsum Plain Karst, Eddy County, New Mexico, Cave Research Foundation 1978 Annual Report.

Hannaford, K., Alberto A. Gutierrez, et al, Hydrogeology and Dissolution History of Alabaster Cave, North-Central New Mexico, Cave Research Foundation 1978 Annual Report.

Ebert, J.I. and Alberto A. Gutierrez, 1979, Relationships Between Landscapes and Archaeological Sites in Shenandoah National Park: A Remote Sensing Approach, APT Bulletin, Vol. XI, No. 4.

Wells, S.G., and Alberto A. Gutierrez, 1979, Geomorphic Adjustments of Fluvial Systems to Ground-water Hydrology in Semiarid and Humid Karst, Cave Research Foundation 1978 Annual Report.

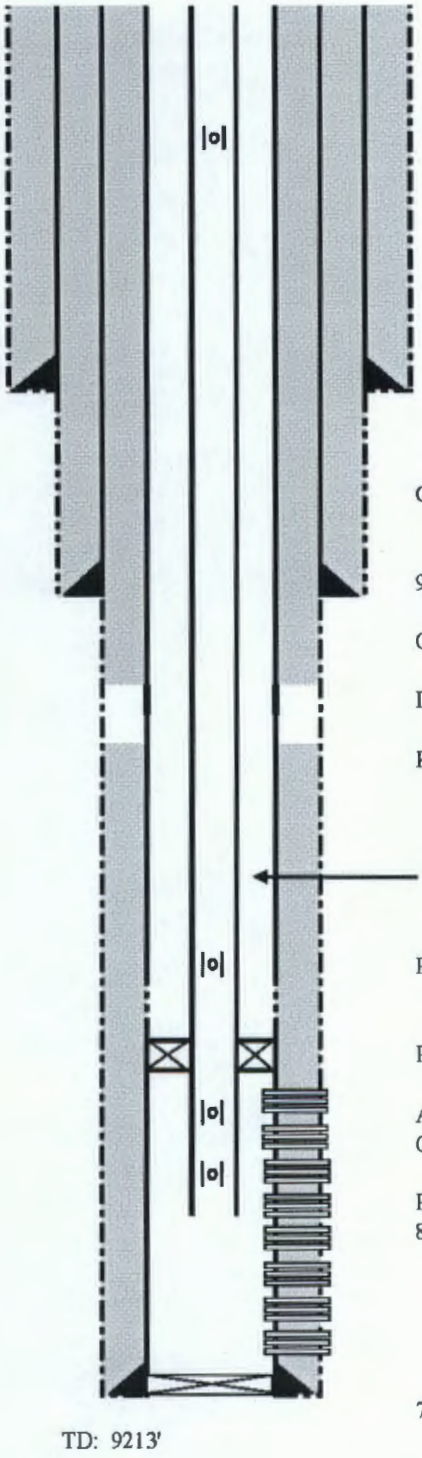
Gutierrez, Alberto A., et al, National Park Service of Canada Bulletin "Archaeology and Prehistoric Land Use of the Proposed Site of Baffin Island National Park, Baffin Island, NWT, Canada," 1975 (end product of research in McGill University Geography Department).

Exhibit B Typical Design of Injection Well Showing Multiple Casing/Cement Strings to Protect Ground Water

Figure 7

DCP LINAM AGI #1
WELLBORE SCHEMATIC

Location: 1980' FSL, 1980' FWL
STR 30-T18S-R37E
County, St.: LEA, NEW MEXICO



SURFACE CASING:
13 3/8", 48.00#/ft, H40, STC at 530'

INTERMEDIATE CASING:
9 5/8", 40.00#/ft, J55, LTC at 4212'

PRODUCTION CASING:
7", 26.00#/ft, L80, STC at 9200'
PBTD = 9137'

TUBING:
Subsurface Safety Valve at 250 ft
3 1/2", 9.2#/ft, L80, Hunting SLF at 8650'

PACKER:
Permanent Production Packer
Adjustable Choke
Check valve

PACKER FLUID (CORROSION INHIBITED):
Diesel w/ Cortron R-2525 (Corrosion inhibitor and oxygen scavenger)

PERFORATIONS:

Primary Target	**Secondary Target**
Lower Bone Springs	Brushy Canyon
8710' - 8730'	5000' to 5300'
8755' - 8765'	(Not perforated)
8780' - 8795'	
8780' - 8890'	
8925' - 8930'	
8945' - 8975'	
8985' - 9000'	
9045' - 9085'	

SECOND AMMENDED PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC

PREPARED BY
GEOLEX, INC
500 MARQUETTE AVENUE NW SUITE 1350
ALBUQUERQUE, NEW MEXICO 87102

JUNE 15, 2015

GEOLEX INCORPORATED

Executive Summary

- This petition seeks adaptation of a permitting program for disposal wells used by oil refineries to dispose of wastes that may be classified as hazardous due to the concentration of chemical constituents caused by water conservation and reuse – Water Conservation Rule (WCR)
- Adopting a permitting program for these wells similar to that used by NMOCD for Class II disposal wells will provide a number of benefits to the State, oil refineries, and others in the industry, including water conservation, waste minimization, reduction of fresh water usage by oil refineries, preservation of disposal capacity, and increased operational flexibility at refineries
- Nearby water wells and surface and ground waters will be protected by well design and geologic factors
- The potential effect of these wells on the environment and waters of the state of New Mexico will be monitored as required by these regulations
- The adequacy of any proposed injection interval will be demonstrated by a full geologic review that will be submitted in a format similar to the current applications filed in support of Class II AGI wells that is needed to approve the installation and operation of an injection well pursuant to these regulations
- The proposed regulations sufficient protect groundwater and the environment by ensuring that injected fluids will not migrate out of the injection zone during operations or after well closure.

• CLASSES OF UIC WELLS IN ALL EPA REGIONS

Classes	Use	Inventory
Class I	Inject hazardous wastes, industrial non-hazardous liquids, or municipal wastewater beneath the lowermost USDW	680 wells
Class II	Inject brines and other fluids associated with oil and gas production, and hydrocarbons for storage.	172, 068 wells
Class III	Inject fluids associated with solution mining of minerals beneath the lowermost USDW.	22,131 wells
Class IV	Inject hazardous or radioactive wastes into or above USDWs. These wells are banned unless authorized under a federal or state ground water remediation project.	33 sites
Class V	All injection wells not included in Classes I–IV. In general, Class V wells inject non-hazardous fluids into or above USDWs and are typically shallow, on-site disposal systems. However, there are some deep Class V wells that inject below USDWs.	400,000 to 650,000 wells Note: an inventory range is presented because a complete inventory is not available.
Class VI	Inject Carbon Dioxide (CO_2) for long term storage, also known as Geologic Sequestration of CO_2	6–10 commercial wells expected to come online by 2016. (Interagency Task Force on Carbon Capture and Storage)

(Source: http://water.epa.gov/type/groundwater/uic/wells.cfm)

DISTRIBUTION OF UIC WELLS IN US EPA REGION

2010 UIC Well Inventory

Region	State	Population (,000)	Area (sq.mi)	Class I HW Wells	Class I Other Wells	Class II Wells	Class III Sites	Class III Wells	Class IV Sites	Class V Wells
6	AR	2673	53182	4	9	1093	0	0	0	281
6	LA	4469	49650	15	22	3731	17	89	0	213
6	NM	1819	109069	0	5	4585	9	10	0	1414
6	OK	3451	68164	0	6	10629	1	2	2	1928
6	TX	20852	267277	58	50	52016	79	6075	4	32594

(Source: http://water.epa.gov/type/groundwater/uic/upload/UIC-Well-Inventory_2010-2.pdf)

CURRENTLY ACTIVE UIC WELLS IN THE STATE OF NEW MEXICO

CLASS I		CLASS II			CLASS III	CLASS V
NON-HW	HW WELLS	AGI WELLS	SWDW	EOR	BRINE	MISC.
5	0	15	911	3,521	36	1,005

(Source: New Mexico Oil Conservation Division and New Mexico Environment Department)

How the Proposed Rules Protect Groundwater of the state of New Mexico

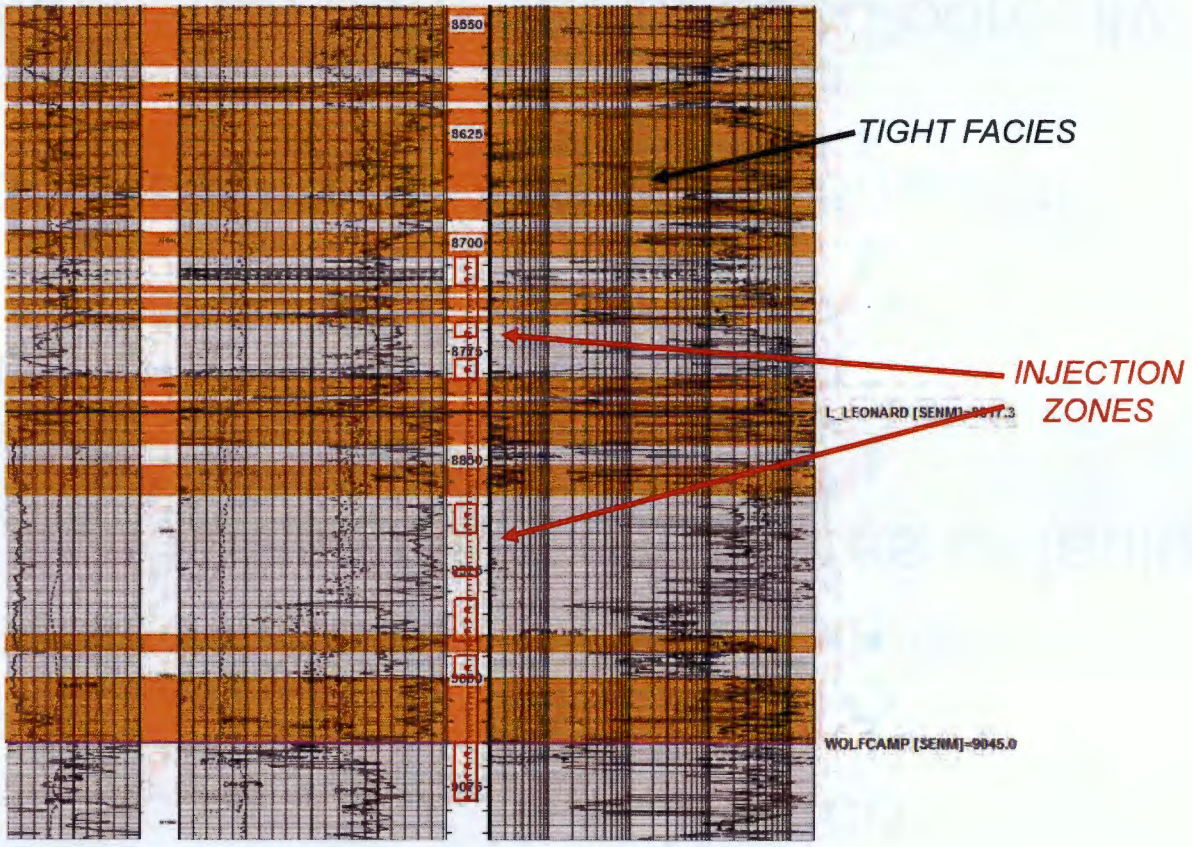
- Siting and geologic analyses
- Well design and construction
- Well operation and maintenance
- Closure, post-closure care, and financial assurance

GEOLEX® INCORPORATED

How the Proposed Rules Protect Groundwater of the state of New Mexico

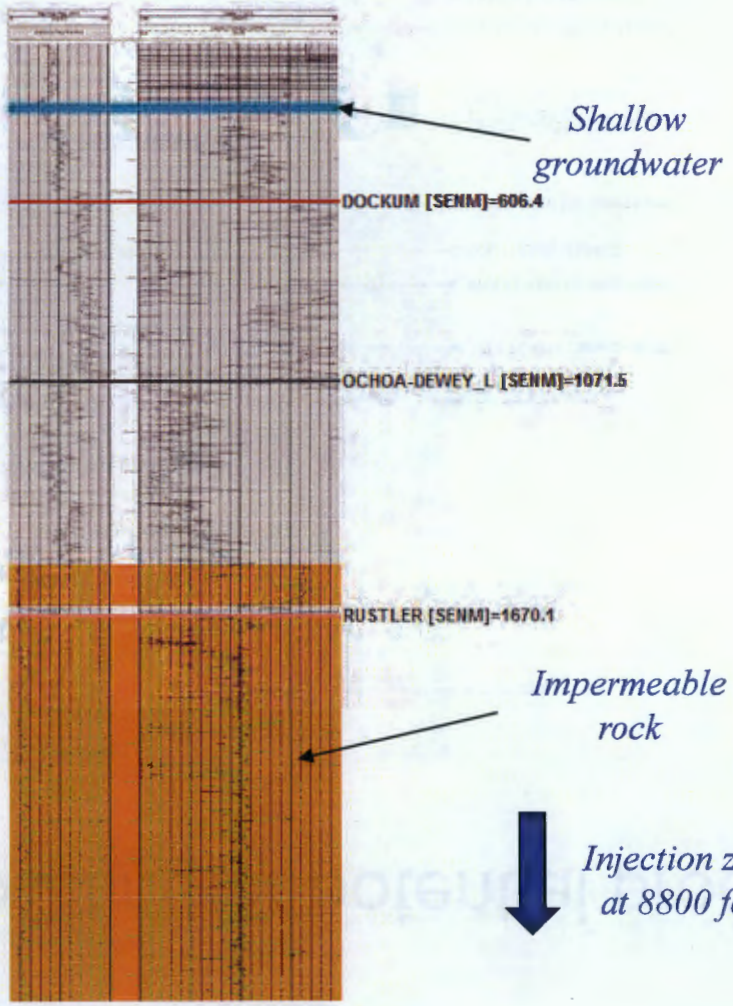
- Geologic seal to permanently contain wastes (good caprock with no transmissive fractures or faults)
- Isolated from any fresh groundwater
- No effect on existing or potential production
- Laterally extensive, permeable, good porosity
- Excess capacity for anticipated injection volumes
- Compatible fluid chemistry

- Geologic seal to permanently contain wastes (example)

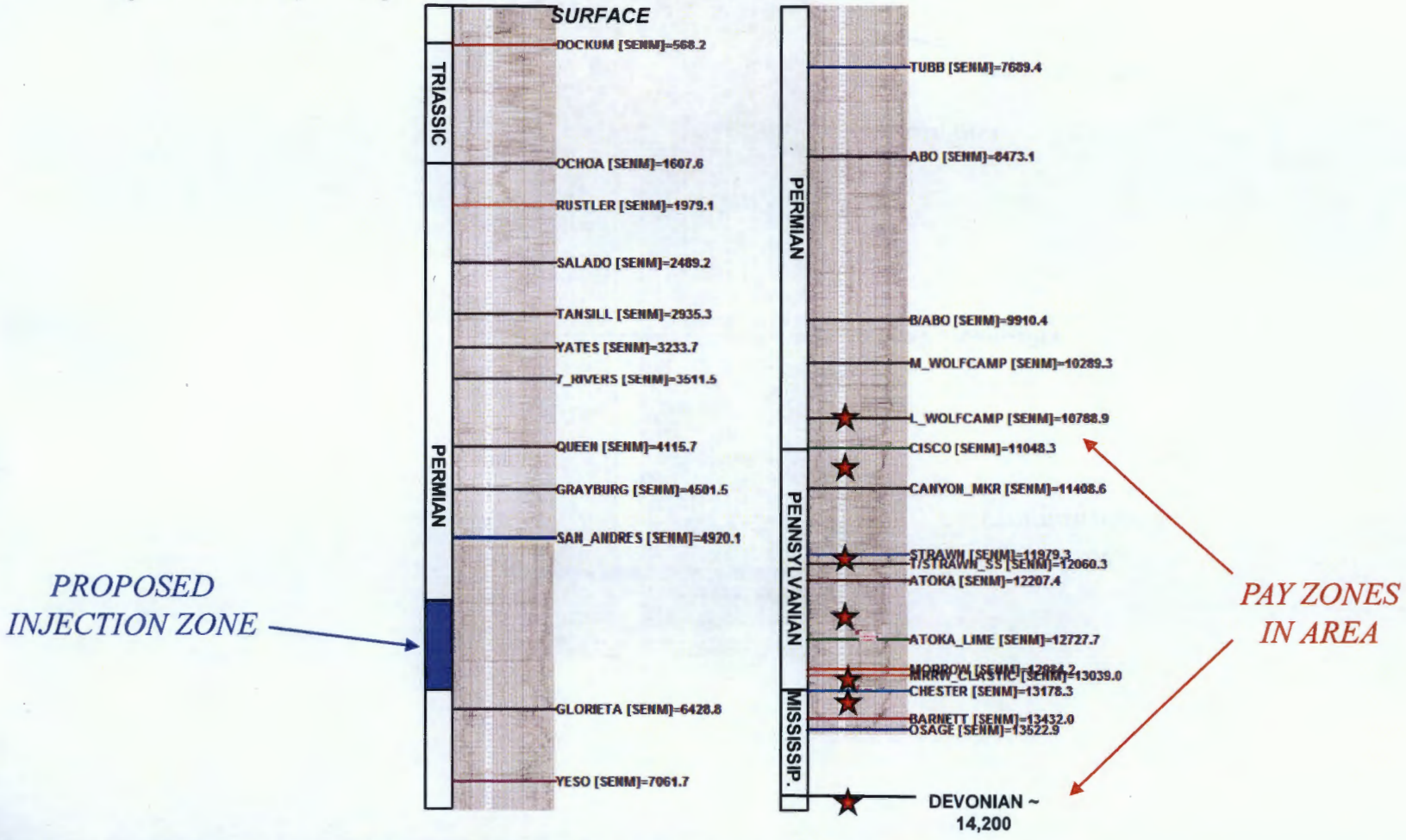


GEOLEX INCORPORATED

➢ Isolated from any fresh groundwater (example)

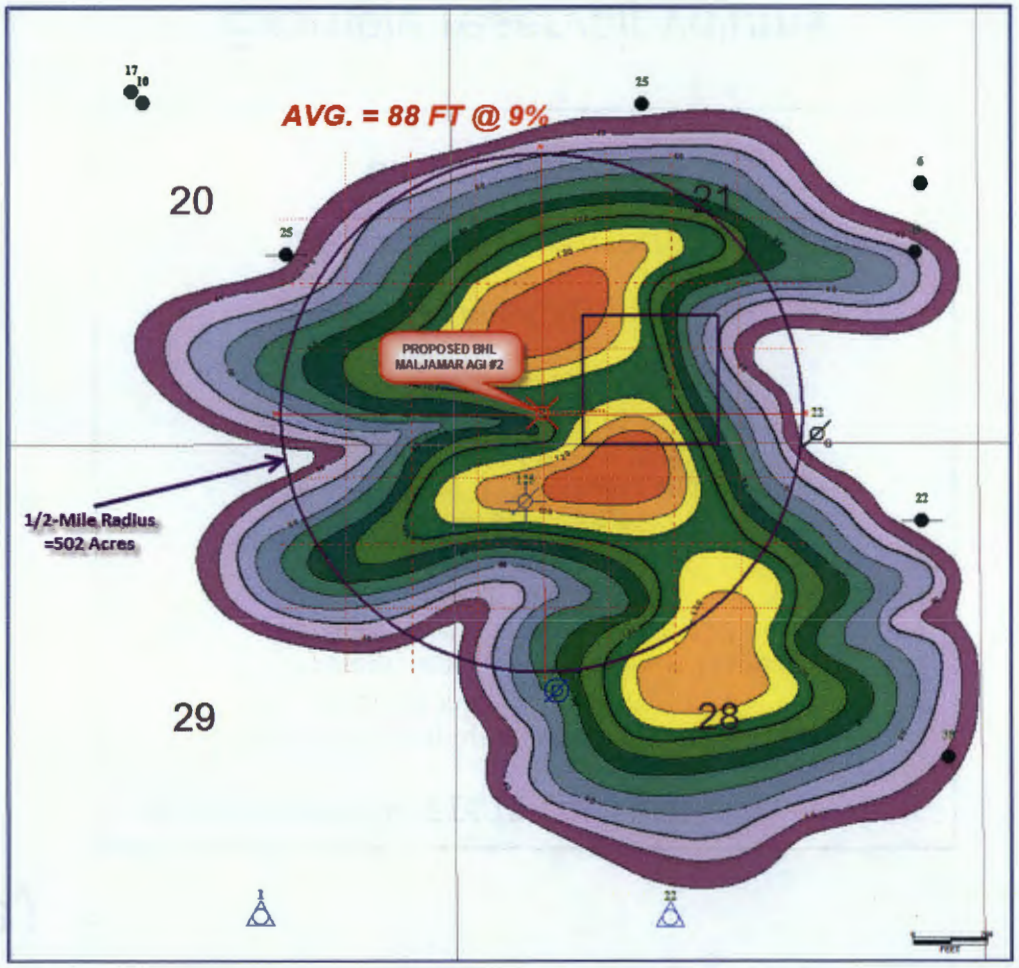


- No effect on existing or potential production (example)



GEOLEX INCORPORATED

- Laterally extensive, permeable, good porosity (example)



- Excess capacity for anticipated injection volumes (example)

RESERVOIR PARAMETERS: LOWER CHERRY CANYON

- Effective injection area (1 mile radii) = 2,318 acres
- Average interval porosity = 15.0%
- Average reservoir thickness = 111 feet
- Bottom hole temperature = 122 F
- Rw @ BHT = 0.06
- Average Rt = 3 ohm-m
- Bottom hole pressure = 2,250 psi
- $F = 1.65/Por^{1.33}$ for shaly sandstones

$F = 1.65/0.15^{1.33} = 20.6$

$Sw = F (Rw_{BHT}/Rt) = 20.6 (0.06/3) = 0.41$

$1-Sw = 0.59$

GAS IN PLACE CALCULATION:

GIP = 43,560 (Acre)(Ft) (Por) (1-Sw)
= 43560 (2318) (111) (0.15) (0.59)
GIP = 991,899,228 CFG

Example reservoir volume calculation

GEOLEX INCORPORATED

➢ Compatible fluid chemistry (example)

Table A2: Formation Fluid Analysis Cherry Canyon Formation

Extract from C-108 Application to Inject by Ray Westall
Associated with SWD-1067 - API 30-025-24676

Water analysis:

Ray Westall Federal 30 #2 **7335-45' Delaware**		**API 30-025-29069** **Located 6.34 miles from Proposed** **Agave Red Hills AGI #1**	
Sp. Gravity	**1.125 @ 74**	**Resistivity**	**.07 @ 74**
pH	**7**	**Sulfate**	**1240**
Iron	**Good/Good**	**Bicarbonate**	**2135**
Hardness	**45000**	**Chloride**	**110000**
Calcium	**12000**	**Sod Chloride**	**180950**
Magnesium	**3654**	**Sod & Pot**	**52072**

Steps Required by Proposed Rule to Identify Potentially Suitable Injection Zones

- Identify and characterize wells, stratigraphy, and geologic structure in the project area
  - Identify and characterize fresh water supply wells in the area of review
  - Identify and characterize all fresh groundwater (<10,000 tds) and establish maximum depth
  - Review structural features of region in which the proposed injection well will be drilled
  - Identify plugged wells and dry holes in area of review, and provide documentation of wellbore integrity with well diagrams
  - Describe depositional environment(s) of proposed injection interval, to determine lateral extent of injection zones and caprock to evaluate containment of injected plume

- Map structure of proposed interval to enable prediction of fluid flow and any potential influence on nearby producing zones

- Prepare cross-sections illustrating the vertical and lateral extents of proposed injection zones (IZs), porosity, and proposed injection perforations, and net porosity or reservoir fairway maps to illustrate lateral extents of IZs

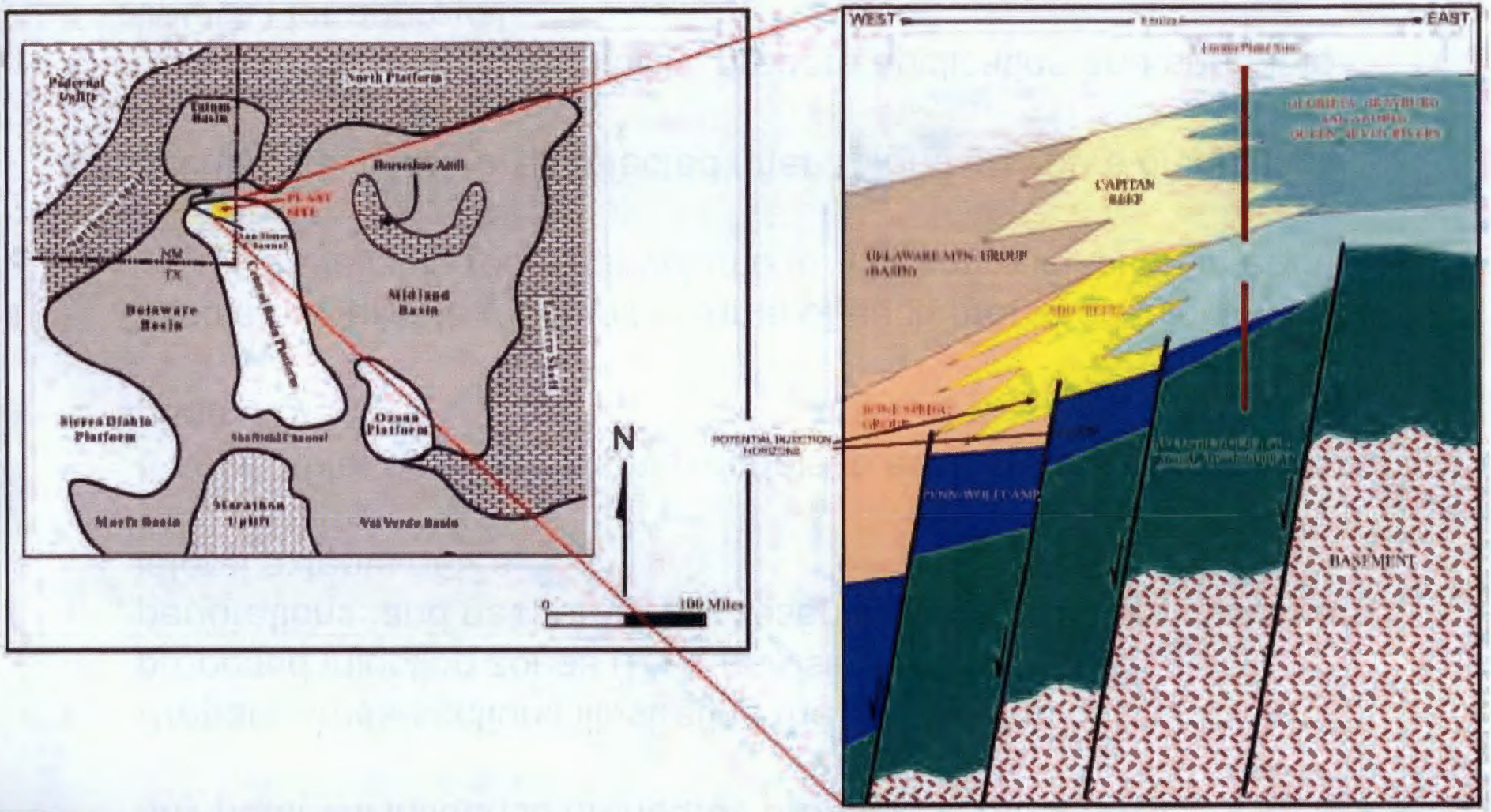
- If applicable, develop seismic models to evaluate reservoir porosity and geometry

- Calculate available reservoir volume of each proposed injection zone, and total available reservoir volume for the entire injection interval

- Calculate reservoir area affected after 15 and 30 years of injection

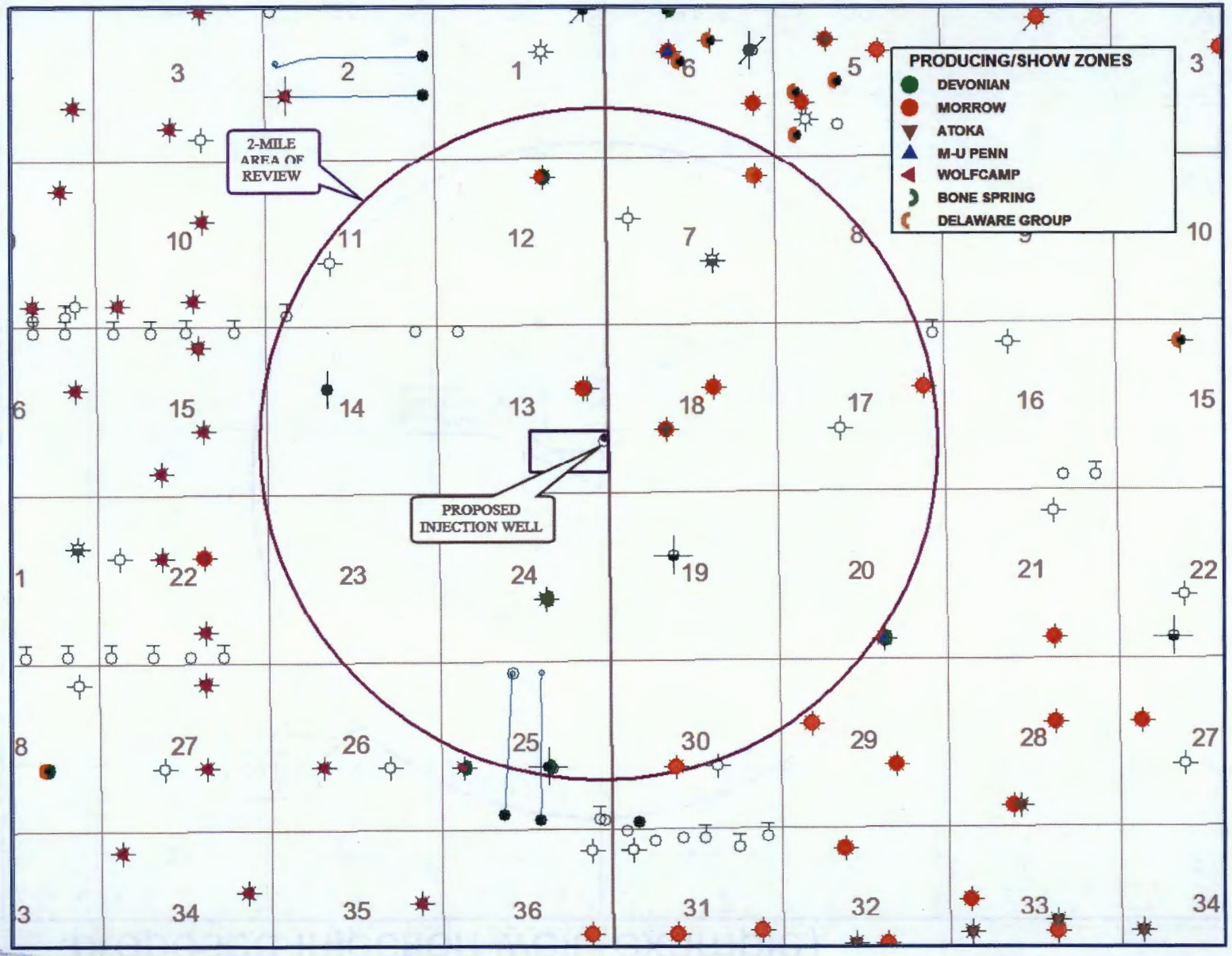
- If evaluation confirms feasibility, prepare application and submit to NMOCD for approval

- Review structural features of region in which the proposed injection well will be drilled (example)

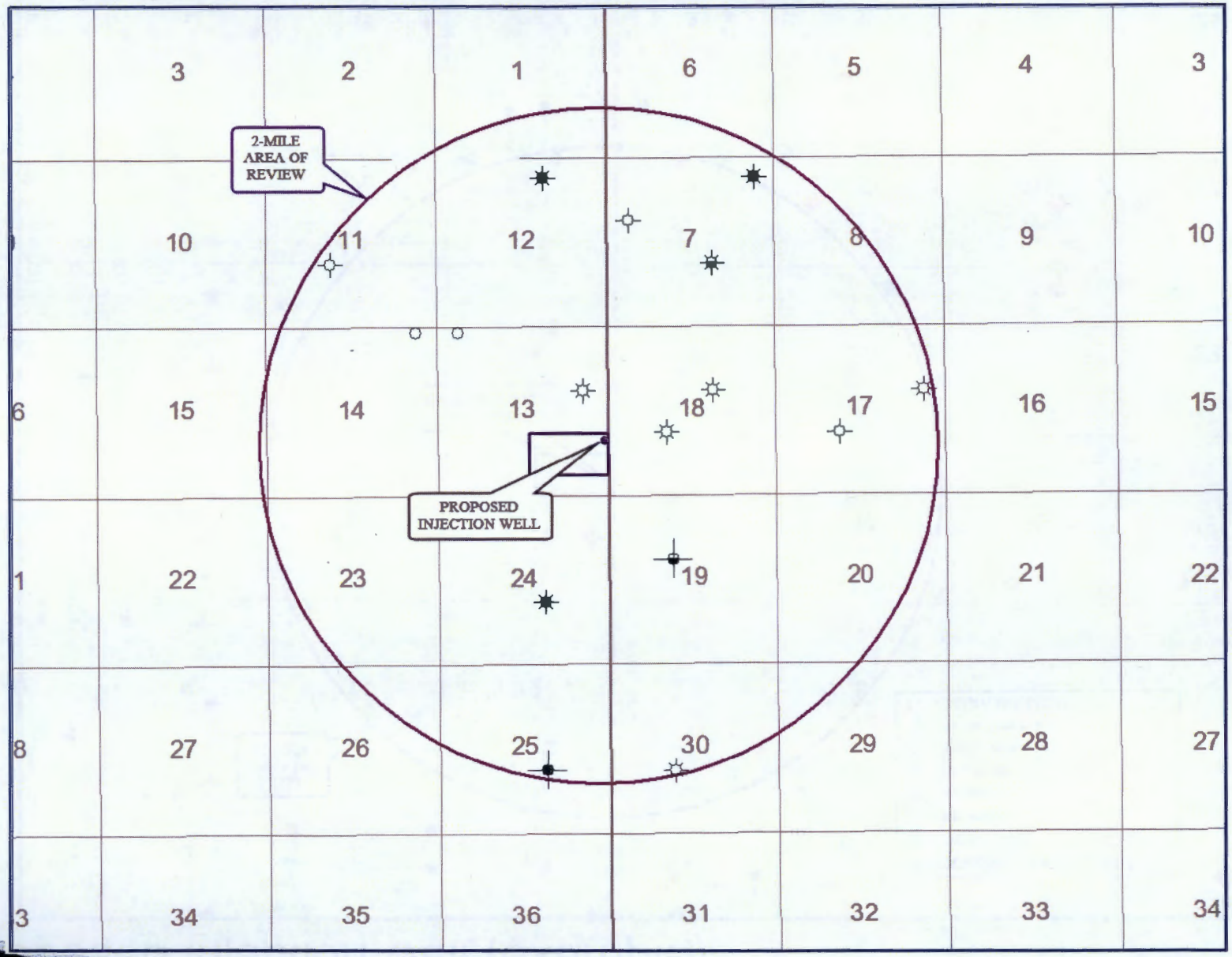


GEOLEX INCORPORATED

- Identify producing zones within the area of review ofthe proposed injection well (example)



- Distribution of wells that penetrate through the proposed injection well (example)



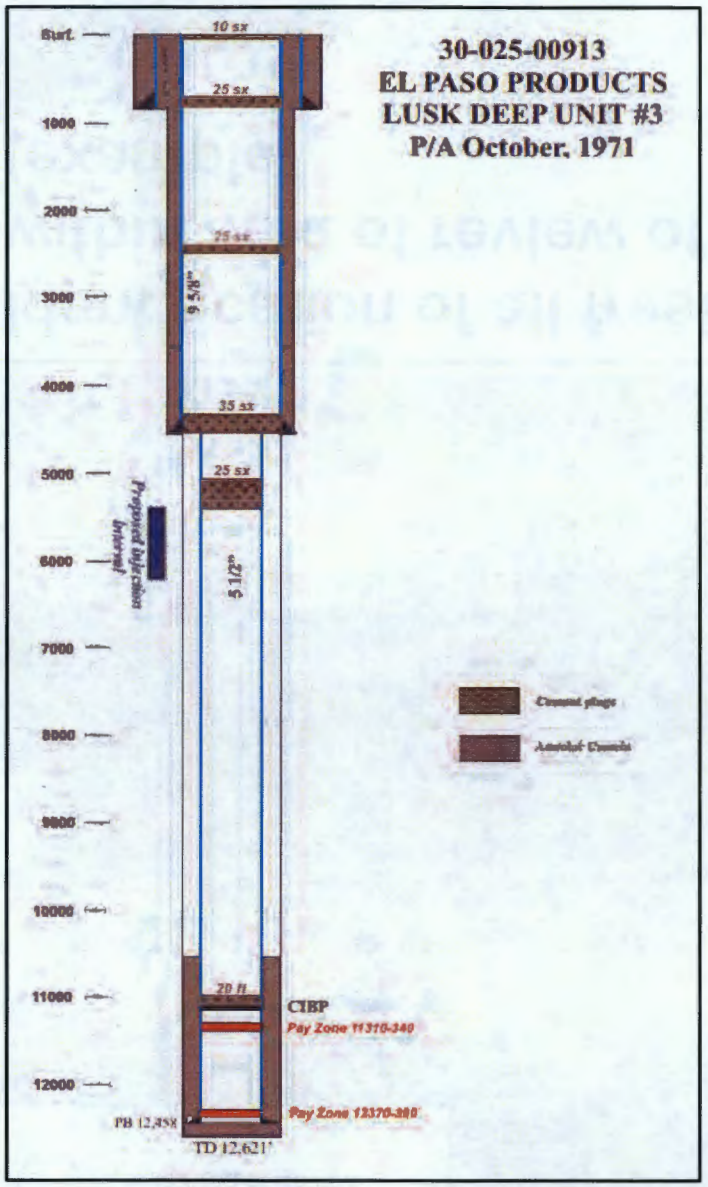
GEOLEX INCORPORATED

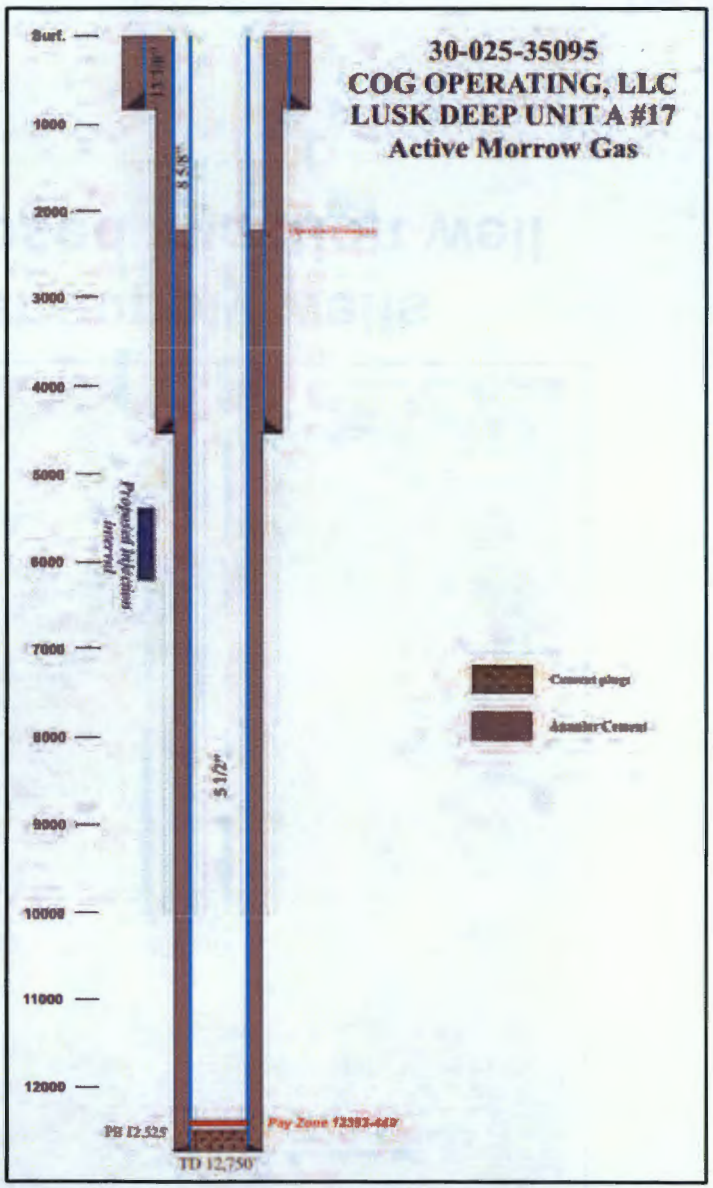
- Tabulation of all wells, showing well status and producing zones, and wells that penetrate the proposed injection interval (bold TDs) (example)

UWI (APINum)	Current/Last Operator	Well Name	Datum	Twp	Rge	Sec	N-S	E-W	TD*	STATUS	Prod Fm
30015057850000	TANDEM ENERGY	JONES FEDERAL #1	3552	19S	31E	24	1980 N	660 E	2635	ACT	YATES-7R
30015371850000	COG OPERATING LLC	LIBERATOR FEDERAL C #1	3617	19S	31E	13	330 N	380 E	13680	ACT	BONE SPG
30015406260000	DEVON ENERGY PROD	MIMOSA 24 FEDERAL C #1H	3563	19S	31E	24	582 N	275 W	13679	ACT	BONE SPG
30025009020000	TANDEM ENERGY	MILLER-FEDERAL #1	3553	19S	32E	19	1980N	660 W	2634	ACT	YATES-7R
30025009050000	COG OPERATING LLC	LUSK DEEP UNIT A #1	3601	19S	32E	19	660 N	660 E	12453	ACT	MORROW
30025200250000	CHISOS, LTD.	DELHI-FEDERAL #1	3546	19S	32E	30	660 N	1980 W	11400	ACT	STRAWN
30025201040000	OXY, USA	ELLIOTT-HALL #1	3567	19S	32E	30	660 N	660 E	12473	ACT	STRAWN
30025201220000	COG OPERATING LLC	LUSK DEEP UNIT #5	3566	19S	32E	19	1980 S	1980 E	12560	ACT	ATOK-MRRW
30025249740000	COG OPERATING LLC	LUSK DEEP UNIT `A` #13	3610	19S	32E	18	1980 S	1980 W	12520	ACT	BONE SPG
30025304900000	CIMAREX ENERGY COLO.	LUSK WEST DELAWARE #15	3581	19S	32E	20	330 S	1980 E	7200	ACT	YATES
30025340320000	CIMAREX ENERGY COLO.	LUSK WEST DELAWARE #6	3594	19S	32E	20	1650 N	1800 W	7165	ACT	DEL-BRUSHY
30025345730000	COG OPERATING LLC	LUSK DEEP UNIT `A` #14	3573	19S	32E	19	1650 N	990 W	12540	ACT	MORROW
30025350950000	COG OPERATING LLC	LUSK DEEP UNIT `A` #17	3580	19S	32E	20	660 S	890 W	12750	ACT	MORROW
30025352910000	COG OPERATING LLC	LUSK DEEP UNIT `A` #21	3573	19S	32E	19	660 S	1750 W	12718	ACT	MORROW
30025394410000	COG OPERATING LLC	SL DEEP FEDERAL #3	3554	19S	32E	30	990 N	1650 W	9580	ACT	BONE SPG
30025395380100	COG OPERATING LLC	SL DEEP FEDERAL #4H	3545	19S	32E	30	2310 N	660 W	10858	ACT	BONE SPG
30025398530000	CIMAREX ENERGY COLO.	SOUTHERN CALIFORNIA #16	3575	19S	32E	29	1980 N	375 W	9550	ACT	BONE SPG
30025398890100	CIMAREX ENERGY COLO.	SOUTHERN CALIFORNIA #18H	3369	19S	32E	29	1140 N	330 E	13965	ACT	BONE SPG
30025399600100	COG OPERATING LLC	CITATION X FEDERAL #1H	3641	19S	32E	8	990 S	1980 E	12983	ACT	BONE SPG
30025401540100	COG OPERATING LLC	SL EAST 30 FEDERAL #1H	3562	19S	32E	30	330 S	1670 E	13540	ACT	BONE SPG
30025402600000	COG OPERATING LLC	LUSK DEEP UNIT `A` #23H	3579	19S	32E	19	330 S	380 E	13595	ACT	BONE SPG
30025407050000	COG OPERATING LLC	LUSK DEEP UNIT A #22H	3627	19S	32E	17	330 N	1770 W	13670	ACT	BONE SPG
30025408630000	COG OPERATING LLC	LUSK DEEP UNIT A #24H	3587	19S	32E	19	330 N	660 W	13660	ACT	BONE SPG
30025009060000	TOM R. CONE	FEDERAL #1	3567	19S	32E	19	1980 N	1980 E	2715	TA	YATES-7R
30025009090000	TOM R. CONE	GULF-FEDERAL #1	3554	19S	32E	19	1980 N	1650 W	2487	TA	YATES-7R
30025009100000	TOM R. CONE	GULF-FEDERAL #2	3556	19S	32E	19	1980 N	2310 W	2500	TA	YATES-7R
30025208760000	TOM R. CONE	LUSK DEEP UNIT #10	3575	19S	32E	19	1650 N	1678 W	11300	TA	YATES-7R
30025214880000	CIMAREX ENERGY COLO.	LUSK DEL UNIT #10	3589	19S	32E	20	1980 S	1980 E	11550	TA	DEL-BRUSHY
30025208740000	CIMAREX ENERGY COLO.	LUSK DEEP UNIT `A` #7	3585	19S	32E	20	1650 S	990 W	11467	WSW	CAPITAN
30025350530000	COG OPERATING LLC	LUSK DEEP UNIT `A` #16	3595	19S	32E	18	785 S	660 W	12780	INJ	STRAWN

- Tabulation of all plugged wells and dry holes, showing wells that penetrate proposed injection zone with bold TDs (example).

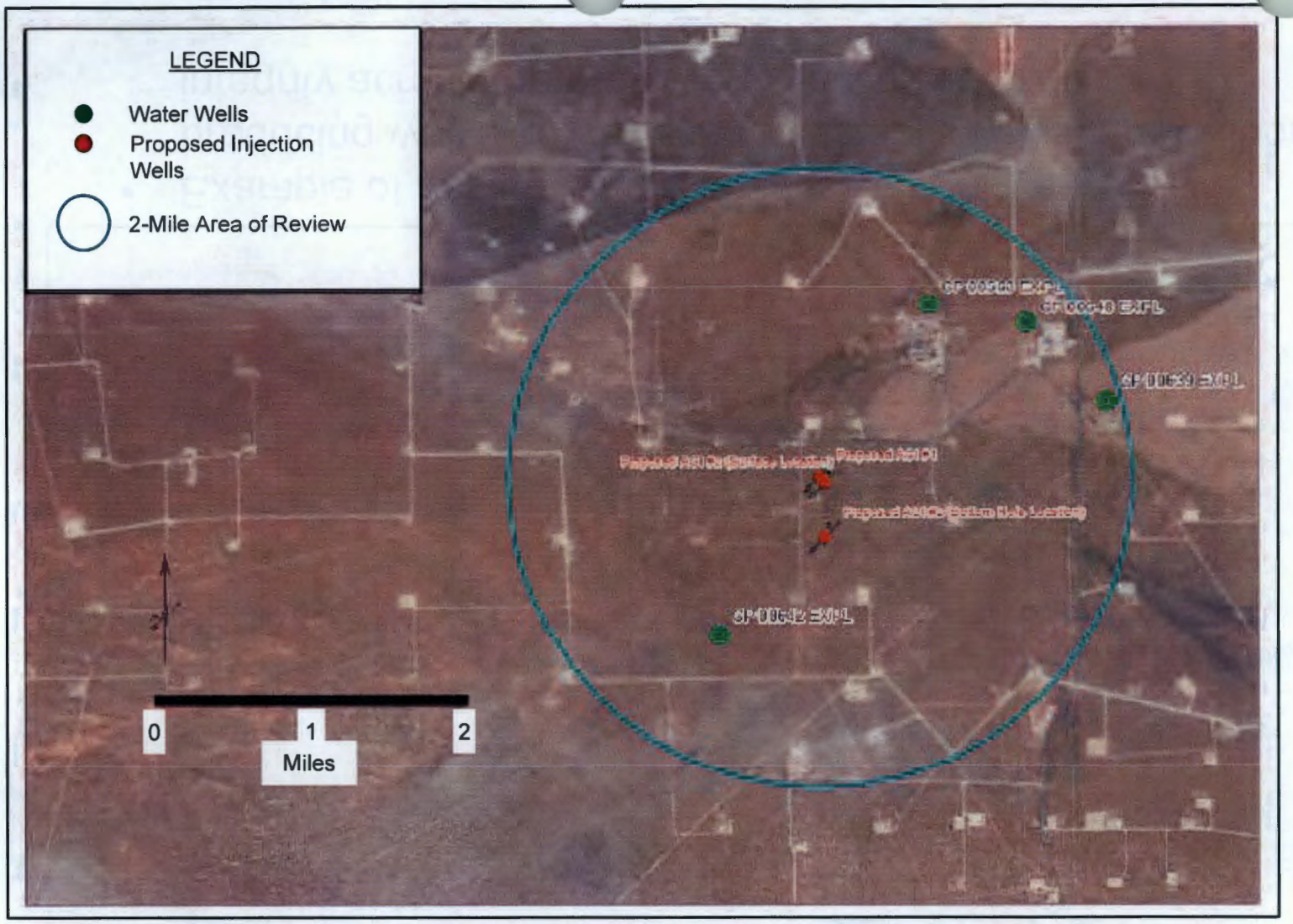
UWI (APINum)	Current/Last Operator	Well Name	Datum	Twp	Rge	Sec	N-S	E-W	TD*	STATUS	Prod Fm
30015057900000	PLAINS PRODUCTION CO	JONES #7	3548	19S	31E	24	2310 S	330 E	2876	P/A	
30025009000000	EL PASO NAT GAS CO	LUSK DEEP UNIT #2	3605	19S	32E	18	660 S	1980 E	**13974**	P/A	
30025009130000	EL PASO PRODUCTS CO	LUSK DEEP UNIT #3	3591	19S	32E	20	1650 N	660 W	**12623**	P/A	
30025081040000	SHELL OIL CO	MIDDELTON-FED A #1	3605	19S	32E	18	1980 N	990 E	**12515**	P/A	
30025201560000	EL PASO PRODUCTS CO	CALIF-FEDERAL #2	3567	19S	32E	29	990 N	990 W	**11407**	P/A	
30025202470000	EL PASO PRODUCTS CO	LUSK DEEP UNIT #6	3556	19S	32E	19	660 S	660 W	**11427**	P/A	
30025210420000	EL PASO PRODUCTS CO	LUSK DEEP UNIT-FED #11	3608	19S	32E	17	1650 S	990 W	**11470**	P/A	
30025248690000	CIMAREX ENERGY COLO.	LUSK DEL UNIT #7	3596	19S	32E	20	1660 N	2300 E	**12817**	P/A	
30025305230000	CIMAREX ENERGY COLO.	LUSK WEST DELAWARE #2	3598	19S	32E	20	330 N	1656 E	**7220**	P/A	
30025305240000	CIMAREX ENERGY COLO.	LUSK WEST DEL UNIT `A` #9	3590	19S	32E	20	2310 S	660 E	**7230**	P/A	
30025341720000	CIMAREX ENERGY COLO.	LUSK WEST DELAWARE #WI-903	3580	19S	32E	29	990 N	1880 W	**6635**	P/A	
30025341730000	CIMAREX ENERGY COLO.	LUSK WEST DELAWARE #WI-011	3591	19S	32E	20	1980 S	1980 W	**6630**	P/A	
30025352440000	COG OPERATING LLC	LUSK DEEP UNIT `A` #19	3584	19S	32E	17	660 S	1650 W	**12754**	P/A	
30025009010000	ENGLISH PAUL B	MILLER #1	3591	19S	32E	18	1980 S	660 E	4016	DRY	
30025009030000	CARPER ENGLISH&HINKL	MILLER #1	3565	19S	32E	19	660 N	660 W	2710	DRY	
30025009040000	CARPER DRLG CO	MILLER #2	3554	19S	32E	19	1980 S	1980 W	2682	DRY	
30025009070000	STOUT KELLY G	SOUTHERN CAL. FED. #2	3559	19S	32E	19	2310 S	2310 E	2736	DRY	
30025009080000	STOUT KELLY G	SOUTHERN CALIF #3	3577	19S	32E	19	990 N	2310 E	2695	DRY	
30025009110000	SIMMS & REESE OIL CO	GULF #1	3547	19S	32E	19	2310 S	990 W	2640	DRY	
30025305000000	POOL FRED DRLG INC	LUSK FEDERAL #1	3595	19S	32E	18	1980 S	1980 E	2820	DRY	





- Example of a plugged producing well (left) and active producing well diagram used to establish existing wellbore integrity across the proposed injection interval

GEOLEX INCORPORATED



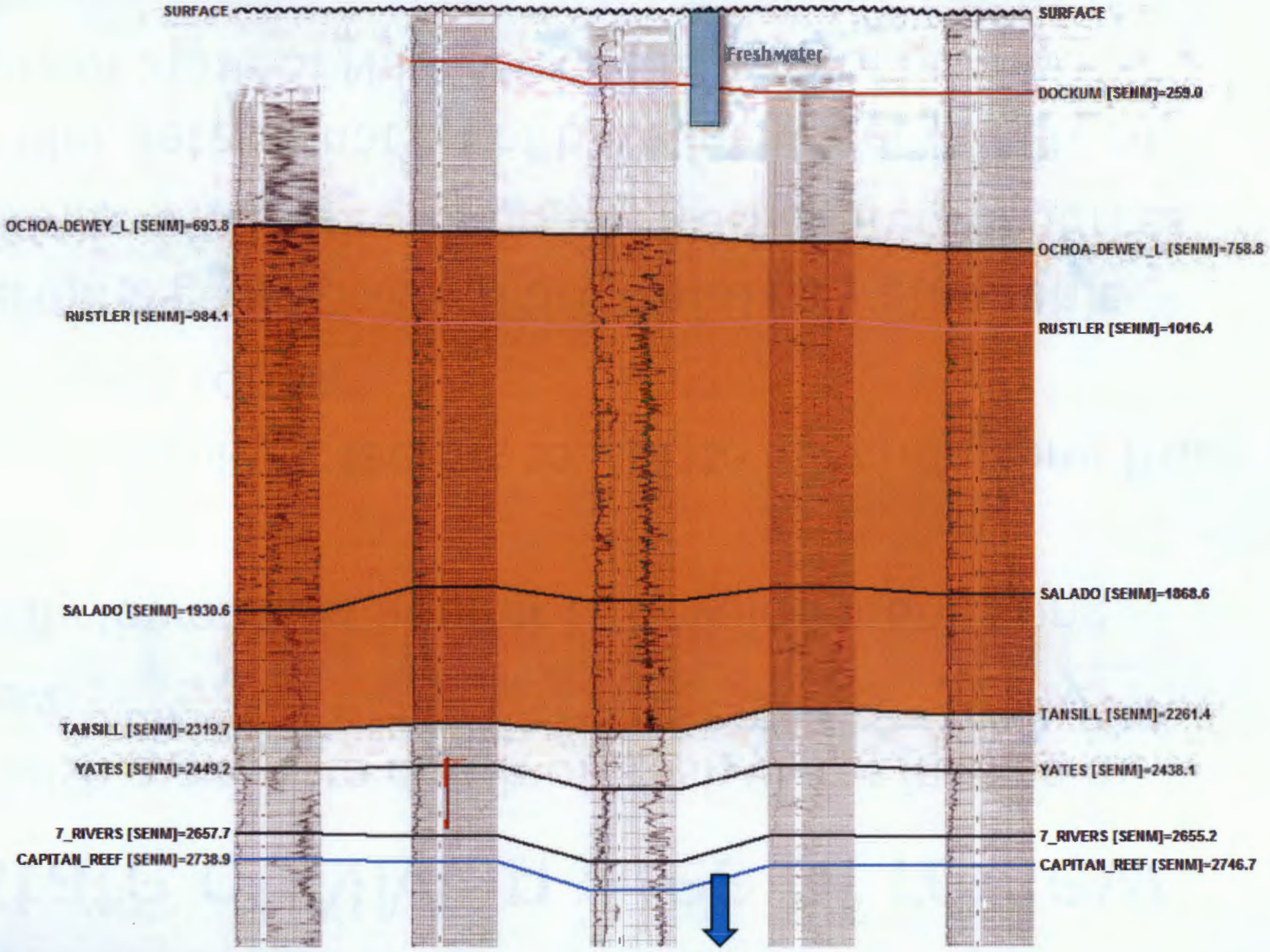
- **Identification of all fresh water supply wells within area of review of proposed injection well (example)**

GEOLEX INCORPORATED

Characterize groundwater of the state of NM in area of review

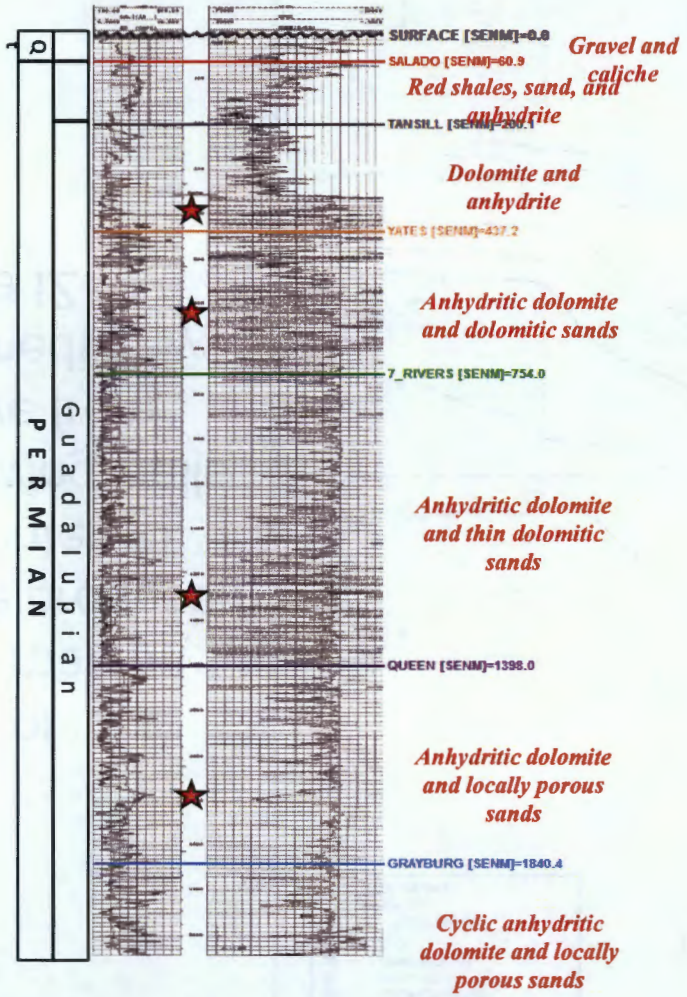
- Establish maximum depth of fresh water in area of review.
- Identify lowermost aquifer to develop monitoring system.
- Establish geologic factors to isolate injection zone from fresh water zones.
- Determine geologic conditions of the stratigraphic section to assure protection of fresh water resources
- Consider determination of baseline water quality of waters of State of New Mexico in area of review.

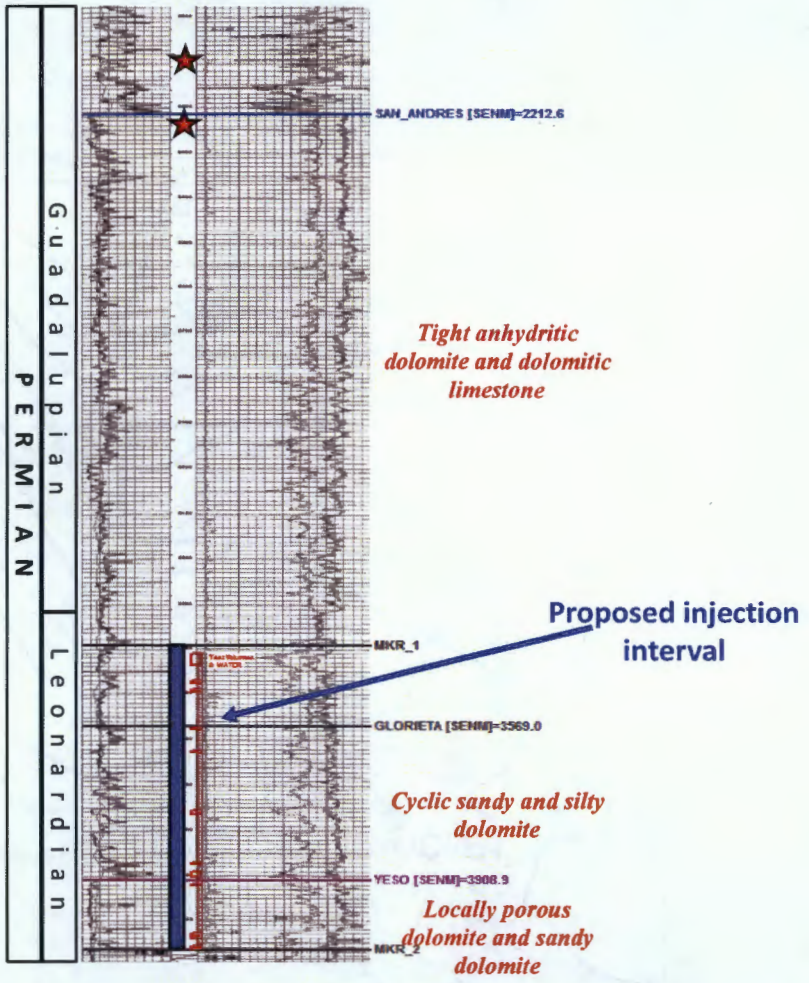
- Documentation of cap rock (brown shading) between proposed I2 (below blue arrow) and near-surface fresh-water aquifers (example)



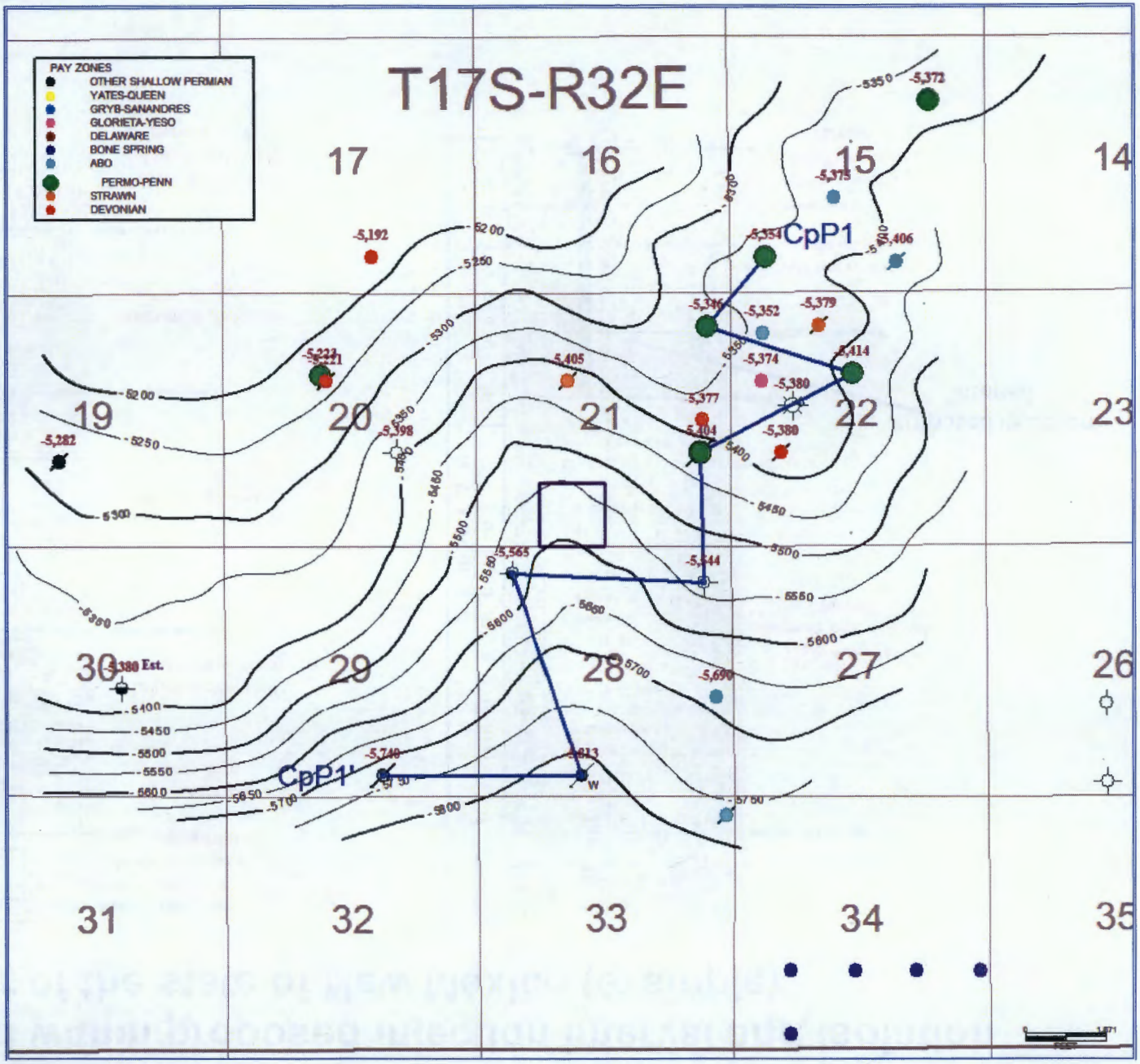
GEOLEX INCORPORATED

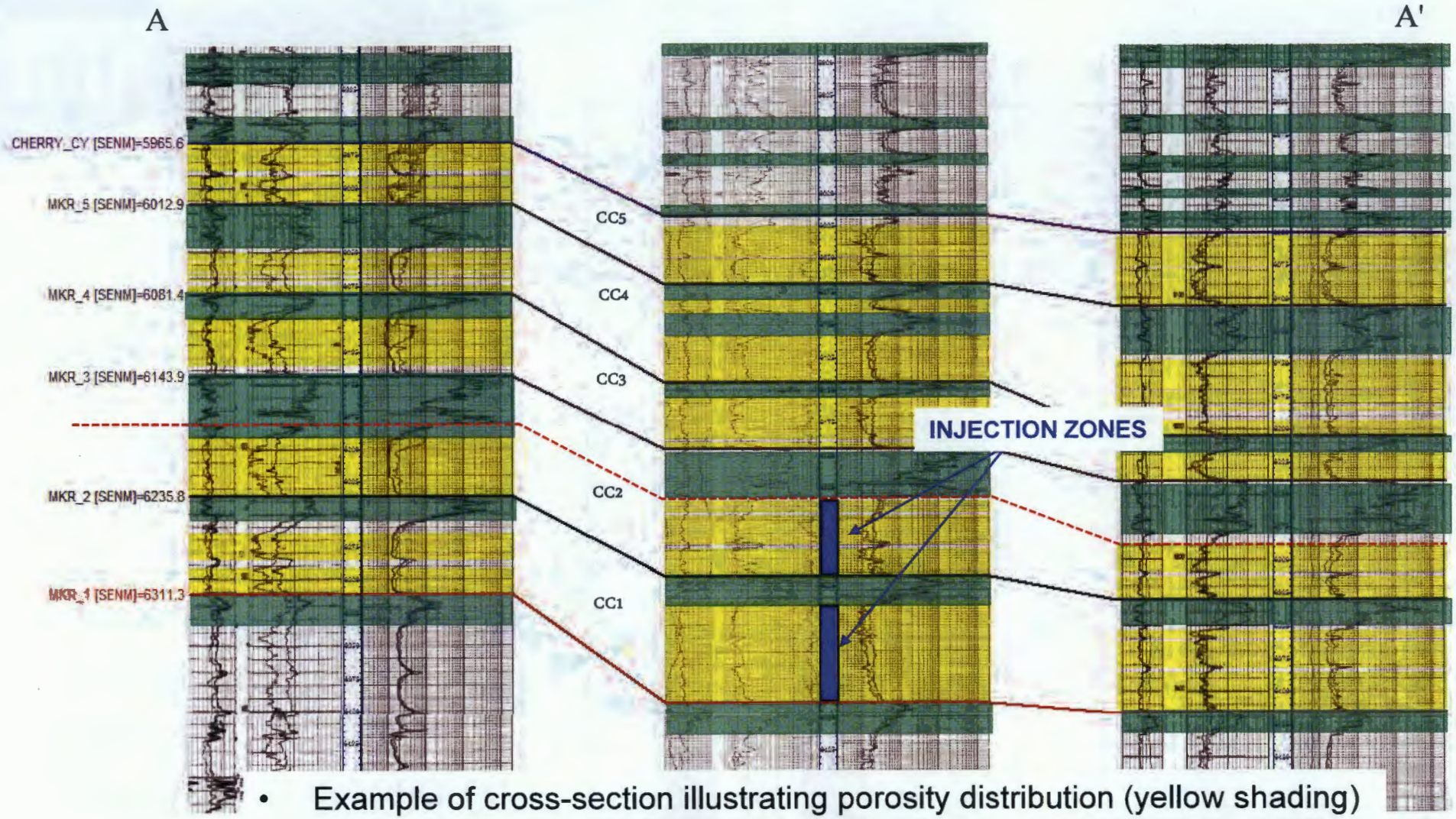
- **Identify stratigraphy, pay zones stars), and depositional environments above, below, and within proposed injection interval and isolation from groundwater of the state of New Mexico (example)**





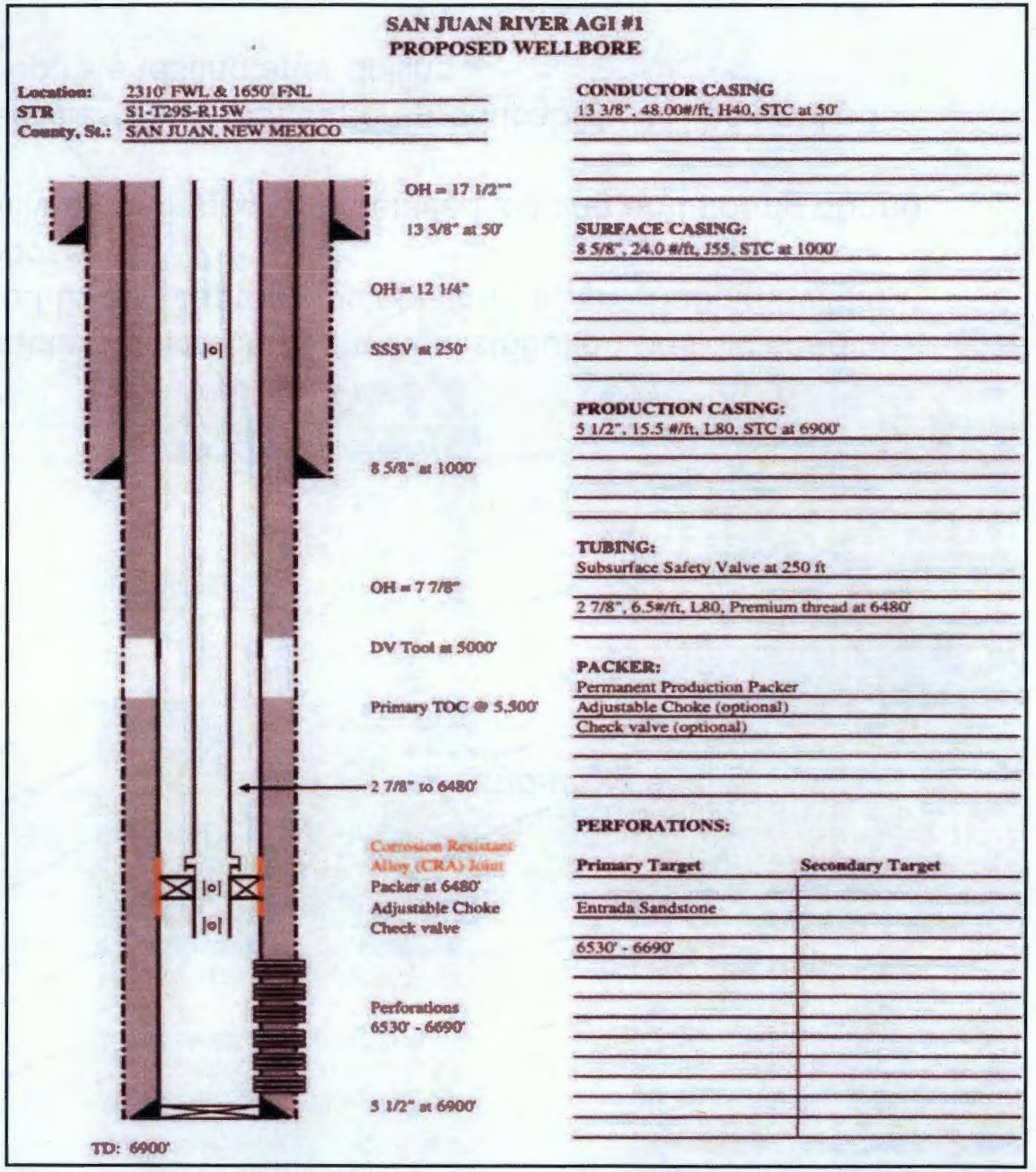
- Example of structure map on top of the proposed injection interval (IZ), showing wells productive from units immediately below the IZ.





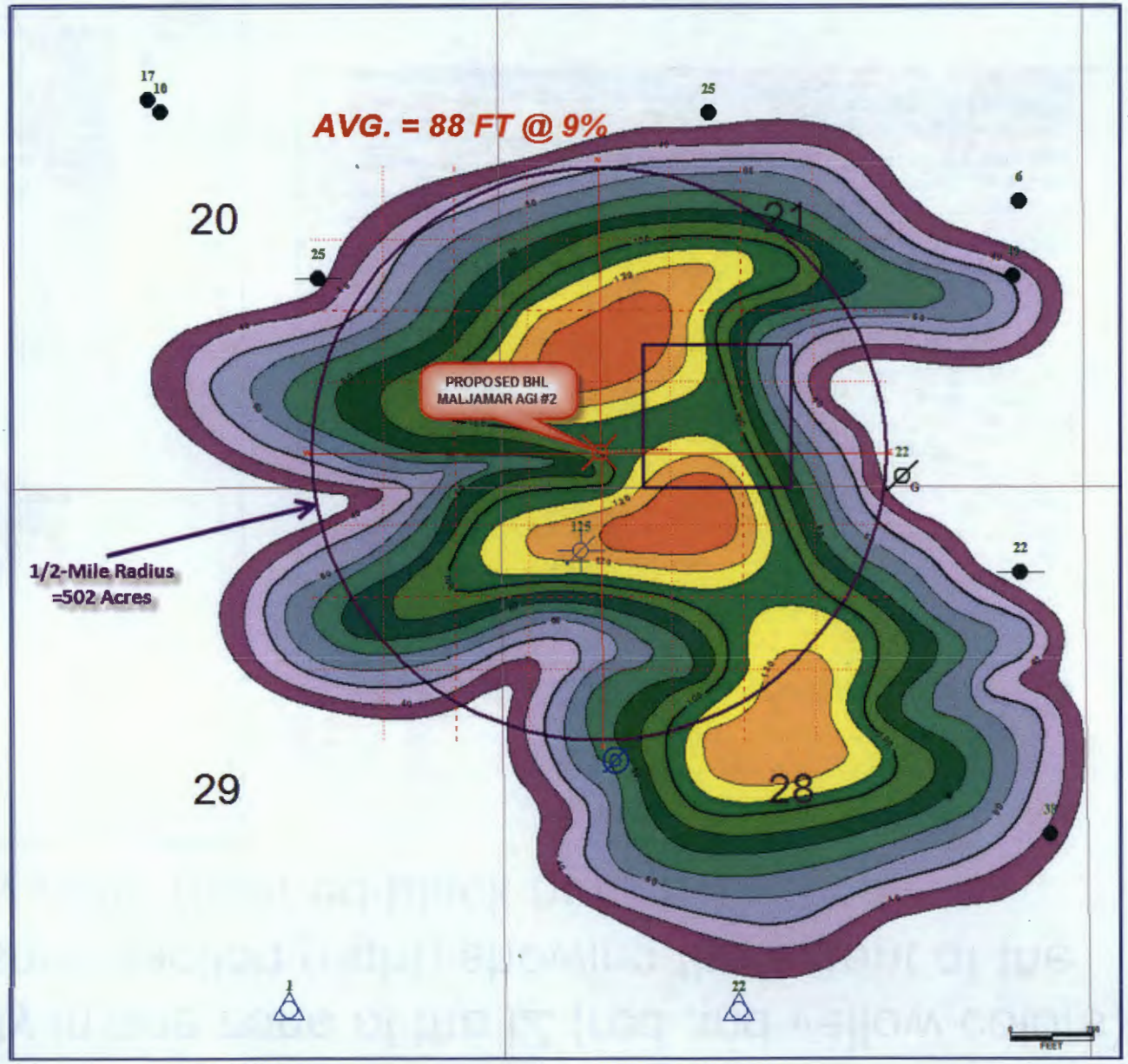
- Example of cross-section illustrating porosity distribution (yellow shading) through the proposed IZ and caprock distribution (green shading) within and around the proposed IZ
- Caprock integrity will be confirmed with detailed logging and coring during drilling
- Injection zone capabilities and proof of non-producability will be verified by swabbing and step rate testing after drilling

- Well design will optimize protection of near-surface and surface waters, and provide for protection of overlying and underlying producing zones (example)

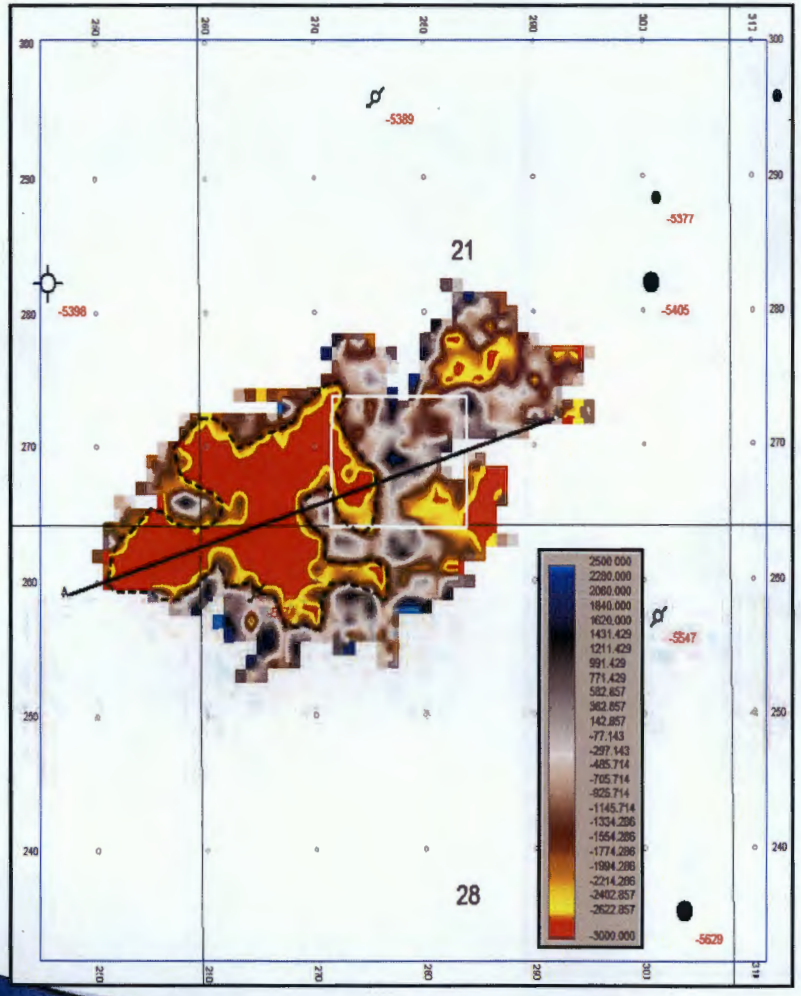


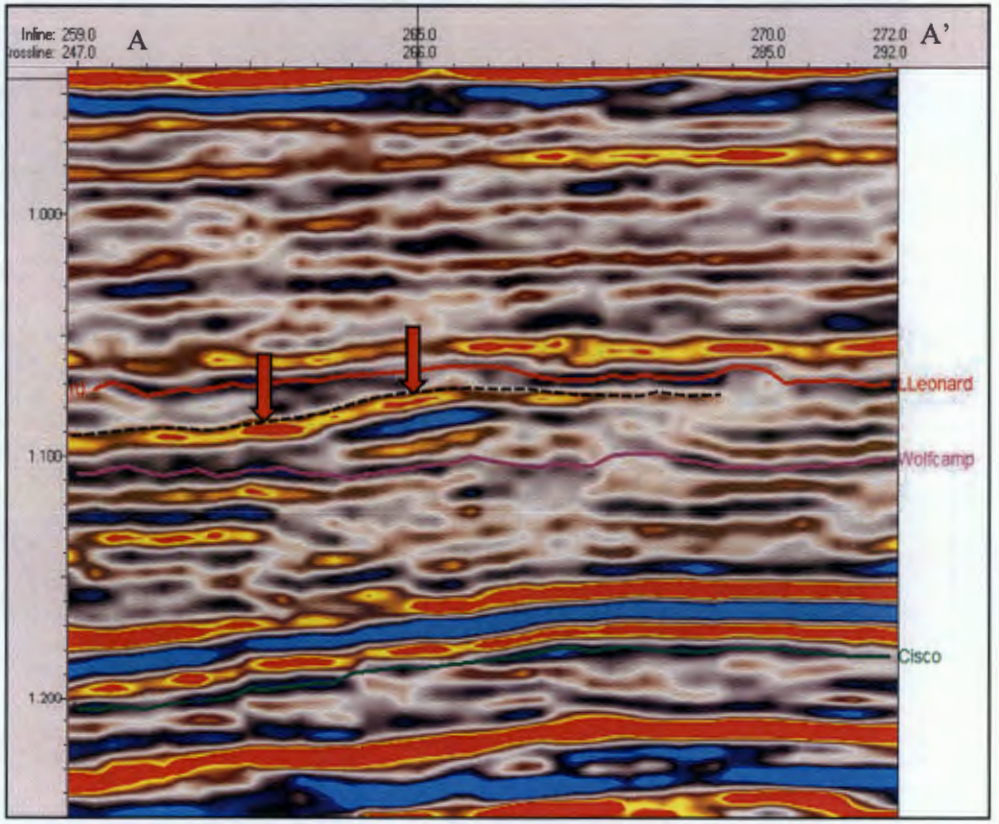
GEOLEX INCORPORATED

- Example of a net porosity map through a proposed IZ, based on subsurface control, showing average net feet and porosity percentage



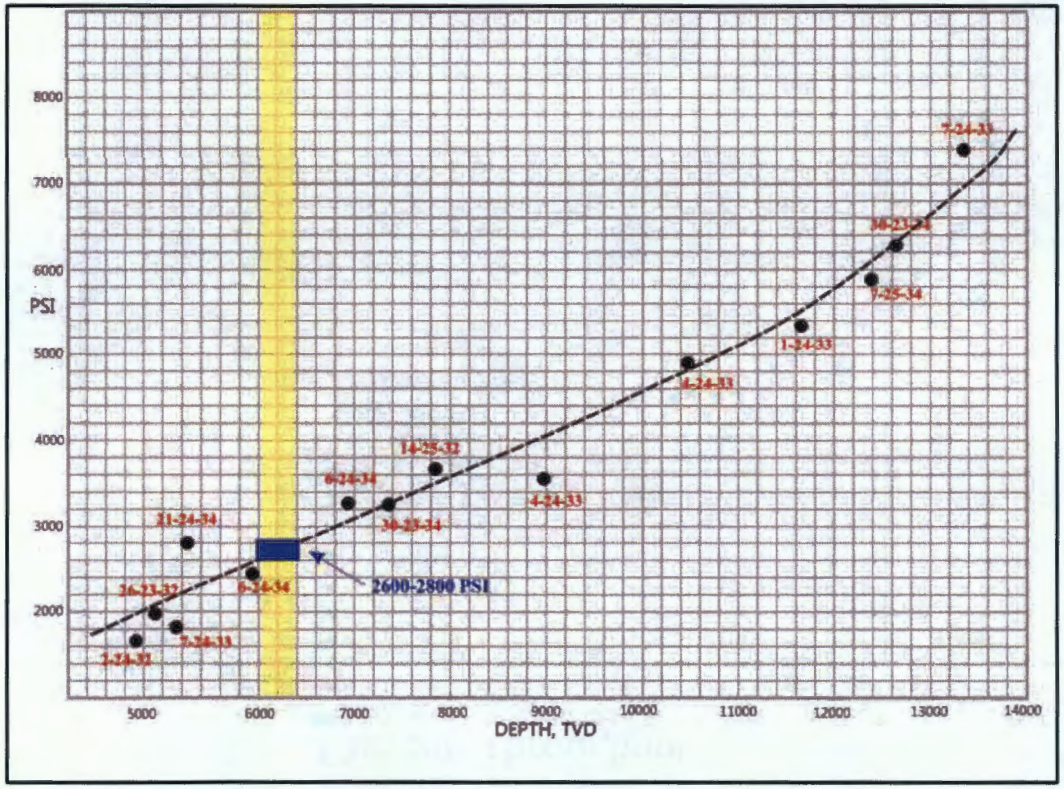
- Example of seismic amplitude slice map (left) illustrating extent of higher porosity in one zone of the IZ (red and yellow colors), and vertical seismic section (right) showing the extent of the mapped porosity zone (dashed black horizon)





GEOLEX INCORPORATED

- Example of bottom hole pressure determination using DST test data (left), and calculation of reservoir volume (in this case, for acid gas in the proposed injection zone based on geologic data (right)



RESERVOIR PARAMETERS: LOWER CHERRY CANYON

- Effective injection area (1 mile radii) = 2,318 acres
- Average interval porosity = 15.0%
- Average reservoir thickness = 111 feet
- Bottom hole temperature = 122 F
- Rw @ BHT = 0.06
- Average Rt = 3 ohm-m
- Bottom hole pressure = 2,250 psi
- $F = 1.65/Por^{1.33}$ for shaly sandstones

$F = 1.65/0.15^{1.33} = 20.6$

$Sw = F (Rw_{BHT}/Rt) = 20.6 (0.06/3) = 0.41$

$1-Sw = 0.59$

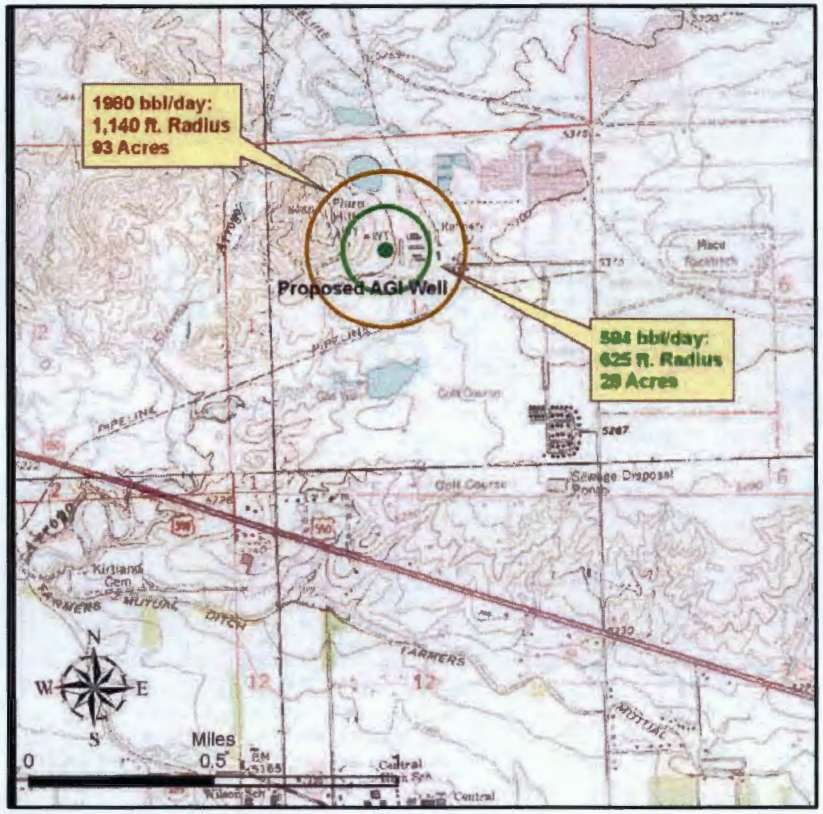
GAS IN PLACE CALCULATION:

GIP = 43,560 (Acre)(Ft) (Por) (1-Sw)
= 43560 (2318) (111) (0.15) (0.59)
GIP = 991,899,228 CFG

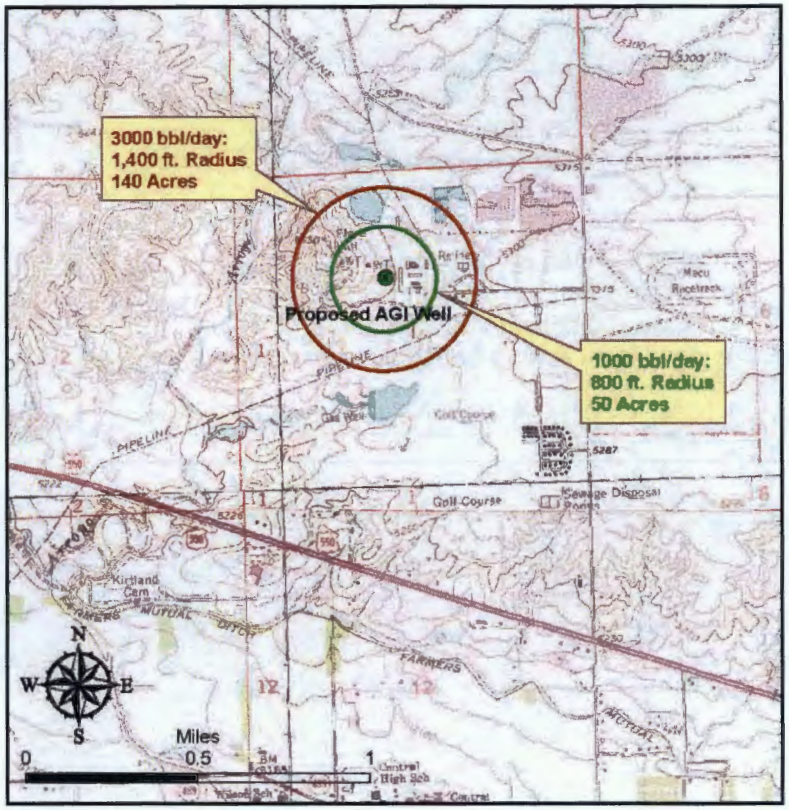
GEOLEX INCORPORATED

- Actual Area of Injection Plume Affected Over Life of Well Compared with Affected Area Safety Margin (example)

- 30-year Predicted Plume Area Based on Current Throughput



- 30-year Predicted Plume Area with Safety Margin as Shown on Figure 13 in C-108



GEOLEX INCORPORATED

• Adjacent Operators and Surface Owner Notification and Notice

- Application details the full information needed to approve the installation of an injection well
- Notice of application must be provided to all adjacent operators and surface owners within half-mile radius of proposed well via web site link
- Surface owners and operators will receive notice via certified mail, return receipt requested
- Notice shall be published in local newspapers as required by NMOCD

Summary of Well Design Factors Assuring Integrity and Safety of Injection Wells

- Well design will ensure setting of surface and, if necessary, intermediate casing in impermeable formation below lowest potable water source. Often includes multiple casing and cement intervals to isolate fresh groundwater.

- Production casing set within surface casing and cemented to surface constructed with materials which will assure the integrity of the base of the production casing exposed to waste stream in injection zone below the packer.

- Cement bond logs will assure casing seal to formations.

- Appropriate compatible tubing will be inside the production casing and stabbed into compatible packer with annular space filled with inert corrosion-inhibited fluid and monitored for pressure to indicate potential tubing leak before it can affect production casing.

- Similar designs have been implemented successfully without any leakage problems at similar and deeper zones in SE New Mexico, Texas and Alberta for many years including many such installations designed , permitted and completed by Geolex.

Summary of Geologic Factors Assuring Integrity and Safety of Injection Wells

- Isolation of groundwater from disposal zones by caprock with good integrity and demonstrated lack of transmissive fractures or faults.
- Separation of disposal zone and base of groundwater by thousands of feet of formations which present numerous barriers to potential escape of pressure or fluid from injection zone.
- Demonstrated knowledge of stratigraphy and good well control in area of review of injection well.

Well Design and Geologic Setting Ensures Protection of Groundwater

- Well Design
  - Groundwater protected by multiple strings of casing each cemented to surface
  - Cement in injection zone and caprock will be compatible with disposal fluids and corrosion resistant
  - Maximum depth of fresh groundwater in New Mexico typically less than 1000'
- Geologic Features
  - Injection zone significantly deeper than base of fresh water
  - Excellent quality of caprock which has been thoroughly characterized to assure no transmissive fractures or faulting which could affect overlying production or groundwater.

GEOLEX INCORPORATED

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC	**WQCC 14-15 (R)**
Navajo Refining Company, L.L.C.,	
Petitioner.	

DIRECT TESTIMONY OF

FRANCISCO SALVARREY

ON BEHALF OF

NAVAJO REFINING COMPANY, L.L.C.

June 15, 2015

Contents

1. Please state your name and business address.

My name is Francisco Salvarrey. My business address is 200 E. 4th Street, Roswell, New Mexico 88201.

2. By whom are you employed and in what capacity?

I am employed by Occam|EC Consulting Engineers, Inc. (Occam|EC) as a Project Engineer and Certified Floodplain Manager.

3. Please describe the purpose of your testimony.

The purpose of this testimony is to address the importance of groundwater resources in New Mexico, the local and regional water supply/demand conditions in southeast New Mexico, the general relationship between the City of Artesia and Navajo Refining Company, L.L.C. (Navajo Refining), the efforts by the City and its citizens and partners to plan for the future, and the impact that water conservation by the Navajo refinery may have on those plans. Occam|EC is actively engaged in assisting the City of Artesia to develop and implement its water conservation plan. The City derives all of its potable water from groundwater resources, and therefore providing its water consumers with sufficient and steady supplies requires consideration of demand, supply and conservation to provide the best value to its customers. Artesia's single largest industrial customer is the Navajo refinery, which uses approximately 44% of the potable supply delivered by the City annually. Consequently, the refinery simultaneously constitutes a major component of the City's economy and its largest water consumer. As a result, any regulatory changes that would allow the refinery to change its water usage patterns will have a profound effect on Artesia and its water management strategy.

4. Please briefly summarize your testimony and the conclusions made in it.

I conclude that, to the extent the proposed rule before the Water Quality Control Commission will allow Navajo Refinery to apply for and obtain a Class I hazardous waste injection well permit, it is my understanding that the refinery will be able to undertake significant water efficiency or conservation improvement programs that will be supportive of the future water use and efficiency goals of the City of Artesia. These programs will benefit the community economically and environmentally by improving supply reliability, extending existing water supplies and reducing waste treatment.

5. Please describe your educational background, training and work history.

I received a Bachelor of Science degree in Engineering Technology Civil Engineering Discipline, New Mexico State University, 2001. After graduating from New Mexico State University, I was hired by a consulting engineering firm in Roswell, New Mexico in 2002. I served as a lab technician for 2 years. For the next 3 years I gained experience in the design of civil site plans, utility systems, public works projects, and subdivision plats. I also prepared numerous construction contract documents and was involved in the bidding process. In 2007, I was hired by Occam|EC as an engineer intern. Since working with Occam|EC I have developed a strong background in hydraulics and hydrology and general civil engineering for a wide variety of private and public clients throughout southern New Mexico, particularly in southeastern New

Mexico. My resume is attached to this testimony as Exhibit A. My experience includes the analysis and design of water distribution systems, sanitary and storm sewer collection systems and the design and project management of hundreds of miles of highways, rural and urban roadways. I have also been involved in land development, construction management, hydrologic and hydraulic analysis, and infrastructure construction. I have recently participated in researching for and drafting the Artesia "Water Waste" Ordinance approved by the City in April 2015 as an initial component of the City's water conservation strategy.

6. What have you reviewed in preparation for your testimony?

I have reviewed the following documents in preparation for my testimony:

- Office of the State Engineer Drought Plan;
- Artesia's water use history;
- Artesia's water rights portfolio and water well information;
- Artesia Water Waste Ordinance;
- Artesia 40 year Water Plan;
- Office of the State Engineer, Water Use and Conservation Bureau's, Water Conservation Planning Guide for Public Water Suppliers;
- Albuquerque Bernalillo County Water Utility Authority and other regional water utility water conservation plans and ordinances, implementation strategies and public education programs; and
- Michael McKee's written testimony regarding Navajo Refinery's water conservation efforts.

7. How are potable groundwater resources defined in New Mexico?

In general, water is considered potable if it is fit for human consumption. Specifically, potable water is defined by its limits on toxic constituents and total dissolved solids.

New Mexico's Groundwater and Surface Water Protection regulations, which would apply to Class I hazardous waste injection wells, seek to protect all groundwater that has a total dissolved solid (TDS) concentration of 10,000 mg/L or less on the basis that it has the potential to be used for domestic or agricultural water supplies. *See, e.g.*, Section 20.6.2.5001 NMAC.

Under the State Engineer's groundwater regulations, potable water is generally defined as groundwater that is less than 2,500 feet from the surface and that contains less than 1,000 mg/L TDS. Prior to 2009, NMSA 1978, § 72-12-25 through § 72-12-28 addressed deep water, stating that non-potable water in an aquifer whose upper boundary is deeper than 2,500 feet is not subject to the State Engineer's groundwater regulations. Nonpotable water was defined by those provisions as water containing more than 1,000 mg/L TDS. No permit was required to pump water from that depth. However, notice to the State Engineer and the neighboring public was required. The State Engineer could require reporting on such pumping activities and neighboring water users could file suit in district court if the pumping impaired their water supply.

In 2009, NMSA 1978, § 72-12-25 was amended to give the State Engineer jurisdiction over non-potable water in an aquifer whose upper boundary is deeper than 2,500 feet, if the State Engineer declares a groundwater basin. Certain uses of such water, including oil and gas exploration and

production, prospecting, mining, road construction, agriculture, generation of electricity, use in an industrial process or geothermal use remain unregulated by the State Engineer. All other uses within deep basins that have been declared by the State Engineer require a permit to appropriate under the same regulations as shallow fresh water. NMSA 1978, § 72-12-1 through NMSA § 72-12-24.

8. Why are only certain groundwater resources considered potable?

The primary driver is economic. As a theoretical matter, most groundwater or surface supplies in the state can, in theory, be treated to potable water quality - at a cost. However, even so, it is significantly more expensive to produce, treat, monitor, deliver and address the disposal of the waste stream and contaminated supplies, as opposed to development in existing potable aquifers. Thus, as a practical matter, the only groundwater resources that are utilized for human consumption are those that are naturally potable or can be economically treated to become potable.

9. Why is maintaining potable groundwater supplies important for the state?

Maintaining potable groundwater supplies is critical in an arid region like New Mexico that has limited alternative fresh water supplies. Water is the common denominator of New Mexico's future and is indispensable to the quality of life of the state's residents. Water is a basic necessity of life and the foundation of all economic activity, neither of which can occur without an adequate water supply. New Mexico must actively and efficiently manage its limited water supplies to ensure both. The value of water is often discussed by economists in terms of its attributes – quantity, quality, location and availability in time. Groundwater's accessibility in location and time can provide additional economic benefits as compared to surface water.

The New Mexico Interstate Stream Commission is charged with running the State's regional water planning program within the 16 planning regions, including this one. The basic change of the regional planning process is to:

a). Quantify and qualify available water supplies from all sources – surface water and groundwater.

b). Assess current demand for water and projected future demand.

c). Identify strategies to address supply/demand imbalance, if they exist, at the regional level.

In essence, there are four primary mechanisms to balance supply with demand:

1. Learn to live within existing supplies, or limit demand greater than supply.
2. Provide for transfers between uses – such as the transfer of water rights from agricultural use to municipal and industrial (M&I) use.
3. Address the demand side of the equation through improved water conservation and efficiency.
4. Development of new sources, if they exist.

10. What impacts do droughts have on demand for groundwater?

Extended drought can impact both the supply side and the demand side. For example, reduced aquifer recharge often results in declining groundwater levels, reduced productivity of wells, and increased costs of production. On the demand side, extended drought and reduced natural precipitation necessitate increased groundwater consumption to maintain current irrigation and water use.

New Mexico is a *Prior Appropriation Doctrine* state, as are most western states. This implies that in times of shortage, water right holders with junior priorities run a higher risk of being curtailed so that senior water rights can be satisfied. In 2013, the Carlsbad Irrigation District, the senior surface water right holder on the Pecos River, invoked a priority call asking the State Engineer to curtail juniors so their water needs could be met. But for a strong monsoonal precipitation event in September 2013, the economic impact on the region could have been devastating, with some municipalities and industrial users of water unable to obtain sufficient water to meet their needs.

11. How frequently do droughts occur in New Mexico?

New Mexico, like most western states, is a naturally arid region and subject to highly variable precipitation every year. The period 2011 through 2013 represented one of the worst consecutive drought periods in the state's history since records have been kept – over 100 years. The susceptibility of the region to droughts illustrates the importance of one of the New Mexico Interstate Stream Commission's four main approaches to balancing supply and demand - **water conservation and efficiency.**

12. Is it typically feasible to treat groundwater for human use and/or consumption once it has been contaminated?

While it is theoretically and often technically possible to treat contaminated groundwater back to potable standards once it has been contaminated, feasibility is subject to many factors – availability of other sources, socio-economic conditions in the effected area, significant capital costs, increased operation and maintenance costs, etc. It is it certainly not desirable as a first choice, and in most cases it would not be economically feasible. Furthermore, most regulators will only permit contaminated groundwater to be treated sufficiently for discharge to surface water bodies, not for potable water supplies. It can be likened to the Pareto principle – the 80/20 rule: you can spend 20% of your resources working to maintain existing potable supplies through conservation, source water protection and other strategies, or 80% of your resources bringing contaminated supplies back to potable conditions. Thus, it is almost always more cost effective to design processes to avoid groundwater contamination rather than treating groundwater after contamination occurs. It is for this reason that municipalities and other water suppliers work so hard to maintain access to potable groundwater supplies that can be utilized with less expensive treatment techniques.

13. What options are available to local governments when demand for water approaches or exceeds available supply in places like Artesia?

Local governments have a number of options available when demand approaches or exceeds available supply. For example, in 2013, in the depth of a multi-year extended drought period, the city of Artesia bumped up against the limits of its water rights by producing 87% of its legal capacity from its wells. This fact caught the attention of the Council, Mayor, staff and area water users and served as the impetus for Artesia's current water conservation initiatives. Two primary options exist for the City in addressing this water demand for the future.

1. Increasing supplies through the addition of water rights – if available and affordable. Senior rights are the preferred investment garnering greater likelihood of associated "*wet water*" and supply reliability.
2. Reducing demand through water conservation and water use efficiency.

The first option is more challenging at this time. The City of Artesia currently owns 7,358 ac/ft of water rights and has a population of 11,948. For planning purposes, if the community was to increase to a population of 20,000 within the next 30 years it would need an estimated additional 2,641 ac/ft of water rights to meet demand based on current usage patterns. The estimated cost of acquiring these supplemental rights is $13.2 million in today's dollars based on research and information that the City of Artesia has provided.

Thus, the City is presently focusing on the second option, while continuing to monitor the market for supplemental water rights. Both conservation and water use efficiency are precisely what the City, in conjunction with its citizens and businesses, are pursuing. The "Waste Water" Ordinance described more fully below was passed in April 2015 and took effect immediately. Implementation activities, business outreach, and a structured public education program are in their initial stages.

14. What types of water conservation options are available for the residential and commercial sectors?

There are several water conservation options available to the residential and commercial sectors. Residents and businesses can conserve water both from indoor and outdoor uses. Indoor options include replacing older style toilets with low-flow toilets; finding, fixing and repairing any leaks, installing low water use fixtures and appliances, replacing evaporative coolers with refrigerated air conditioning systems and capturing water for other uses while waiting on hot water to appear.

Examples of outdoor conservation options include conversion to xeriscaping (landscaping and gardening that reduces or eliminates the need for irrigation), rainwater harvesting, containerizing plants, and installing low head or drip irrigation systems. Additionally, as is being addressed by the City's Water Waste ordinance, limiting outdoor irrigation to certain hours of the day, certain months of the year, and certain days per week can result in profound water savings over the course of a year.

15. What types of water conservation options are available for industrial sectors?

For industrial sectors some options would be leak detection and repair, high-efficiency fixture and appliance replacement, cooling towers, steam and boiler systems, processing equipment,

specialized non-residential surveys, audits, and process efficiency improvements. Industrial applications can often use water of lesser quality or non-potable as process water, wastewater effluent reuse as an example.

Other water conservation measures would be efficient use of gray water, effluent re-use and recycling programs including air cooling condensate, cooling tower blow down, and rainwater. Industrial facilities can also realize significant savings from the same measures available to residential and commercial users.

16. Have you participated in the development of Artesia's water conservation strategies?

Yes, I participated in the development of Artesia's water conservation strategies and am actively engaged in this program at present. The aspects that I have been involved with include researching best practices for water conservation, consumer behavior, other community's conservation planning efforts, projecting population growth and potable water demands with and without a water conservation plan in effect, and current water use patterns.

I have also assessed evapotranspiration (ET) and consumptive use of vegetation and landscaping typical to the Artesia area, which helped determine effective irrigation by hours during the day, days per week, and weeks per month throughout the year.

17. Why is developing water conservation strategies important for Artesia?

The City of Artesia, based on 2012 water usage figures, is currently using up to approximately 85% of its water right availability. Based on current projected water demands, if the City of Artesia purchases no additional water rights, demand would meet current capacity in approximately five years. This is based on the 7,358.72 acre/feet of water rights that the city currently owns.

18. What mandatory water conservation strategies has Artesia enacted?

Thus far, the City's efforts have focused on actions that can be taken by resident and commercial customers, but all water users are subject to the provisions of the Water Waste ordinance. The newly enacted ordinance implements water restrictions that apply to all customers within the City Service Area. These restrictions include:

- Requiring self-canceling or automatic shut off nozzles for any hoses.
- Establishing allowable hours for spray irrigation during the day.
- Providing drinking water to customers in restaurants only upon request.
- Mandating any leaks in the system be repaired within five (5) working days after first discovery.
- Requiring that all spray irrigation during the period April 1st thru October 31st of each calendar year must occur only between 7:00 p.m. and 11:00 a.m. This restriction does not apply to drip irrigation and low head bubblers, hand watering, or watering of containerized plants and plant stock.

19. How would voluntary adoption of water conservation measures at industrial facilities affect water availability in Artesia?

It should be apparent that water conservation across all consumer sectors in the city is necessary to meet the City's goals of a 25% reduction in water use as stated in the Water Waste ordinance. Demand side reduction in water use through conservation and efficiency improvement will have a positive economic effect on water rates. Without reductions in water use and per capita water consumption, the City's requirements to add additional supply through water rights, capital investment in infrastructure, and increased operation and maintenance costs will be borne by the rate payers.

Artesia's biggest industrial customer, Navajo Refinery, is currently purchasing 44% of the total annual water delivery. If Navajo Refinery is able to conserve up to 39% of its water usage alone, as indicated by the water conservation initiatives referenced in Michael McKee's testimony, the City of Artesia would reduce approximately 17% of its total demand (39% of 44% ~ 17%). That would be a significant contribution towards the City's overall water use reduction goals and this effort alone would improve the City's position with respect to its current water right portfolio and its system reliability "cushion" in periods of extended drought and reduced production from its wells.

20. How meaningful would a 17% reduction in the city's water consumption be from the standpoint of water reserves and resiliency?

As I mentioned above, Artesia's "Water Waste Ordinance" sets an overall goal of reducing water consumption by 25%. Navajo Refinery's 17% reduction to the City's overall water usage as illustrated above goes a long way in accomplishing that water conservation goal. In fact, if Navajo Refinery were to reduce its water consumption by 39%, the remaining 56% of Artesia's water users would only have to meet a 14% reduction to achieve the city's overall goal of 25%. This would save the City of Artesia money by not purchasing additional water rights, but more importantly promote the longer-term reliability of providing water to all the City's residents and businesses while conserving existing supply.

21. In your opinion, does the proposed rule before the WQCC provide beneficial opportunities for needed water conservation in Artesia?

Yes. As I understand it, the proposed rule would allow the Navajo Refinery to apply for a Class I hazardous waste injection well permit. Currently, as I understand it, the facility only has Class I nonhazardous waste injection wells. An appropriately developed hazardous waste injection well would allow the refinery to concentrate its wastewater discharges, meaning it could recycle and reuse wastewater in its process, with a corresponding decrease in demand for fresh water. From the calculations during the development of the "Water Waste Ordinance" it is projected that if the City's overall water conservation plan were to meet a 20% reduction in water usage, current water system capacity, including water rights, would extend for an additional 18 years. Navajo's 39% water conservation strategies almost doubles Artesia's 20% conservation calculated numbers, and, if implemented, would add another 7 years to its projected additional 18 years of current water system capacity. I am not aware of any other proposed rule or regulation that would lead to such a significant result.

Francisco Salvarrey

Francisco Salvarrey

OCCAM|EC *CONSULTING ENGINEERS, INC.*

FRANCISCO SALVARREY, P.E.

Mr. Salvarrey is a professional engineer with over 13 years of Civil Engineering experience in New Mexico. He has a strong background in drainage engineering and general civil engineering for a wide variety of private and public clients throughout the southern New Mexico, particularly in southeastern New Mexico.

EDUCATION

Bachelor of Science in Engineering Technology Civil Engineering Discipline, New Mexico State University, 2001

EXPERIENCE

Mr. Salvarrey has practiced civil engineering for over 13 years. His experience includes design and project management of hundreds of miles of highways, rural and urban roads. His experiences also includes the study and design of water distribution systems, sanitary and storm sewer collection systems. He has also been involved land development, construction management, hydrologic and hydraulic analysis, among others. He recently participated in drafting the Artesia "Water Waste" Ordinance approved by the City.

AFILIATIONS AND LICENCES

New Mexico Professional Engineer, License # 20287
New Mexico Floodplain Managers Association Certificate Number NM-14-00352

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION
1190 St. Francis Drive
P.O. Box 5469
Santa Fe, New Mexico 87502
Telephone (505) 827-2425

CONSTITUENT AGENCIES

Environment Department	**State Engineer & Interstate Stream Commission**
Game and Fish Department	**Oil Conservation Division**
Department of Agriculture	**Department of Health**
State Parks Division	**Soil and Water Conservation Commission**
Bureau of Mines and Mineral Resources	**Members-at-Large**

Meeting Minutes

New Mexico Water Quality Control Commission
Regular Meeting
July 14, 2015
9:00 a.m.
Artesia City Hall Chambers,
511 West Texas Avenue, Artesia, New Mexico 88210

MEMBERS PRESENT:

Ryan Flynn	Chair, Environment Department
Larry Dominguez	vice Chair, Department of Agriculture
Hoyt Pattison	Member-at Large
Scott Dawson	Oil Conservation Division
Tony Delfin	State Forestry Division
Matthias Sayer	Department of Game and Fish
Howard Hutchinson	Soil and Water Conservation Commission
John Longworth	Office of the State Engineer
Edward Vigil	Member-at-Large
John Waters	Member-at-Large

MEMBER ABSENT:

Jane DeRose-Bamman	Water Utility Authority
Pam Castañeda, Administrator	

OTHERS PRESENT:

Linda Vigil, Hearing Clerk	
Wade Jackson	Commission Counsel
Morris Chavez	Hearing Officer

Please see attached sign-in-sheet

The meeting was called to order by Chair Flynn at 8:57 a.m.

Item 1. **Roll Call.**
Roll was taken; a quorum was present.

Item 2. **Approval of Agenda.**

Action: Mr. Waters moved adoption of the agenda. Mr. Vigil seconded the motion. The motion passed unanimously.

Item 3. **Approval of minutes of June 9, 2015, meeting.**

Action: Mr. Dominguez moved approval of the minutes with amendment to page 2 line 59, adding to the last paragraph "hearing will be scheduled in conjunction with the regular monthly meetings". Mr. Pattison seconded. The motion passed unanimously.

Chair Flynn introduced the new Hearing Clerk, Linda Vigil and noted that a new Hearing Officer is expecting to start with the Environment Department.

Item 4. **WQCC 14-15 (R) In the Matter of Proposed Amendment to 20.6.2.3000 NMAC and 20.6.2.5000 NMAC. Public Hearing.**

Action: The hearing in WQCC 14-15 (R) was recorded and transcribed by Trattel Court Reporting. The transcript is available for review in the office of the Commission Administrator.

Public Comment was given by New Mexico Senator Carroll Leavell; Phillip Burch, Mayor of Artesia; and Trais Kliphuis, Director of the Water Protection Division of the New Mexico Environment Department.

Testimony was given on behalf of the petitioner by Robert O'Brien, Michael McKee, Robert Van Voorhees, Alberto Gutierrez and Francisco Salvarrey. Testimony was given on behalf of Energy, Minerals and Natural Resources Department (EMNRD) by Phillip Goetze.

The record was closed by the hearing officer following testimony and public comment.

Chair Flynn moved to briefly reopen the evidentiary record to confirm with the parties that the Commission had the correct version of the rule to deliberate upon. Mr. Hutchinson seconded. The Motion passed unanimously.

Chair Flynn moved to adopt the proposed rule as stated in exhibit B of the direct testimony of Mr. O'Brien that was filed by the petitioners on June 15, 2015. Mr. Dominguez seconded. Chair Flynn withdrew and amended his original motion to adopt the proposed rule as stated in exhibit B of the testimony of Mr. O'Brien filed June 15, 2015, with date references to the Code of Federal Regulations removed. Mr. Dominguez seconded. The motion passed unanimously. Chair Flynn directed the Hearing Officer to prepare an Order consistent with the

Commission's decision and asked the Energy, Minerals and Natural Resources Department to prepare the final rule and take all action necessary to effect publishing with the State Records Center.

Item 5. **Next Meeting**

Action: **August 11, 2015**

Item 6. **Adjournment**

The Chair adjourned the meeting at 2:08 p.m.

Commission Chair

State of New Mexico
House of Representatives
Santa Fé

CATHRYNN N. BROWN
R - Eddy
District 55

1814 North Guadalupe Street
Carlsbad, NM 88220
Phone: (575) 706-4420
E-mail: cath@cathrynnbrown.com

COMMITTEES:
Chair: Transportation & Public Works
Vice Chair: Rules & Order of Business
Judiciary

COPY

July 3, 2015

New Mexico Water Quality Control Commission
ATTENTON: Pam Castaneda, Commission Administrator
1190 St. Francis Drive, Room S-2102
Santa Fe, NM 87502

RE: WQCC 14-15 (R)
Proposed Amendments to the Underground Injection Control Rules, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC

Members of the Commission:

I am writing to express my support for Navajo Refining Company LLC's Second Amended Petition to amend the Underground Injection Control Rules, 20.6.2.3000 NMAC and 20.6.2.5000 NMAC, authorizing the state to issue Class I hazardous waste injection well permits for refineries.

Navajo Refining and its affiliate companies employ 850 people in southeast New Mexico, making them the largest private employer in Eddy and Lea counties. In addition, Navajo Refining processes approximately 100,000 barrels of crude oil per day, 70% of which is produced within New Mexico. The adoption of the proposed amendment will assist in Navajo Refining's continued success in southeast New Mexico in an environmentally sound manner.

The adoption of the proposed amendments will allow Navajo Refining to implement water reuse and conservation initiatives that extract chemicals from otherwise reusable waste streams and safely dispose of them underground, far below any usable groundwater. The reuse of water and the reduction of fresh water usage by Navajo Refining will make more fresh water available for use by surrounding communities and businesses.

Additionally, the proposed amendment will increase reliability in the oil and gas industry by allowing Navajo Refining to manage any unexpected increase in the concentration of chemical constituents in the wastewater stream that may exceed hazardous waste thresholds. Without a viable disposal option such as a Class I hazardous waste injection well, increased chemical constituents from crude oil waste streams can curtail crude oil throughput as Navajo Refining treats the wastewater streams before disposal. Having the flexibility to downhole inject waste

streams that exceed hazardous waste concentration thresholds will allow Navajo Refining to maintain the crude oil throughput necessary to process southeast New Mexico crude and thereby avoid adverse financial consequences to crude oil producers and the state.

This proposal to amend New Mexico's Underground Injection Control program to include hazardous waste is specific to refineries and is consistent with federal construction, operation, monitoring, closure, and financial assurance standards. I am confident that approving the proposed amendments will benefit my district and it residents by supporting economic development in an environmentally responsible manner.

Sincerely,

Cathrynn Novich Brown

Cathrynn Novich Brown
State Representative, District 55

GREATER ARTESIA CHAMBER OF COMMERCE

New Mexico Water Quality Control Commission
Artesia City Council Chambers
July 14, 2015

Members of the Commission:

This letter is written in support of the Second Amended Petition to amend certain water quality control regulations submitted by Navajo Refining Company ("Navajo").

Navajo Refining is an integral part of Artesia and its economy. With an approximate 850 employees, Navajo and its affiliate companies are the largest private employer in the city, providing jobs to locals citizens as well as recruiting employees from outside the area who contribute to the fabric of our community. In addition to the steady employment base, Navajo brings in contract work periodically, which contributes significantly to our economy. Of course, many locally owned businesses that support the refinery have developed over a number of years and can be directly linked to the positive impact Navajo makes on Artesia.

In addition to the stable, well-paying jobs, Navajo is a highly committed and active corporate citizen. Navajo continually demonstrates their concern for the community's aesthetics and citizenry. Navajo is an ardent longtime supporter of the local MainStreet program, which has invested millions of dollars into renovation and beautification of the downtown district. The effort contributes significantly to community based economic development, encouraging small business development as well as creating community appeal. Navajo was a significant contributor to the Artesia Public Library project, which now provides state-of-the-art facilities and access to learning and information. This support demonstrated the company's concern for our citizens' opportunities for self-enrichment.

ARTESIA

Navajo demonstrates concern for our environment and works diligently to be a good neighbor to the business district and residents around it. The company provides financial and volunteer support to a nature / walking trail, keeps its own facilities clean, and more. Navajo has enthusiastically partnered on a key City initiative in water conservation. Given demands from numerous industries, and a growing business community, the Artesia Chamber of Commerce supports Navajo's ongoing efforts to continually evaluate an increase in refinery throughput while incrementally reducing the amount of water used and disposed. This work is vital for our business community as we partner to broaden the scope of Artesia's industry and welcome a growing population and visitors to Southeastern New Mexico.

The Artesia Chamber of Commerce wholly supports Navajo and appreciates its concern for and contributions to the community at every level. More specifically, we support the disposal of waste water in underground injection wells that are approved by the New Mexico OCD in accordance with WQCC and EPA standards.

We, therefore, urge the approval of this Petition as submitted.

Yours truly,

Artesia Chamber of Commerce

By: Hayley Klein
Hayley Klein, Executive Director

107 N. First St.
Artesia, NM 88210
575.746.2744
800.658.6251
www.artesiachamber.com

Eddy County
Board of Commissioners

Glenn Collier
Susan Crockett
Stella Davis
Royce Pearson
James Walterscheid

Rick J. Rudometkin
Eddy County Manager

101 W. Greene St.
Suite 110
Carlsbad, NM 88220
Phone: 575-887-9511
Fax: 575-236-1061

June 30, 2015

New Mexico Water Quality Control Commission
Artesia City Council Chambers
Artesia, NM 88210

Members of the Commission:

This letter is written in support of the Second Amended Petition to amend certain water quality control regulations submitted by Navajo Refining Company ("Navajo").

Navajo is a crude oil refinery located in our county with a rated refinery capacity of 100,000 barrels of crude oil per day which results in the production of approximately 40 million barrels of refined products annually.

Navajo is the biggest private employer in Eddy County and one of the largest employers in Southeastern New Mexico. According to the Artesia Chamber of Commerce Navajo and its affiliate companies employ 850 people.

On average at least 70% of the oil processed by Navajo comes from Eddy and Lea Counties. So in addition to being a major manufacturing company, it is also a major purchaser of locally produced crude oil.

Navajo is connected to markets in New Mexico, Texas, Arizona and Mexico by pipelines emanating from its refineries in New Mexico. It is by far the largest New Mexico refinery and consequently the largest domestic producer of refined products in New Mexico which supplies refined products to New Mexico.

The refining process requires Navajo to use large volumes of water from the artesian aquifer near the plant. Waste water produced in the refining process is disposed of far below ground as is shown in the exhibits attached to the Petition.

Since 1998 Navajo has been disposing of this water into Class I injection wells permitted by the New Mexico Oil Conservation Division ("OCD"). Because of Navajo's desire to dispose of waste water in an environmentally sound manner and to use and reuse water more efficiently, it has become necessary for Navajo to seek changes in the water quality rule.

Eddy County supports the continued efforts of Navajo to continue and even increase the throughput of its refinery while incrementally reducing the amount of water used and disposed of.

Eddy County supports the disposal of waste water in underground injection wells that are approved by the New Mexico OCD in accordance with WQCC and EPA standards.

We, therefore, urge the approval of this Petition as submitted.

Yours truly,

Susan Crockett

Susan Crockett, Chairman
Eddy County Commission

Lea County Board of Commissioners
Lea County Manager
100 North Main Avenue, Suite 4
Lovington, New Mexico 88260

Lea COUNTY new mexico

Phone (575) 396-8602
Fax (575) 396-2093
sstout@leacounty.net
www.leacounty.net

Tuesday, July 7, 2015

New Mexico Water Quality Control Commission
Artesia City Council Chambers
July 14, 2015

Members of the Commission:

I write this letter in support of the Second Amended Petition to amend certain water quality control regulations submitted by Navajo Refining Company ("Navajo Refining").

Navajo Refining is a critical employer in Southeastern New Mexico. Navajo Refining's operations in Lovington are of particular importance for the Lea County Commission given the facility processes approximately 70,000 barrels of crude oil in Lea County each day, supporting not only Lea County's direct employee base, but also indirectly supporting the broader energy industry in our region as well as the local community as a whole.

Undoubtedly, the oil and gas industry is a cornerstone of the economy in Lea County, and as such, continued exploration and production provides a great benefit for the county and its residents.

Navajo Refining plays a critical role in this manner as the largest consumer of crude oil within the state of New Mexico. By processing approximately 100,000 barrels of oil daily, 70 percent of which is produced within our state, Navajo Refining provides a nearby, secure demand source for local producers to place their crude. Were this refinery not in existence, producers in this region would face longer transit and higher costs to market their products and send critical jobs and tax revenue elsewhere.

By extension, it is essential to support the refinery when efforts are made to improve the operational reliability, particularly in the name of water conservation, wherever possible. Maintaining operational reliability is essential to ensuring a steady market for crude oil produced in Lea County and in New Mexico as a whole. This petition endeavors to do just that and may assist Navajo Refining in implementing water conservation measures that could reduce the refinery's overall water consumption by as much as 39 percent while also bolstering reliability by providing a stable and secure method for disposing of waste water.

The Lea County Commission supports the disposal of waste water in underground injection wells that are approved by the New Mexico OCD in accordance with WQCC and EPA standards, and urge the approval of this Petition as submitted.

Sincerely,

Gregg Fulfer

Gregg Fulfer
District 5
Lea County Board of County Commissioners

NMOGA
NEW MEXICO OIL & GAS ASSOCIATION

P. O. Box 1864 · Santa Fe · NM · 87504-1864 · 505.982.2568 · www.nmoga.org

July 6, 2015

New Mexico Water Quality Control Commission
1190 St. Francis Drive, Suite S-2102
Santa Fe, New Mexico 87502

Re: SECOND AMEDNED PETITION TO AMEND 20.6.2.3000 AND 20.6.2.5000 NMAC (No. WQCC 14-15 (R))

Dear Commission Members:

The oil and natural gas industry is crucial to the economic and fiscal success of New Mexico. According to a recent study by the New Mexico Tax Research Institute, in fiscal year 2014, the oil and gas industry accounted for 35% of the state of New Mexico's General Fund revenues.

The member companies of the New Mexico Oil & Gas Association account for approximately 95% of all the oil and natural gas produced in New Mexico along with refiners, pipeline companies and service companies. The synergy of producers, gathering companies, processing companies, and pipeline companies has been important to keeping the industry competitive even in the face of low oil and natural gas prices.

The Navajo Refining Company ("Navajo Refining") is an important component of the overall industry in southeast New Mexico. Navajo Refining's plant in Artesia is currently refining 100,000 barrels of crude oil per day with more than 70% being New Mexico produced crude. Navajo Refining is part of a broad and diverse group of companies operating in New Mexico that forms an important integrated industry that is essential to not only southeast New Mexico but the entire state.

Navajo Refining plays a critical role in southeast New Mexico's oil and natural gas industry. The refinery is able to efficiently process sour crude oil where many competing refineries in the region can only process sweet crude. Since southeast New Mexico produces large quantities of sour crude, Navajo Refining is very important to both ongoing development and production in this part of the state. Without Navajo Refining's capability to process sour crude, many existing and potential new wells would be uneconomical and cause the industry to decline.

Navajo Refining is also a significant employer in the region and, together with its affiliate companies, employs well over 800 people with good paying jobs. These jobs are integral to the economy of southeast New Mexico and would likely be irreplaceable if ever lost.

The processes by which Navajo Refining uses and disposes of water are instrumental to the success of the refinery. The refinery uses water from the Artesian aquifer near the plant, and wastewater is currently disposed of in Class I nonhazardous injection wells. The rule changes sought by Navajo Refining provide several positive environmental benefits including improved water conservation, minimizing waste, and encouraging reuse of water within the refining process in order to reduce freshwater use.

The proposed rule changes will allow Navajo Refining to reduce refinery curtailments and as a result allow the refinery to increase throughput and reduce water use. These joint benefits will help to ensure ongoing plant efficiency that is fundamental to continued operation in the very competitive refining industry.

For the reasons stated above, the New Mexico Oil & Gas Association supports Navajo Refining's petition to amend the rules as submitted, and we encourage you to approve their petition as filed.

Sincerely,

Steve Henke
President

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION
1190 St. Francis Drive
P.O. Box 5469
Santa Fe, New Mexico 87502
Telephone (505) 827-2425

CONSTITUENT AGENCIES

Environment Department
Game and Fish Department
Department of Agriculture
State Parks Division
Bureau of Mines and Mineral Resources
State Engineer & Interstate Stream Commission
Oil Conservation Division
Department of Health
Soil and Water Conservation Commission
Members-at-Large

Meeting Minutes

New Mexico Water Quality Control Commission
Regular Meeting
July 14, 2015
9:00 a.m.
Artesia City Hall Chambers,
511 West Texas Avenue, Artesia, New Mexico 88210

MEMBERS PRESENT:

Ryan Flynn	Chair, Environment Department
Larry Dominguez	vice Chair, Department of Agriculture
Hoyt Pattison	Member-at Large
Scott Dawson	Oil Conservation Division
Tony Delfin	State Forestry Division
Matthias Sayer	Department of Game and Fish
Howard Hutchinson	Soil and Water Conservation Commission
John Longworth	Office of the State Engineer
Edward Vigil	Member-at-Large
John Waters	Member-at-Large

MEMBER ABSENT:

Jane DeRose-Bamman	Water Utility Authority
Pam Castañeda, Administrator	

OTHERS PRESENT:

Linda Vigil, Hearing Clerk	
Wade Jackson	Commission Counsel
Morris Chavez	Hearing Officer

Please see attached sign-in-sheet

The meeting was called to order by Chair Flynn at 8:57 a.m.

Item 1. **Roll Call.**
Roll was taken; a quorum was present.

Item 2. **Approval of Agenda.**

Action: Mr. Waters moved adoption of the agenda. Mr. Vigil seconded the motion. The motion passed unanimously.

Item 3. **Approval of minutes of June 9, 2015, meeting.**

Action: Mr. Dominguez moved approval of the minutes with amendment to page 2 line 59, adding to the last paragraph "hearing will be scheduled in conjunction with the regular monthly meetings". Mr. Pattison seconded. The motion passed unanimously.

Chair Flynn introduced the new Hearing Clerk, Linda Vigil and noted that a new Hearing Officer is expecting to start with the Environment Department.

Item 4. **WQCC 14-15 (R) In the Matter of Proposed Amendment to 20.6.2.3000 NMAC and 20.6.2.5000 NMAC. Public Hearing.**

Action: The hearing in WQCC 14-15 (R) was recorded and transcribed by Trattel Court Reporting. The transcript is available for review in the office of the Commission Administrator.

Public Comment was given by New Mexico Senator Carroll Leavell; Phillip Burch, Mayor of Artesia; and Trais Kliphuis, Director of the Water Protection Division of the New Mexico Environment Department.

Testimony was given on behalf of the petitioner by Robert O'Brien, Michael McKee, Robert Van Voorhees, Alberto Gutierrez and Francisco Salvarrey. Testimony was given on behalf of Energy, Minerals and Natural Resources Department (EMNRD) by Phillip Goetze.

The record was closed by the hearing officer following testimony and public comment.

Chair Flynn moved to briefly reopen the evidentiary record to confirm with the parties that the Commission had the correct version of the rule to deliberate upon. Mr. Hutchinson seconded. The Motion passed unanimously.

Chair Flynn moved to adopt the proposed rule as stated in exhibit B of the direct testimony of Mr. O'Brien that was filed by the petitioners on June 15, 2015. Mr. Dominguez seconded. Chair Flynn withdrew and amended his original motion to adopt the proposed rule as stated in exhibit B of the testimony of Mr. O'Brien filed June 15, 2015, with date references to the Code of Federal Regulations removed. Mr. Dominguez seconded. The motion passed unanimously. Chair Flynn directed the Hearing Officer to prepare an Order consistent with the

Commission's decision and asked the Energy, Minerals and Natural Resources Department to prepare the final rule and take all action necessary to effect publishing with the State Records Center.

Item 5. **Next Meeting**

Action: **August 11, 2015**

Item 6. **Adjournment**

The Chair adjourned the meeting at 2:08 p.m.

Commission Chair

STATE OF NEW MEXICO

WATER QUALITY CONTROL COMMISSION

WQCC 14-15 (R)

IN THE MATTER OF PETITION TO AMEND 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC

Navajo Refining Company, L.L.C.,

Petitioner.

PUBLIC HEARING

TRANSCRIPT OF PROCEEDINGS

BE IT REMEMBERED that on the 14th day of July, 2015, this matter came on for hearing before MORRIS J. CHAVEZ, Hearing Officer, at the Artesia City Hall Chambers located at 511 West Texas Avenue, Artesia, New Mexico, at the hour of 9:00 a.m.

Page 2

APPEARANCES
FOR THE WATER QUALITY CONTROL COMMISSION:
RYAN FLYNN, Chair
MATTHIAS SAYER
HOYT PATTISON
EDWARD VIGIL
SCOTT DAWSON
LARRY DOMINGUEZ
JOHN WATERS
TONY DELFIN
HOWARD HUTCHINSON
JOHN LONGWORTH

WADE JACKSON, Commission Counsel
New Mexico Economic Development Department
1100 South St. Francis Drive, Suite 1060
Santa Fe, New Mexico 87505
(505)827-0241
wade.jackson@state.nm.us
THE HEARING OFFICER:
MORRIS J. CHAVEZ, ESQ.
SaucedoChavez, P.C.
100 Gold Ave., S.W., Suite 206
Albuquerque, New Mexico 87102
(505)338-3945
mc@saucedochavez.com

FOR THE PETITIONER:

SIDLEY AUSTIN, LLP
ROGER MARTELLA, ESQ.
JOEL F. VISSER, ESQ.
TIM WEBSTER, ESQ.
1501 K Street, N.W.
Washington, D.C. 20005
(202)736-8000
rmartella@sidley.com
jvisser@sidley.com
twebster@sidley.com
MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A.
PAUL T. HALAJIAN, ESQ.
500 Fourth Street, N.W., Suite 1000
Albuquerque, New Mexico 87102
(505)848-1800
paul.halajian@modrall.com
paul.halajian@modrall.com

Page 3

APPEARANCES (Continued)
FOR THE ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT:

BILL BRANCARD, General Counsel
ALLISON R. MARKS, Assistant General Counsel
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
(505)476-3210
bill.brancard@state.nm.us
allison.marks@state.nm.us

ALSO PRESENT:

Linda Vigil, Hearing Clerk

INDEX PAGE

Page 4

EXHIBITS ADMITTED

Page 5

EXHIBITS (Continued) ADMITTED

Page 6

CHAIRMAN FLYNN: So Item Number 4, turning now to the task at hand, it's WQCC 14-15. It's in the matter of the proposed amendments to 20.6.2.3000 and 20.6.2.5000 for a public hearing. Counsel, please state your names for the record.

MR. MARTELLA: Roger Martella, with Sidley Austin, for Navajo Refining.

MR. VISSER: Joel Visser, with Sidley Austin, for Navajo Refining.

MR. HALAJIAN: Paul Halajian, Modrall Sperling Law Firm, for Navajo Refining.

MR. WEBSTER: Tim Webster, also with Sidley Austin, for Navajo Refining.

CHAIRMAN FLYNN: Okay. Who else?

MR. BRANCARD: Bill Brancard, Energy, Minerals and Natural Resources Department, and with me is Allison Marks.

CHAIRMAN FLYNN: Good morning.

We did not have any other parties entering evidence, so I don't believe there's any other counsel in the room. I see the Environment Department's counsel here. But you're not going to be participating as a party; correct?

UNIDENTIFIED MALE SPEAKER: Correct.

CHAIRMAN FLYNN: So we are now on the

Page 7

record in the matter of the proposed amendments to 20.6.2.3000 and 20.6.2.5000 for public hearing.

Mr. Hearing Officer, before we take the public comment, can you just kind of apprise the Commission of what the intended plan is for the presentation of evidence today?

HEARING OFFICER CHAVEZ: Yes. Thank you, Mr. Chair.

Good morning. My name is Morris Chavez, and I've been designated by the Commission to act as Hearing Officer in this evidentiary matter which is being held to propose new rules authorizing Class I underground injection control, UIC, wells for hazardous waste, Class I hazardous waste injection wells generated by oil refineries hereinafter referred to as the Water Conservation Rule, WCR.

The rulemaking petition was filed by counsel for the Navajo Refining Company, LLC, and docketed by the administrator as WQCC 14-15 (R). This hearing will be conducted in accordance with the New Mexico Water Quality Act and the WQCC's water quality regulations and rule making guidelines.

Pursuant to those guidelines, I will conduct a hearing so as to provide a reasonable opportunity for all persons to be heard without making the hearing

Page 8

unreasonably lengthy. All testimony will be taken under oath, and all persons giving testimony will be subject to cross-examination by any other person in attendance on the subject matter of their testimony and on matters affecting their credibility. I may limit cross-examination, if necessary, to avoid harassment, intimidation or repetition of the witnesses.

This hearing is being recorded and transcribed by Trattel Court Reporting. You may obtain a copy of the transcript directly from the court reporter. Also, it will eventually become part of the public record viewable in the office of the Commission Administrator.

If you have not signed in, please do. So the sign-in sheet is in the back. And if you have a cell phone, please silence it at this time. After the parties have presented their technical testimony and conducted any cross-examination, the Commission will have the opportunity for questions, and there will be an opportunity for public comment at that time.

Once the hearing has concluded, the Commission will have an opportunity for deliberation and consideration of the proposal as publicly noticed prior to this hearing.

So at this time, Mr. Chair, if Senator

Page 9

Leavell would like to come forward with public comment.

SENATOR LEAVELL: Thank you very much. Where would you like me?

Hearing Officer CHAVEZ: Senator, if you could take that seat right over there.

SENATOR LEAVELL: Right here?

Hearing Officer CHAVEZ: Yes, sir. Senator, if you could please state your name for the record.

SENATOR LEAVELL: Thank you. My name is Carroll Leavell.

Hearing Officer CHAVEZ: Please proceed with your comment.

SENATOR LEAVELL: Okay. Thank you very much. I want to welcome everyone to Southeast New Mexico. We have warmed it up a bit for you today so you can enjoy the warmth. I appreciate the opportunity to give you a few remarks this morning.

This is my 19th year in the New Mexico State Senate representing Senate District 41. Senate District 41 is the south part of the Lea and Eddy Counties, New Mexico. I have in that district Carlsbad, Loving and Malaga, in Eddy County, and I have Lovington, Hobbs, Eunice and Jal in Lea County. I have been in Lea County since 1964, and it's a pleasure to serve the people here

Page 10

of Southeast New Mexico.

Just a few remarks that I have. The economic development -- economic impact of Navajo Refinery is among the largest in Southeast New Mexico. Navajo Refinery and its affiliate companies employ approximately 850 people. These are stable, long-term jobs, and they are not significantly impacted by changing economic conditions. Whether the price of oil is $10 a barrel or $125 a barrel, it still has to be refined before it can be used.

The economic impact of the refinery on the local community is significant. Payroll for Navajo Refining and its affiliate companies in New Mexico is approximately $72 million. In addition, the refinery pays more than $4 million per year in property taxes.

Navajo Refinery is also an indirect employment benefit for the local community. The refinery typically hires between 10 -- I'm sorry -- between 100 and 150 contractors per day, even though that number can go up to as high as 1,000 during a turnaround event. A turnaround event is when they take a plant down, refurbish it and bring it back up.

The Navajo Refinery also benefits the state oil and gas producers by providing a local market for crude oil. Approximately 75 percent of the crude oil

Page 11

processed by the refinery, or 70,000 to 80,000 barrels per day, is produced in New Mexico. Having a local refinery in Southeast New Mexico ensures a steady market for local crude oil and reduces the shipping costs that would otherwise be incurred. We're competing in a world market. There's no other way to look at it.

The Navajo Refinery provides additional economic benefits by transforming crude oil into higher-valued refined products before they are exported out of state. We also supply the residents of New Mexico with a local source of refined products to meet local needs.

Let's talk a bit about water. It's hard to discuss any issue in Southeast New Mexico without discussing the water. It's a critical issue.

Southeast New Mexico is an arid region, and water availability is of a particular concern for my constituents particularly during periods of drought. Water conservation measures are of critical importance as the region seeks to grow its economy with a finite amount of groundwater and surface water available.

I understand if Navajo Refining is able to obtain a permit for a Class I hazardous waste injection well, it will be able to implement a number of water conservation measures that will involve the recycling

Page 12

and reuse of water at the refinery. I understand that these measures will concentrate the chemical constituents in the remaining wastewater and cannot be implemented unless the refinery is assured that it has safety disposal of the wastewater.

I understand that a Class I hazardous waste injection well would inject wastewater into the formations that are thousands of feet below groundwater that would be needed for human consumption or for agricultural uses.

I also understand that before injection can occur, the facility will have to demonstrate that injected fluids will not migrate into the drinking water supplies for 1,000 years.

I believe that underground injection of hazardous waste is in accordance with the best and safest methods to dispose. In my opinion, this is a win-win situation. You have the disposal made in deep wells that are not potable water and will conserve our fresh water resources.

With that, anything that we can have that will help conserve our water for future years is certainly something that should be looked at in a positive vein. I appreciate the opportunity to speak with you today, and I wish you well in your

Page 13

deliberations. Thank you very much.

CHAIRMAN FLYNN: Thank you, Senator Leavell.

HEARING OFFICER CHAVEZ: Thank you, Senator Leavell.

The petitioners may now proceed with their case.

CHAIRMAN FLYNN: Mr. Hearing Officer, I think we have another speaker.

HEARING OFFICER CHAVEZ: My apologies.

MAYOR BURCH: Mr. Chairman and Commissioners, my name is Phillip Burch. I want to thank you for the opportunity to speak today in support of Navajo Refining's petition to authorize a Class I hazardous waste injection well permit in the State of New Mexico.

As I said, my name is Phillip Burch, and I have served as the Mayor of Artesia since 2008. Prior to 2008, I was a City Council member for eight years.

Navajo Refining is a critical part of Artesia's economy. It is the largest private employer in the area, and it also is a valued corporate citizen. As the largest employer, Navajo Refining, along with their affiliate organizations, provide approximately 850 jobs to the area. These are steady, well-paying jobs.

Page 14

Navajo Refining is also – they also employ a significant number of contractors, particularly during the turnaround activities that Senator Leavell mentioned. These employees and independent contractors contribute greatly to the economy of the City of Artesia through gross receipts tax.

Navajo Refining has also been a generous member of our community most recently by supporting the construction of our new library and many other community programs.

Navajo Refining is critical to the City's water conservation efforts. Water scarcity is a real threat to Artesia and Southeastern New Mexico, and the recent drought of 2011 to 2013 pushed the City to the edge of our fresh water supply.

In response, the City of Artesia has begun a water conservation initiative to reduce water use among the residents in order to lessen the need to purchase additional water rights in a very competitive market. Specifically, the City has adopted a goal of reducing water usage and water consumption by 25 percent.

To accomplish this goal, Artesia recently enacted a water conservation ordinance designed to reduce water consumption for landscaping and other uses from residential to commercial to industrial users. We

Page 15

believe that our water ordinance is essential in achieving our water conservation goals.

At the same time, however, Artesia cannot achieve the water conservation goals without the support of Navajo Refining. The refinery uses nearly one-half of the water supply in Artesia. And as a result, the refinery will play a key part if the City is to reach its goal.

I am pleased that Navajo Refining has shared their concerns with us about water conservation and has launched their own initiative for water conservation. Navajo Refining has shared their water conservation plan with the City of Artesia, and I'm confident that with the refinery's help, we can achieve our water conservation goal of 25 percent reduction.

Current analysis shows Navajo's future water consumption could be reduced by as much as 39 percent as a result of deploying improved water treatment processes at their plant. This conservation would in turn reduce Artesia's overall water use by nearly 20 percent, placing us well along the path to achieving our own established water goal.

In addition, several of the water conservation measures identified by Navajo Refining, such as water reuse and recycling, will require the

Page 16

refinery to obtain a permit for the underground injection of hazardous wastewater. Without the additional flexibility that a hazardous waste injection well will provide, there is a risk that implementing water conservation measures could have an effect of curtailing production in some circumstances. Such an outcome would determine the consistent and stable employment benefits that the refinery provides and frustrate the goals of our water conservation plan.

Navajo Refinery is critical to both the economic health of Artesia and the City's water conservation goal. It is of the utmost importance to our local community that the refinery has the flexibility it needs to continue to operate at high-production levels. Approving the proposed regulations and allowing Navajo Refining to seek a permit for a Class I hazardous waste injection well will ensure the continued viability of the refinery and, as a result, the continued viability of our city itself.

Thank you very much. Welcome to Artesia. I hope you enjoy your stay.

CHAIRMAN FLYNN: Thank you. Mr. Mayor, on behalf of the Commission, we want to thank you for making this space available to us, and your staff was outstanding in helping us to secure the space and moving

Page 17

around the schedule to allow us to be here.

The members of the Commission have really dedicated ourselves in the past two years to making these proceedings more accessible to the general public in New Mexico, so we've made an effort to make sure that these hearings are conducted in the areas that are actually impacted by proposed regulations, as opposed to having every single hearing in Santa Fe.

I know people in Santa Fe like myself think the world revolves around Santa Fe. They call the city different for a reason. And I thank all the Commission members and really appreciate your hospitality.

MAYOR BURCH: It's certainly our pleasure.

CHAIRMAN FLYNN: Is there any other public comment this morning?

Great. Okay, let's move on, Mr. Hearing Officer.

HEARING OFFICER CHAVEZ: Thank you, Mr. Chair. We will have one more opportunity for public comment at the close of the hearing.

Petitioners, you may proceed.

OPENING STATEMENT BY MR. MARTELLA

Thank you. Mr. Chairman, Mr. Hearing Officer, members of the Commission, thank you for your

Page 18

participation today and for the honor of having the opportunity to be before you in this hearing.

Mr. Chairman, I want to thank you as well for having this hearing in Artesia, in the community that is most impacted and most likely to benefit from the proposed water conservation rule, and I would like to join you in thanking the Mayor, the Town Council and his staff for making these chambers available for this very comfortable hearing on a very hot day. So thank you for that, and thank you to the City, as well.

The focus of today's hearing is Navajo Refinery's petition to request to amend the regulations to adopt the proposed water conservation rule. As you heard already from Senator Leavell and Mayor Burch, the purpose and the goal of the water conservation rule will allow New Mexico to approve Class I hazardous underground injection control wells for oil refineries. But the rule, as you already heard, is not just about refining oil. It's to promote an even more important resource, which is, of course, water.

We're in this fortunate situation, we believe, where we have a role that furthers and pursues three incredibly important goals simultaneously: First, water conservation; second, the protection of the environment; and third, benefiting not only the

Page 19

economics of the refinery, but more importantly, the economics of the greater community here in Artesia as well. And we've heard some of that already from the Senator and from the Mayor.

These goals are not just important to Navajo Refining. These goals are important to the community as a whole to have water conservation, the strongest possible environment, and to further not only the 850 jobs at the refinery, but the bedrock role that the refinery plays in the larger economic community here in Artesia and in the broader Southeastern New Mexico oil and gas industry.

We have submitted many documents today. We know you all have thick folders in front of you in support of our petition, including a Statement of Need, summaries of the regulations, a draft of the proposed regulations and technical testimony.

Our goal with the hearing today is to help you digest some of that, to help ease the understanding of that, but we also promise to be very efficient stewards of your time, as well. We appreciate how busy everyone is, and you've all made an effort to come here, and we will do everything we can to make sure that we're presenting this information to you as efficiently as possible.

Page 20

What we want to do today is briefly complement the written materials with five witnesses. And we have on the slide presentation in front of you just a summary of who the five witnesses are. We're probably going to keep this up for most of the day in case it's helpful to reference this throughout the day.

We're going to have two witnesses talk about the need and purpose for the water conservation rule to begin with, Bob O'Brien from the Navajo Refining Company, and Michael McKee from the HollyFrontier Corporation. They're going to describe generally why this rule is important in pursuing the three purposes we've discussed.

Two of our expert witnesses are going to talk about environmental protection and how the rule furthers the second goal of environmental protection. And Bob Van Voorhees is going to talk about the legal framework for the rule in the context of environmental protection, and Alberto Gutierrez is going to talk about the technical framework for the rule in terms of environmental protection.

And then finally, our final witness, Francisco Salvarrey, is going to talk about water conservation and how the rule fits into what we've already heard about the Mayor's water conservation goals

Page 21

for the City and how adopting this rule will facilitate those goals and actually help achieve those goals.

So those are our goals for today. We're going to be efficient with your time. But I do want to just briefly orient you, if I may, please, to the rule itself and how it's pursuing the three goals that we discussed and foreshadow a little bit of the testimony you're going to hear.

So what I'd like to do is talk about the three goals we've been discussing and then briefly talk about some of the legal context and the framework for understanding the rule that we have in front of you today.

Let's talk about the first goal, which is conservation. Water conservation is the primary goal, the primary driver, of this rulemaking. The purpose of the regulations and of underground injection control Class I hazardous waste injection wells in general is to, first and foremost, protect water resources, including waters of the State of New Mexico.

This is not a proposal to regulate the discharge of pollutants into waters of the State. It's a proposal to keep hazardous substances and hazardous wastes out of groundwater.

So in turn, the proposed regulation's goal is

Page 22

to conserve groundwater supplies by limiting the amount of water that is needed by the refinery. It's just very simple math. If we can reuse more of the water, we need less water. And that makes it available to other users in the community, which is very important.

As you've already heard from the Mayor, the ultimate goal, as you're going to hear today, is to reduce the water use of the refinery by 39 percent. And for a customer that uses 44 percent of the City's water supply, that's a very significant reduction.

In terms of the City's goal of 25 percent, if we can implement these water conservation measures, we will realize 17 percent of the City's 25 percent water conservation goal.

So the primary goal here is to use less, waste minimization, and preservation of disposal capacity. But there's other benefits that come with that, including enabling flexibility to conserve significant amounts of water, opening the door to a variety of conservation and reuse options benefiting the refinery, but also protecting the community long term in terms of preserving its water resources.

If this rule could be implemented, Navajo, by our estimates, could add another seven years to the capacity of the water system in the City alone. Of

Page 23

course, the reason we're here is the consequence of using less water, as the Senator alluded to, is that when you use less water, you increase the chemical concentration in the water you are disposing of, and that's why we're here for authorization to be able to seek these permits.

The second goal we discussed was environmental. And we start with the notion that the purpose of the rule is to make sure, first and foremost, we're protecting the groundwater resources. And as you're going to hear today, this meets both the very stringent New Mexico and EPA requirements for protecting groundwater.

The proposed regulation is directly tied to the Safe Drinking Water Act and EPA's regulations authorizing the USC program. The proposals that we are going to talk about are based very specifically on EPA's own Class I hazardous waste injection well regulations, and they're at least as stringent, and we think they're more stringent, than the federal regulations in some ways. If New Mexico were to enact these regulations, you may have one of the most stringent programs in the country under this program for reasons that we'll explain.

These regulations themselves are designed to

Page 24

entomb liquid waste for at least 10,000 years. And during the 25-year history of EPA's program, there's been no example of contamination under wells that use Class I hazardous injection.

The regulations we propose will fill four primary requirements that we're going to talk about: Protecting the environment, including siting and geology, to permanently contain the waste; design and construction, to assure they don't escape; operating, to ensure inspection and integrity long term; and closure, to make sure we're using the best practices to plug and ensure financial assurance that doesn't burden the State and the community going forward. We're going to be talking about redundant systems and safety checks that are all designed to promote conservation.

I just want to share with you briefly, these are not just my views, but they're also EPA's and the State's views. EPA, for example, has said that underground injection control is the safest and most effective method for disposal of hazardous industrial waste. In their words, "Class I underground injection wells are safer than virtually all other waste disposal practices. They are effective and environmentally safe alternatives to surface disposal. And injecting waste in Class I wells is safer than burying them in

Page 25

landfills, storing them in tanks or burning the waste in incinerators."

EPA Region 6 has said, "If properly constructed and operated, injection wells are by far the best way to dispose of these waste fluids." And again, there's been no instances of contamination since the starter program in 1980.

The State has agreed, and Mr. Goetze is here today, a Senior Petroleum Geologist for the State. And he has said in his testimony that, "Approval of the rule will provide the opportunity for safe and efficient disposal of hazardous waste generated at refineries that are changing procedures or expanding operations."

I want to point out that this is not the last step, though. If the Commission were to approve the regulation, there are other steps, including Navajo Refining needing to get a permit, and also approval by the Environmental Protection Agency of the rule and of any permits, as well.

So the Commission in this step is a critical action, perhaps one of the most important, but not that it's the final step in terms of ensuring that all of these protections are in place.

The third goal we've talked about was economic. I think Senator Leavell and Mayor Burch have

Page 26

done a very eloquent job, probably better than I possibly could, talking about the impact of the refinery on the communities, so I'm not going to repeat that in the interest of time.

I think it's fair to say that the Navajo Refinery is a bedrock part of the oil and gas economy for the City in this part of the State. And the goal here is to make sure that it continues to be so and that it has the flexibility moving forward in the future to maintain this primary role of being a driver of economic employment and growth and being flexible to accommodate changing circumstances. So those are the goals we're here to pursue.

The last thing I did want to discuss is a brief orientation for the Commission to the structure and the format of the rule, because we know we do have some lengthy documents there in front of you.

So if I could turn to my next slide, I want to briefly summarize how would adopting the water conservation rule result in any changes or amendments to the regulations? This is going to be a very brief, high-level summary, and our witnesses will be prepared to answer any questions you have in detail.

There's effectively two changes to your existing regulations, and then most of the changes come

Page 27

in terms of amending new regulations. And you see the changes to the existing regulations in the first two rows there.

The first is somewhat administerial, in that currently your regulations do not allow for hazardous Class I wells. And we have proposed and red-lined the regulations, revising those regulations. In some places, we're simply striking the words that say nonhazardous or exclusions for nonhazardous, but at the end of the day, these are mostly administrative changes.

The second change to existing regulations would just be to add reporting requirements for Class I hazardous waste UIC wells. It's not necessarily changing a rule, but adding something as a subprovision section, 5101(G)(2), to add these reporting requirements.

The bulk of the regulations are new. We would propose a new part of your Administrative Code, 20.6.2.5300 to 5399. And if we look at them in kind of groups or clusters, 5300 to 5303 are your basic foundational provisions that include the definitions, fee provisions, and provisions for converting nonhazardous wells to hazardous Class I wells if someone were to pursue that route.

Section 5310 are manifest requirements. 5320

Page 28

to 5321 are financial assurance provisions. These are simply incorporated by reference from the EPA provisions.

5341 to 5344 involve the permitting requirements, what you have to include in your permit application, and what are the types of requirements the State should impose on a permit if it grants a permit. And 5351 to 5363 are the criteria effectively that promote the ongoing environmental protection of the groundwater that some of our witnesses will discuss in more detail.

So while we have a relatively thick document in front of you, we think it can be broken down into these categories.

As I mentioned, what we plan to demonstrate today is that these rules are consistent with both New Mexico and EPA regulations.

If we look at New Mexico, the Commission looks at seven factors in deciding whether to amend the regulations. We're primarily focused on the protection of groundwater with these seven factors. In the interest of time, I won't go through each individually, but I'd be happy to stop on any of them if you'd like me to.

What you're going to hear today is that the

Page 29

theme of enacting this regulation, the primary goal first and foremost, is the protection of groundwater. So we believe all these seven factors are met because, at the end of the day, we're not hindering any groundwater uses. We are only protecting groundwater uses.

If anything, we're helping existing groundwater rights because if we can use less water, that makes water available for other people to be able to use it, and it actually furthers their rights and their economic interests.

Regarding the EPA regulations, there is a separate requirement from the Environmental Protection Agency that the proposed regulations can be no less stringent from what EPA requires. And everyone here is familiar with that generally, as a matter of environmental law, that you can typically not do something less stringent than what EPA requires, but you can go further.

We are confident, and you will hear this from our expert today, that the rule is as stringent, and we believe in some ways, more stringent, than EPA regulations.

We started with the EPA regulations. That was our backbone for everything we've done here. We've

Page 30

made some word changes because we're in New Mexico and not in Washington, D.C. We made some revisions because we're dealing with New Mexico Code and not the Code of Federal Register.

And there were some areas where the State came to us and said, "We want to be more protective of the environment. We want to more protective of the State." So we proposed some areas that are more stringent than what EPA requires, but in no instance is it less stringent. At a minimum, it's as stringent.

But we have some examples here -- I won't go into detail in the interest of time, and we've summarized these in our petition -- but there's at least five or six ways that, if adopted as proposed, the New Mexico regulation will be more stringent than EPA requirements, more protective. And I think you would actually walk away with a regulation that the State could point to as being among the most stringent in the country, the most protective. And I know we're in a state where groundwater is a primary concern for protecting.

In looking at the regulation, we would ask that you look at the amended version we submitted on June 15th, 2015. We made a number of -- corrected a couple of errors in the original version, and we also

Page 31

made one substantive change.

In our original proposal, we had developed it in a way that the State would have approved no migration petitions that ultimately the refinery would have to obtain. Every other state defers to EPA on the no migration petitions, and we believe that the State would like to see the same results. And while the State would approve the permit for the facility for the underground injection well, EPA would approve the no-migration petition. And that's consistent with every other state, and that's a change we made in the June 15th version.

Just to summarize and to wrap up, these UIC regulations that form the backbone of our proposal have been in place for some 25 years. They are the most stringent, the most state-of-the-art regulations out there. They have protected groundwater all across the country. And the EPA itself has said, "The existing Class I regulatory controls are strong, adequately protective, and provide an extremely low-risk option in managing the wastewaters of concern. They've protected wells across the nation, will provide the strongest possible protections to the environment and promote the flexibility and economic growth that are the shared goals here."

I want to thank you for the opportunity to

Page 32

share this information. I'd also like to thank the State, as well. We know the State is here, as well. And we had the opportunity to work in coordination on these regulations with the State for many months, and we appreciate all their assistance. They've been the epitome of professionalism in trying to pursue a result that not only addresses the refinery's interest, but is truly in the best interest of the community and the State, as well, looking long term for a broader precedent.

So we're going to turn now to the first of our three discussions and talk about the need and the purpose for the water conservation rule. And again, our goal today is to be here to help you. So if there's anything we can do along the way, please let us know. We want to be efficient stewards of your time, but again we want to make sure to also be a resource that can answer questions that you have or address any issues that come up. Thank you very much, Mr. Chairman.

CHAIRMAN FLYNN: You May call your first witness.

MR. VISSER: Thank you. Navajo Refining calls Robert O'Brien.

HEARING OFFICER CHAVEZ: Please swear in the witness.

Page 33

ROBERT O'BRIEN
having been first duly sworn, testified as follows:
DIRECT EXAMINATION
BY MR. VISSER:

Q. Please state your name and address.

A. My name is Robert O'Brien. I go by Bob. And my business address is 501 East Main Street, Artesia, New Mexico.

Q. Thank you, Mr. O'Brien.

Can you please briefly describe your background and qualifications to testify in this matter?

A. Sure. I'm a chemical engineer with 35 years of experience in the oil and gas industry, primarily refining operations. I'm currently the vice president and refinery manager at the Navajo Refinery, and I'm responsible for the operation of the refinery. And before that, I had many years of experience with Shell Oil Company.

Q. Thank you. Did you pre-file testimony in this matter?

A. I did, yes.

MR. VISSER: I have a copy here. Can I hand this to the witness?

HEARING OFFICER CHAVEZ: Yes, you may.

Q. (By Mr. Visser) Is this a true and accurate

Page 34

copy of your testimony?
A. Yes.
Q. Do you adopt your written testimony as your testimony here today?
A. I'm sorry?
Q. Do you adopt this as your testimony today in this matter?
A. Yes.
Q. Thank you very much.
Just to kind of change gears here and talk a little bit about the refinery more broadly, can you tell us what the Navajo Refinery is and what the operations consist of?
A. Yes. Navajo Refinery actually consists of two facilities. There's a facility here in Artesia and one in Lovington, New Mexico.
The Lovington facility takes crude oil and converts it into intermediate products, and then those intermediate products come here to Artesia. In Artesia, we convert the intermediate products from Lovington. Crude oil comes here to Artesia, and we make transportation fuels and final products.
Q. Thank you. Can you just tell us a little bit about how wastewater is generated at the facility and what processes you go through to make that wastewater

Page 35

that you dispose of?
A. The wastewater falls in really three areas. One is cooling water blowdown, which is disposed of at the public-owned treatment works.
And then we have a land applied RO reject stream, which basically takes the water from -- the fresh water that comes into the refinery for use, removes the total solids from it, and we land apply that.
And finally, we have washdown, wash waters and stripped sour water streams that are treated through our wastewater treatment unit and that are disposed of in three Class I nonhaz wells.
Q. Thank you. Are any of those wastewater streams currently hazardous waste?
A. No.
Q. Could any of those wastewaters become hazardous if there were constituents that were present in higher concentrations?
A. Yes.
Q. Can you describe a little bit about how that would happen or how that could occur?
A. As I understand, the EPA has certain limits on the chemical constituents that they would call hazardous, would make it hazardous. So there are many

Page 36

of those.
Some of them that -- probably the highest one currently in our water is the selenium. But there are others also, like arsenic and barium, that are present in the water. And so if they got to a certain level, then the water could be considered hazardous.
Q. Thank you.
You have petitioned for this rulemaking change. Can you explain to the Commission why it is that Navajo Refining would like the State to adopt rules that would allow hazardous waste injection wells?
A. We have two primary reasons that we're interested in it. One is, as the Mayor mentioned and the Senator mentioned, we're in a water conservation -- we're undertaking water conservation measures that are good for the community and the refinery.
If you do the water conservation math and you use less water, the chemical constituents that come in with water and in crude oil will concentrate up in the wastewater. There's no way around that. So that's the first reason.
The second reason is, currently our three Class I nonhaz wells have a finite limit in terms of how much water we can put into them. And because of age and proximity to other wells, that injection rate has fallen

Page 37

off. So the fourth well here, this haz waste well that we're petitioning for, would allow us to continue to run the refinery the way we are running it today.
Q. Thank you. Changing gears again, we heard a little bit about the economic impact of the refinery. Can you explain how many employees the refinery has?
A. The Navajo Refinery and its affiliate companies in the area, we have 850 employees. We're the largest private employer in the area.
Q. Can you describe a few of the benefits that the refinery provides to the local community?
A. The refinery has been a major contributor to the new library that was recently constructed. We're members of the Chamber of Commerce and the Artesia Main Street Association, which is about beautification of the whole Artesia area, the downtown area. We're involved in many different local and youth programs, civic, schools. Pretty much anything happening in the community, we've been a part of.
Q. Thank you. One last question. We heard earlier in the opening statement that a few changes were proposed along with your technical testimony in the middle of June. And we attached, as well -- you attached to your testimony a revised proposal. Can you just explain briefly what some of those changes were and

Page 38

why they were made at that stage?

A. Yes. So there's basically three things that we're looking at, a couple clerical in nature and one substantive change. The first one is getting clear that the Class I nonhaz wells would be referred to as Class I wells, so that would allow the ability to have a hazardous well.

Secondly, we started with the EPA's program to put the permitting program together. We modified it for New Mexico regulations. And in that modification, we inadvertently omitted that that permitting program should be administered by the director of OCD, instead of the EPA administrator. So we want to clean that up.

Finally, the permitting program and -- so with the permitting program, we clarified that there is another piece, a no-migration petition process. Originally that was in there to be administered by OCD. After further discussions with OCD, we decided to take that out and leave that authority with the EPA administrator. That is consistent with what other states have done in the past. So that's the other change that we are proposing.

MR. VISSER: Thank you, Mr. O'Brien.

We have no further questions at this time. I'd like to move to enter into evidence Mr. O'Brien's

Page 39

direct testimony; as well as Exhibit A, which is his resume; and Exhibit B to his testimony, which is the June 15 draft of the proposed water conservation rule.

HEARING OFFICER CHAVEZ: Any objections?

MR. BRANCARD: No objections.

HEARING OFFICER CHAVEZ: Those are admitted.

(Exhibits 1, 1A and 1B were admitted.)

HEARING OFFICER CHAVEZ: Just for clarification, you will be calling your witnesses as a panel for cross-examination available to opposing counsel and the Commission; correct?

MR. VISSER: That is correct.

HEARING OFFICER CHAVEZ: Mr. Chair, is that okay with the Commission?

CHAIRMAN FLYNN: Yes.

HEARING OFFICER CHAVEZ: Proceed. You may call your next witness.

MR. MARTELLA: Thank you, Mr. Hearing Officer. We would like to call Michael McKee, please.

HEARING OFFICER CHAVEZ: One moment. Do you have copies of that testimony?

MR. VISSER: I don't have copies.

(A discussion was held off the record.)

HEARING OFFICER CHAVEZ: You may proceed.

Page 40

MR. MARTELLA: Thank you.

MICHAEL McKEE

DIRECT EXAMINATION

BY MR. MARTELLA:

Q. Please state your name and address for the record.

A. My name is Michael McKee. Our address is 2828 North Hardwood Street in Dallas, Texas.

Q. Mr. McKee, could you tell us about your background and your qualifications to be here today?

A. I've been in the refining industry for over 36 years now. I am a graduate of Cornell University with a Bachelor of Science Degree in Chemical Engineering. I've worked for several companies, HIVENSA, Anerada Hess, Sunoco, Murphy, and now HollyFrontier.

I was the refining manager in Philadelphia for the Sunoco Refinery, a 350,000-barrel refinery, for a period of four years prior to coming to HollyFrontier.

In 2011, I came to Navajo Refining here. I was the refining manager for three and a half years, served in that capacity. I'm presently the vice president of refinery operations for HollyFrontier and its five refineries.

Q. Thank you. Did you pre-file written

Page 41

testimony in this matter?

A. Yes.

Q. I'm going to ask Mr. Visser to hand you a copy of that testimony.

Can you tell us whether you adopt your testimony as your testimony today in this matter?

A. Yes, I do.

Q. Is that a true and accurate copy of your testimony?

A. Yes, it is.

Q. Thank you, Mr. McKee.

Can you please share with the Commission why water conservation is important to Navajo Refinery?

A. Water conservation is important to Navajo Refinery, as well as the community of Artesia. It provides benefits to the community and also to the facility in the sense that water is a very precious resource of this area.

Our efforts at water conservation impact the area in two ways: Number one, we reduce the amount of water intake into our facility, thereby freeing it up for the community; and two, we reduce the amount of water being disposed of.

Disposal of water in our injection wells is a finite resource. Anything that we can do to reduce the

Page 42

amount of water being injected into those injection wells will also extend the life of those wells.

Q. What water conservation measures are currently under consideration at the refinery?

A. The refinery has a very large portfolio right now of projects that we are implementing or will implement to reduce the amount of water intake, as well as minimize the amount of water disposal.

Some of these projects include things like reverse osmosis units, where we will take the reverse osmosis rejects, pass it through a secondary reverse osmosis unit, reduce the amount of disposal material, and reuse the water in the facility. Our present plans we anticipate will be able to reduce water intake by about 39 percent.

We're also looking at water reuse projects. Examples of those include reusing the water from our wastewater system that is presently being injected into the injection wells. We're also looking at reusing potentially actually the City of Artesia's wastewater effluent, which is presently being utilized by the City. We could conceivably clean that water up and reuse it at our refinery and reduce our water intake.

Q. If the State were to enact a Class I hazardous waste injection well program, how would that

Page 43

benefit the refinery's water conservation efforts?

A. I think a Class I hazardous waste injection well program does a couple of things for the refinery, as well as the community. First, it allows us to evaluate potential opportunities for our water conservation efforts. As stated previously, whenever we take the opportunities to recover waters from our reject streams, any of those remaining constituents which are hazardous or potentially hazardous actually increase in concentration. The mass stays the same; the concentration increase.

So every effort we do to reduce the amount of water, both in our intake, as well as disposal, puts us in a position where we're approaching the hazardous waste limits set by the EPA.

So one of things here that a hazardous waste injection well can provide us is an opportunity to explore those conservation measures we have in place and approach those without exceeding the hazardous and nonhazardous classifications.

Q. Would approval of a Class I hazardous waste injection well permit change the effluent that the refinery disposes of through underground injection?

A. The approval of a Class I hazardous waste injection well changes the concentration of the

Page 44

materials that are going into the well, not the mass quantity of those wells. One of the things that we're looking at doing is maintaining the operation of flexibility at the facility, as well as benefiting the community by reducing water intake.

So having a Class I hazardous injection well would allow us to explore those programs we have in place, which would include not only water conservation efforts, but also looking at expanding our facility as well as increase our utilization of crude oil produced in the New Mexico Permian Basin.

Q. Does the refinery currently have any plans to seek approval for a Class I hazardous waste injection well permit if the regulations are adopted?

A. Yes. Our refinery is looking at exploring a fourth underground injection well. We have three injection wells. Those have a finite life. That finite life is impacted by two things: Number one, the amount of water we inject into those wells; and number two, it's also affected by other entities utilizing the well formation. They inject into the same well formation we do.

So a combination of those two factors gives a finite life to those wells. We will need a fourth injection well, either hazardous or nonhazardous, for

Page 45

our facility.

Q. And my last question for you: If the regulations were approved by both the State and by EPA, what additional steps would the refinery have to go through before it could operate a Class I hazardous waste injection well?

A. First, we'd have to obtain a Class I hazardous waste injection well permit. This involves submitting an application to New Mexico OCD. We'd have to make sure this meets all the criteria of Class I hazardous waste injection.

Second, assuming we obtain the permit, we have to obtain a no-migration petition from the U.S. EPA. This allows an exclusion that can be obtained on a case-by-case basis.

We also have to demonstrate that our hazardous waste, if disposed of, will not migrate for over a period of 10,000 years into surrounding groundwaters. We only intend to seek a no-migration exclusion for the present constituents in our wastewater stream, without looking at adding any additional new constituents. If new constituents were to arise, say, from a new crude type that we're processing, we've got to resubmit our proposal to the Commission to inject those constituents into our hazardous waste injection

Page 46

well.
MR. MARTELLA: Thank you, Mr. McKee. You will be available later today for any cross-examination.
Mr. Hearing Officer, I'd like to respectfully move Mr. McKee's testimony into the record, as well as Exhibit A, which is a copy of his resume.
HEARING OFFICER CHAVEZ: Any objections?
MR. BRANCARD: No objections.
HEARING OFFICER CHAVEZ: So moved.
MR. MARTELLA: Thank you.
(Exhibits 2 and 2A were admitted.)
MR. VISSER: Navajo Refining would like to call Bob Van Voorhees at this time.

ROBERT VAN VOORHEES

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. VISSER:

Q. Please state your name and address.

A. My name is Robert Van Voorhees. My address is 1155 F Street, Northwest, Washington, D.C.

Q. Thank you. Can us please briefly state your background and qualifications to testify in this matter?

A. Yes. I hold a Bachelor's Degree in Political Science from George Washington University and a law degree from the University of Virginia School of Law.

Page 47

For the past 40 years plus, I have been actively involved in practicing law and representing clients in regulatory matters dealing with environmental and energy regulation.
In particular, since 1985, I have represented clients increasingly and have focused my efforts in the area of underground injection control. And I have represented, in particular, a group of companies that came together in 1984, companies that operate Class I injection wells, both hazardous and nonhazardous injection wells. And they came together for the purpose of following up on the 1984 amendments to the Resource Conservation and Recovery Act, which put in place a land disposal restriction which included restrictions on the injection of hazardous waste into the Class I injection wells.
It was through that group, first as their outside counsel, and I now currently serve as executive director of the continuing group of companies that operate Class I injection wells.
I coordinated the participation of industry participants in a regulatory negotiation that EPA put together in 1986 and '87 to develop specific recommendations for the Class I hazardous waste injection well regulations that were adopted ultimately

Page 48

in 1988 and are the current version of the regulations for Class I hazardous waste injection wells.
Continuing with that -- and that regulatory negotiation included a number of state regulatory officials who have responsibility for underground injection control programs and also environmental group representatives and industry representatives, in addition to EPA and its own technical experts that participated in that process.
Subsequent to that, over that period of time, from then until now, I have represented a number of injection well operators, both as members of my organization and individually, in obtaining Class I injection well -- hazardous waste injection well permits and in going through the petition process to obtain approval of the no-migration exemption petitions that were required by the 1988 regulations.
It has been my responsibility, as part of that process, to follow all developments in Class I injection well regulation and, in particular, with respect to Class I hazardous waste injection wells.

Q. Thank you. Did you prefile written testimony in this matter?

A. I did.

Q. I'm going to hand you a copy of the

Page 49

testimony, as well as Exhibit H. Is this a true and accurate copy of your testimony?

A. It is.

Q. Do you adopt that testimony today as your testimony today in this hearing?

A. I do.

Q. Thank you.

I'm going to talk a little about the background and history of the UIC program. Can you just describe briefly, first of all, what is the Underground Injection Control Program?

A. The Underground Injection Control Program was put in place through legislation adopted by Congress in 1974. The Safe Drinking Water Act had several main purposes. One was to create a program through which the Environmental Protection Agency could promulgate water quality standards, but it also included a program that built on an EPA policy. EPA earlier in 1974 had concluded that underground injection should be regulated so that it could protect potable water, potentially usable water resources, underground sources of drinking water in particular.
That regulatory program led to the development of regulations by EPA over the next several years. And in 1980, EPA promulgated the UIC program.

Page 50

The statute directed EPA to determine which states would need to have underground injection control programs and to set minimum requirements for those programs.

So EPA adopted -- first of all, said that every state in the country needed to have an Underground Injection Control Program and then adopted regulations that established the minimum requirements for a state Underground Injection Control Program. And pursuant to the statute, put in place a process that would allow individual states to seek and obtain what's called primacy, which is to have the primary enforcement and implementation responsibility for those programs within their individual states.

Q. Thank you. What is the UIC Class I hazardous waste injection well program?

A. The Class I hazardous waste injection well program came about because Congress passed the Resource Conservation and Recovery Act and put in place a regulatory program for the management of hazardous wastes.

EPA had its UIC program and adopted additional regulations that were put in place so that when you obtain an underground injection control permit for a Class I hazardous waste injection well, it would also serve as a RCRA permit for management of those

Page 51

hazardous wastes.

In particular, EPA added to the 1980 regulation requirements that put in place responsibilities for operators to obtain the necessary financial assurance similar to what other RCRA hazardous waste facility operators had to obtain.

And then, as I indicated, in 1984, Congress passed the hazardous and solid waste amendments which put in place particular restrictions on the land disposal of hazardous wastes.

As a follow-up to that, EPA went through the regulatory negotiation process I indicated and developed a set of regulatory recommendations. They were trying to achieve consensus among all the participants.

EPA did not ultimately succeed in getting complete consensus among those groups. At the last minute, a number of groups pulled out. But by that point in time, draft recommendations had been developed that EPA ultimately was able to use to put in place regulations that followed up on the provisions that Congress had put in place.

Specifically, Congress said you can -- we're imposing restrictions on the land disposal of hazardous waste, but EPA is allowed the use of technologies that it finds to be protective of human health and the

Page 52

environment.

In particular, EPA could do that for Class I injection wells if it found that there would be no migration of hazardous constituents out of the injection zone for as long as the waste remains hazardous. What EPA developed was what's become known as the no-migration exemption process, and it takes its name from that particular provision.

And that means that any Class I injection -- hazardous waste injection well operator must first obtain a permit, but then also must make this demonstration that there will be no migration of hazardous constituents out of the injection zone for as long as the waste remains hazardous.

The EPA did that by establishing a petition process that requires an operator to submit a demonstration that relies very heavily on scientific data input and modeling, demonstrating what the movement of the constituents is going to be in the subsurface.

And it can be done in one of two ways. Either you demonstrate that there will be no movement of those hazardous constituents out of the injection zone for a period of 10,000 years -- EPA chose that period, saying that we're convinced that the mechanisms that are in place in the subsurface will render those wastes

Page 53

nonhazardous over that period of time through a number of different systems. They will either precipitate out. They will combine with the rocks. They will do other things.

The alternative is you can demonstrate that through chemical transformation the wastes will become nonhazardous prior to the time that they could move out of the injection zone.

Q. Thank you. In addition to this no-migration petition process, how else are Class I hazardous waste wells regulated differently than nonhazardous waste Class I wells?

A. In 1988, when EPA added the no-migration petition process, it also made a number of changes in the technical requirements for Class I hazardous waste injection wells.

That came about partly because some of the environmental groups that were participating in that regulatory negotiation process had identified particular concerns that were brought into that discussion. EPA itself decided that it wanted to tighten up some of its regulations, so there were additional requirements imposed. And that's what we refer to as the 146 requirements because it's in 40 CFR, Part 146, Subpart H, that EPA added in 1988 as a specific new set of

Page 54

technical requirements for Class I hazardous waste injection wells and a couple of types of things in particular.

Siting requirements, in other words, a Class I nonhazardous well, you establish an area of review around the well in which you have to look at all artificial penetrations as potential avenues for movement of fluids out of the injection zone, and that's got to be a minimum of one-quarter mile for nonhazardous wells. For hazardous wells, as of 1988, that's a two-mile minimum area of review. So that's an additional siting requirement.

We also have -- they also added requirements for injection wells to provide additional construction so that there would be a complete cement sleeve around the injection tubing -- around the long stream casing that goes all the from the surface down into the injection zone and strengthen the requirements for tubing and packers and for open seal wells to make sure that there would not be release and that you can identify through the pressure maintained in the annulus whether there would be any leaks that developed in the well. So there are a number of additional requirements.

Some monitoring requirements include post closure requirements which are unique to hazardous waste

Page 55

injection wells. Once you stop injecting, you must continue to monitor the injection zone to make sure that it has stabilized and that there won't be further movement of the waste afterwards.

There are additional things that I have in my written testimony that imposed additional requirements. That's a summary.

Q. Thank you. You mentioned earlier that under the EPA program, states can obtain authority to implement this program. Does New Mexico currently have the authority to implement the hazardous waste injection well program?

A. New Mexico has an authority -- in 1980, when EPA established the program, New Mexico requested primacy, and in 1983 was granted primacy for the Class I injection well program.

Now, when the 1988 amendments came along that I mentioned, each state was then required to make revisions to its regulations to adopt the additional requirements for Class I hazardous waste injection wells.

As I understand it, at that time there were no such wells in New Mexico, and there had not been any applications for wells in New Mexico. So New Mexico chose to simply limit its program to Class I

Page 56

nonhazardous waste injection wells and to prohibit wells so that it wouldn't have to adopt -- go through the process of adopting the additional requirements from the 1988 revisions.

So New Mexico has all of the authority over the Class I injection well program -- none of that is exercised by anybody else -- and is in a position that it could get a program revision if it wanted to expand and adopt the additional regulations in the proposed amendments.

Q. Thank you. What are the minimum requirements that would have to be in a rule by New Mexico in order to implement this program?

A. That's a fairly specific requirement. As Mr. Martella indicated previously, EPA's basic requirement is that the State program be at least as stringent as the federal program.

In particular, for Class I injection wells, that means you need to sort of look at the federal regulations and make sure, almost on a section-by-section basis, that the State regulations are as stringent as the federal regulations.

Q. In your opinion, are the proposed regulations as stringent as the EPA requirements?

A. Yes, they are.

Page 57

Q. Can you explain how you come to that conclusion?

A. Yes. And I think what's particularly helpful to me and what I thought I would do, if you don't mind, you have there what was submitted as Exhibit H of my testimony, if you could find it in your book. I think it's useful because I want you to understand what's included in here.

You have the specific regulatory amendment, but this summary does a couple of things. First of all, there's a summary that's sort of up front and identifies what was done in each part of the regulations.

And as was explained to you, in the existing regulations, most of the changes were made to add cross-references to the new regulations and also to eliminate the repeated references that said, "Class I nonhazardous waste injection wells."

If you look on page 21 in particular -- it's actually after page 20 -- there's an exhibit that goes through and sort of gives you a table comparison. It looks like this. That basically compares each part of the federal regulations with what's included in the amendment.

I find particularly interesting the part that follows immediately after that, which is identified here

Page 58

as Exhibit 2, which is a comparison of the proposed water conservation rule against federal EPA provisions.

If you look at that, the parts that are underlined and sort of appear in a gray tone here are the things that were added. The other parts, the base document of this, if you look in particular starting on page 5 or 6 or 7 -- if you look starting at page 7, the black letter in there is the base current EPA regulations. The cross-through -- the strike-throughs and underlining indicate what changes were made in those EPA regulations to put them -- to propose to adopt them as New Mexico regulations. So it's easy to see how this set of regulatory provisions is at least as stringent as the federal requirement.

It breaks down into -- the first couple of sections take the basic permitting requirements for Class I injection wells that are in Part 144 of the federal regulations and adopt those into the new section of the New Mexico regulations. It would apply specifically to Class I hazardous waste injection wells.

And that just makes sure that all the basic requirements for what have to be in a Class I permit at the federal level will also be in a Class I permit for hazardous waste injection wells at the state level.

It then goes through and takes what were

Page 59

these new regulatory provisions that were adopted in 1988 and basically includes all of that language verbatim, except for a couple of movements. The definition section was moved up to another section. And as Mr. Martella indicated, there are several things that New Mexico has done that are more stringent than the federal regulations, so there are changes in here that reflect those more stringent provisions.

But otherwise, if you look through this section, you'll note that the base text that comes from the federal regulations is, in most cases, unchanged and therefore is really as stringent as the federal requirements.

Q. Thank you very much. You mentioned there were some ways that this is more stringent than EPA regulations. Can you briefly describe a couple of those ways that it's more stringent?

A. Yeah. Mr. Martella provided a list of those, but the starting point is that New Mexico chooses to cover a broader range of underground sources of drinking water. So in New Mexico, anything that's less than 10,000 parts per million -- equal to or less than 10,000 parts per million is protected, regardless of its capacity to supply a public water system, whereas EPA says it also has to be demonstrated that it can supply a

Page 60

public water system.

Both EPA and New Mexico allow certain exceptions to that to allow injection into formations that are less than 10,000 parts per million. EPA has a set of criteria very similar to what New Mexico has. New Mexico, however, limits that and says you cannot get one of those exceptions for anything with less than 5,000 parts per million total dissolved solids, whereas EPA doesn't have that same kind of limitation.

As Mr. Martella indicated, EPA would allow states to take over the plugging and abandonment of wells at the end of operations. New Mexico basically keeps that responsibility on the operator and doesn't allow that to be transferred to the State.

There are other provisions that have to do with financial assurance, and those are detailed in my testimony and were listed by Mr. Martella.

Q. Thank you. Are there any ways in which the proposed regulations are less stringent than EPA's requirements?

A. No, there aren't.

Q. Thank you. And you mentioned that many other states have authority to implement this program. How does the proposed regulation compare to what's in place in other states with Class I hazardous waste programs?

Page 61

A. New Mexico, in the proposed rule, would be limited to hazardous waste generated by petroleum refineries. That would be unique. New Mexico would be the only states that does that.

Other states that allow the permitting of hazardous waste injection wells typically would allow any applicant for that. And that would include both on-site facilities and commercial injection well operations that would allow them to receive wastes from other facilities. So that's the principal difference in it.

As indicated, there are parts of these regulations that are more stringent than the federal regulations. Apart from that, it's very similar to what other states have done. And in particular, as has been indicated, there is no state that has taken on the no-migration exemption part of the program that was added in 1988.

Q. You mentioned this is limited to refineries. In what other ways -- what other kinds of hazardous wastes can be injected besides that limitation? What are the limitations here?

A. As Mr. McKee indicated, when you get your permit for a Class I hazardous injection well, you identify the waste stream that's going to be injected.

Page 62

There's a requirement to do periodic monitoring of that to have representative characterizations of that waste stream, so you're limited to that.

You're also limited because you have to make that demonstration for the approval of the no-migration exemption that's based on the waste stream that's being injected and, in particular, is based on the hazardous constituents in that waste stream as part of that modeling demonstration that's made.

So if you make significant changes to that stream, you have to go back and get revisions to the permit and revision modifications and potentially a reissuance of that no-migration exemption approval.

Q. To change topics a little bit here, we've been talking about the regulatory process here. But based on your review of the regulations, would they be protective of human health and the environment if they were implemented in this current form?

A. They would be protective of human health and the environment. EPA itself has developed the regulations to ensure protection of human health and the environment. And EPA and a number of other organizations have studied hazardous waste injection wells a number of different times to make sure that it was being protective of human health and the

Page 63

environment.

In particular, when Congress passed the 1984 amendments, it asked EPA to look at that. And EPA prepared and submitted to Congress a report on Class I injection wells in 1985, where it went back and studied all of the injection wells that had been operated up to that point in time. And there had been some incidents and there had been some reported problems, and EPA identified those.

A similar study was commissioned by what's now the Groundwater Protection Council, which is the national organization of state underground injection and groundwater control officials, groundwater protection officials, to look at all of those things. EPA concluded that the problems that had existed prior to the 1980 regulations would have been prohibited and precluded by those regulations once in place.

And there have been studies that have gone back and looked at that since then and have not identified any problems of contamination of underground sources of drinking water for the operation of Class I hazardous waste injection wells or Class I injection wells. And most recently and comprehensively, EPA did a report in 2001 in which it made that conclusion, that it was a safe and effective process.

Page 64

And as Mr. Martella indicated, some of these studies have stated that it is, in fact, the safest and most effective way of managing fluid hazardous wastes, and it's safer than any of the alternative methods that could be used.

Q. Thank you. You mentioned this EPA study in 2001 that found no incidents of any contamination. Are you aware of anything since 2001, any studies or other information about incidents with these wells?

A. Since 2001 there's not been the same kind of comprehensive study, but I'm not aware of any incidents that would prompt that study.

And the other thing I would point out is that EPA developed a new class of injection wells for the first time and promulgated that in 2010. Those wells are for the geologic sequestration of carbon dioxide as a greenhouse gas mitigation methodology.

In the process of doing that, EPA and a number of the national energy laboratories reviewed the history of operations of underground injection and concluded that it was a safe and effective methodology. And in fact, EPA based the development of that Class VI rule on the Class I injection well program for nonhazardous wastes, the Class I hazardous waste program being even more stringent and more protective than the

Page 65

nonhazardous program.

Q. Thank you. Just one last question then. Why is it preferable to dispose of hazardous waste through injection wells, as opposed to other disposal methods?

A. As EPA has indicated repeatedly, and this was highlighted by Mr. Martella, the studies that have been done have shown that hazardous waste injection of fluid hazardous waste is the safest and most effective methodology.

If that methodology is not available, then one of the most effective tools for managing fluid hazardous wastes is not in the toolbox, and therefore, alternatives would need to be used. And EPA has, on a number of occasions, concluded that those alternative tools are less desirable and less effective.

In particular, there was a comparative risk assessment study done by the Office of Solid Waste in the 1980s. And I mentioned that in my testimony, where they pulled together a group of public health scientists and other scientists and compared various kinds of methods for managing hazardous waste and concluded that Class I hazardous waste injection fell in the safest category of methodologies, as compared with some of the other methodologies that are available.

MR. VISSER: Thank you, Mr. Van Voorhees.

Page 66

We don't have any further questions at this time.
Mr. Hearing Officer, I'd like to move into evidence Mr. Van Voorhees' direct testimony, as well as a number of exhibits.
Exhibit A is his CV. Exhibit B is an article entitled, "An Overview of Injection Well History in the United States of America." Exhibit C is an article entitled, "Removed From the Environment." Exhibit D is an EPA poster entitled, "Safe Drinking Water Act, Underground Injection Control Program, Protecting Human Health and Public Drinking Water Resources." Exhibit E is an EPA article entitled, "UIC Inventory by State." Exhibit F is an EPA article entitled, "Class I Underground Injection Control Program: Study of the Risks Associated With Class I Underground Injection Wells." Exhibit G is an EPA study entitled, "U.S. EPA's Program to Regulate the Placement of Waste Water Fluids and Other Fluids Underground." Exhibit H is a summary of the proposed water conservation rule. Exhibit I is an article entitled, "A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells."
HEARING OFFICER CHAVEZ: Any objection?
MR. BRANCARD: No objection.
HEARING OFFICER CHAVEZ: Those are all accepted for the record.

Page 67

At this point, I want to take about a seven-minute break. I'm showing 10:28-ish. Let's be back just after 10:35. Let's go off the record. Thank you.
(Exhibits 3 and 3A through 3I were admitted.)
(A recess was taken.)
HEARING OFFICER CHAVEZ: We're going to go back on the record. One matter of housekeeping. It appears that we did not swear in Mr. McKee, so we will do that at this time.
MR. MARTELLA: Mr. McKee, you had offered some testimony today. And we would just like to confirm, based on the testimony that you gave -- would you like to administer the oath?
THE COURT REPORTER: Sure.
(Whereupon Mr. Michael McKee was duly sworn.)
HEARING OFFICER CHAVEZ: Thank you very much.
You may call your next witness.
MR. MARTELLA: Thank you. We would like to call Alberto Gutierrez.
ALBERTO GUTIERREZ
having been first duly sworn, testified as follows:
DIRECT EXAMINATION
BY MR. MARTELLA:

Page 68

Q. Mr. Gutierrez, would you please state your name and address?
A. Yes. My name is Alberto A. Gutierrez, and my address is 500 Marquette Avenue, Northwest, Albuquerque, New Mexico 87102.
Q. Thank you. And you have a very relevant and extensive CV as part of our exhibits. I'm going to ask you to briefly summarize some of your qualifications that are relevant to the hearing today.
A. Sure. I am a geologist. I have a Bachelor's degree from the University of Maryland in 1977 in Geology and Geomorphology, followed by a Master's at UNM in 1980 in Geology and Hydrogeology.
I am a Registered Professional Geologist, and I have experience -- almost 40 years of experience in environmental geology dealing with permitting and investigations under RCRA and CERCLA, the Resource Conservation and Recovery Act and superfund, as well as, specifically in this matter, relevant to this matter, I have done a lot of work on Class II injection wells specifically for acid gas injection. That's my technical background.
From a regulatory perspective, I've worked with clients on regulatory compliance issues for many, many years. And I served on the New Mexico

Page 69

Environmental Improvement Board as its Chair for four years and for longer on that board, and then I served on this Commission as well as for four years, looking at environmental regulations in the State.
Q. Thank you. Did you file written testimony in this matter previously?
A. Yes, sir.
Q. I'm going to ask Mr. Visser to hand you a copy and ask if this is a true and accurate copy of your testimony.
A. Yes, it is.
Q. And do you adopt this as your testimony today?
A. I do.
Q. And before we turn to some substantive questions, I'd just like to clarify for the Commission, to avoid any confusion, you had attached a slide deck to your written testimony which I think the Commission has before them. We may refer to slides today that are a kind of condensed version of that, so they don't coordinate entirely with the slides that are before the Commission. Is that a correct understanding?
A. Yes. In fact, it's just a subset of that slide deck that we'll use for demonstrative purposes.
Q. Thank you. We'll submit both versions for

Page 70

the record, just in case someone is trying to follow. They may not be entirely in sync. They are all the same slides. And we did that again to try and efficiently use the time today.

Turning to our discussion, Mr. Gutierrez, and turning back to our conversation about environmental protection, which factors must be considered, in your opinion, to ensure that underground injection control wells are protective of human health and the environment?

A. Basically when you look at an injection well, either a hazardous waste injection well, Class I, like what we're talking about, or the Class II type wells, in general, you've got four factors that you really need to consider to determine what the protectiveness is to the environment.

Those four factors begin with a siting and geologic analysis that is a careful analysis of the stratigraphy and the structure in the area and the potential for fluid movement and the presence of water wells and other potential penetrations into the disposal zone, and those things need to be considered.

The second factor is the well construction itself. In other words, how do you construct the well in order to assure that it is a safe and effective

Page 71

mechanism for hazardous waste disposal or for waste disposal in the case of a nonhazardous well?

The third factor that is equally important is how do you operate and maintain the well to make sure that the well continues to serve appropriately and to be protective of groundwater and of human health and the environment?

And the fourth and final factor is the end of the life of the well. How do you deal with the well when you have to close it, when you have to plug it, and how do you take care of the well in terms of closure and post closure care? And then associated with that, how does the State and how do the regulators assure that there is financial resources necessary to carry out that closure? And that's the financial assurance provision.

Q. Thank you. So what we basically want to spend the next couple of minutes on are walking back through those four factors in a little more detail. And then ultimately, how do the proposed regulations line up in your opinion with advancing and promoting each of those four factors?

Let's start with the first of your four factors, which is the siting considerations and ensuring that a well is located in a way that it is injecting into appropriate geologic formations.

Page 72

A. Sure. If we could put up just one slide? That's fine right there. That gives you the four factors that I just mentioned.

If we move a little further to the next slide, it will talk more in detail about the geologic and siting analysis, which is the first question that you asked me.

Of course when you first look at the potential for a Class I hazardous waste injection well or, in fact, any injection well, you need to have a good understanding of the geologic environment in which you intend to place that well.

You need to identify a zone that will serve as an adequate reservoir for the intended material that you intend to dispose of. You need to determine whether that zone is adequately isolated from any fresh groundwater and from other zones that could be affected. And you need to make sure that there is no -- in the case of deep well disposal in places like the Permian Basin, that there isn't -- that there is no effect -- deleterious effect on potential production, because many of these zones are located in areas where you have oil and gas production.

You need to make sure that you've got excess capacity in the reservoir. And the way that you

Page 73

accomplish this -- if you'll move to the next slide, I can show you a little bit.

The kinds of things that we do in order to determine that is we characterize the stratigraphy. We identify the area of review. In this case here, we're talking about a two-mile area of review, where you characterize all of the fresh water wells and where they're located and what the bottom of fresh water is relative to the intended zone that you want to inject into.

You then look at all of the structural and stratigraphic characteristics so that you can adequately define the system in which you intend to inject your wastes and be able to make sure that it has the right parameters, the right characteristics, to be able to contain those wastes, an adequate caprock.

And very importantly, within the area of review, that you identify all of the potential conduits for fluid to get out of that injection zone, i.e., wells or wellbores that may be plugged or improperly plugged within the area, and you determine what is the depositional environment.

You use a series of -- I think in the next slide are a couple of -- yeah. You do the kinds of things that are portrayed on this slide. In other

Page 74

words, you map the structure of the proposed interval. You do a series of geologic cross-sections so that you get a good understanding of the geometry and of the potential zones that could be affected by the injection. In some cases, we have to use seismic data to evaluate that. And you calculate reservoir volumes.

And then also, as part of what has been talked about here in the context of a no-migration petition, you model what this reservoir is going to do over time. So clearly, there's a lot of steps that are involved in that.

And you have to provide that information. And the rules that we have proposed here today require that all of that information be provided to the regulatory agency in order for them to be able to make a reasoned technical decision on the reservoir.

Q. Thank you. Let's talk about your second criterion factor, the construction and the completion of the well.

A. Right. I think I may have a slide on that. I think we can skip this one. Yes.

The well design itself, you can think of a system as basically two things you have to consider in the wastes that you inject. One is the natural geologic environment, the stratigraphy, the structure. We can't

Page 75

do anything about that. We just have to be able understand it and to make a selection accordingly.

But the one thing that we can affect is that the wellbore itself will be adequate to introduce those wastes into that injection zone and make sure that when you put them in there, they stay in there.

For that purpose, these regulations, these proposed regulations, as well as the state of the industry, has developed a series of technical requirements for the construction of these types of wells.

And those technical requirements include having the correct types of materials in your casing tubing, packer, et cetera, to assure that it's compatible with the wastes that are being injected. Also, that you have an adequate, in the case of most wells, surface casing that is cemented to the surface, and then maybe an intermediate casing, and that the production casing is cemented to the surface. So you've got multiple layers of cement bonded to pipe -- cement bonded to pipe and then to the reservoir, isolating groundwater from the well itself.

When you drill the well, that is the time to really truth test a lot of the geologic information that you've developed in the siting process. So it's very

Page 76

important what the logging -- geophysical logging program and sampling program is for the well when you drill it to confirm that indeed the assumptions and the information, the data that you had, adequately represents the structure in that area.

We also then -- after the well is drilled and completed, you do cement bond logs to assure that you've got a good seal that would prevent any kind of contamination from coming up into the wellbore itself. So those are the types of things that you do.

Q. And your third factor is operating the well?

A. Right. When you operate the well, again these regulations have provisions for the kinds of things that have to be done in the operation and maintenance of these wells.

In other words, you have to be able to monitor injection pressures, injection volumes. You have to be able to monitor annular pressure to assure that you don't have any casing or tubing leaks in the well. You have to do periodic mechanical integrity testing of the well on an annual basis to make sure the well maintains its integrity throughout the injection process. So it's a very careful monitoring and operational requirement. Which of course, you have to comply with the permit conditions, such as the maximum

Page 77

allowable operating pressure and the maximum injection rates that you're allowed.

Q. And then finally, the closing and the plugging of the well?

A. Yes. A critical issue, obviously, is that when the well is no longer usable for disposal of the waste because maybe the reservoir has become full or for some reason the well is going to be closed, you have to make sure that you appropriately plug and abandon that well and continue to monitor the reservoir to assure that the well itself does not become a conduit for any kind of wastes to make it out of the injection zone.

And in order to accomplish that, there are already provisions in the OCD regulations regarding the plugging and abandonment of wells. But these proposed regulations impose additional, more stringent requirements in the context of the monitoring requirements, post closure care requirements, and the financial assurance requirements that are designated to make sure that the resources are available when you need to close the well.

Q. Have you read the proposed regulations that are subject to this hearing in preparation for your testimony today?

A. Yes, I have.

Page 78

Q. And what is your opinion on how the regulations pursue and achieve and protect the four considerations that you described today?

A. I'd like to show one slide. I think if you can advance -- keep on going. There you go.

In my written testimony, this Table 1 is included. And really what I tried to do here was very simply say, "Okay. Of these four factors that are the technical factors that we need to assure that the groundwater is adequately protected and the environment is adequately protected with these wells, what portions of the regulations, both existing and new proposed, relate to each one of those four factors?

So I won't, in the interest of time, go through all of this. But I will mention that it's a handy tool because you can see what are the requirements for siting and geologic analyses. In the italicized sections there, those are existing regulations that are applicable to these types of wells. And then underlined in the straight text there in bold are the new provisions of the regs that are related to each one of those four factors.

So you can see that in the case of the first three factors, there are both existing and new proposed changes in these proposed regulations that address each

Page 79

of these three factors. The closure and post closure care area, while there are obviously, as I mentioned, already existing plugging and abandonment requirements that the agency has, the closure and post closure care requirements under the proposed regs are significantly more stringent and require additional financial assurance, and those are laid out there in those sections.

Q. Thank you. Just moving on to a few other questions before we wrap up here, what classes of underground injection wells are currently operated in New Mexico?

A. If we could turn to Table -- that one right there. If you reference Table 3 at the bottom there, it's a good summary. Table 2 is just showing a comparison of all the UIC wells in EPA Region 6 that include New Mexico.

But to focus in on New Mexico, in Table 3 there you see basically we have four types of UIC wells that are permitted and currently operating in New Mexico. We have Class I nonhazardous waste wells. We have, of course, no Class I hazardous waste wells because that's what we're here to talk about today.

We have Class II wells by which the -- most of the Class II wells in the state, in terms of numbers,

Page 80

are associated with enhanced oil recovery or EOR types of activities. So they're injection wells associated with waterflood or CO2 types of projects.

Then there are also approximately 900 saltwater disposal wells that are both operated by individual operators to deal with their produced water or saltwater disposal needs, as well as commercial operators.

And then there are Class II acid gas injection wells, of which there are 15 approximately in the state. And those are also Class II wells that dispose of CO2, permanently sequestering CO2 and hydrogen sulfide.

There are Class III wells, which are essentially wells that are set out in the regulations for solution mining. And in this state, actually we used to have some Class III wells for solution mining of uranium up in the Grants mineral belt. But now all of the solution mines -- and of course, that kind of went away in the late '70s. The solution mining that takes place now that explains these 36 wells are basically brine production wells for oilfield activities.

And then Class V is a kind of grab bag of municipal waste disposal wells and other nonhazardous waste disposal wells that are classified wells.

Page 81

Q. How does New Mexico implement the UIC program in the state among the regulatory agencies?

A. Basically, the permits for UIC wells are issued, in the case of Class I and Class II wells, by the New Mexico Oil Conservation Division. They are the ones who evaluate the information that is submitted as part of an application and then evaluate the application and either approve it or approve it with conditions or reject it.

For the remainder of the UIC wells, that permitting is done by the Environment Department.

Q. Are you aware of any instances of groundwater contamination in New Mexico resulting from the migration of fluids from UIC wells?

A. In short, the answer is no. I've been working in this field in the State of New Mexico since the late '70s. I have not been aware of any groundwater contamination situations arising from the actual operation of a UIC well.

But furthermore, in preparation for my testimony today, I did inquire of the Oil Conservation Division and the Environment Department if there were any instances that they knew of that were specifically related to the operation of a UIC well that resulted in contamination of groundwater, and that was a negative

discussion as well. We didn't find any instances.

Q. Thank you.

Finally, given your review of the proposed regulation and the considerations that you think are most relevant to protecting the environment and groundwater, do you believe that, if adopted, the regulation will protect human health and the environment?

A. Yes, without a doubt. I believe that the -- as had been mentioned by numerous witnesses, the disposal of hazardous and nonhazardous waste by properly permitted, constructed and operated UIC wells is a very safe and environmentally responsible way of dealing with waste. And I believe that these rules clearly incorporate what is necessary to assure that that happens.

Furthermore, I think that the rules -- very important to the Oil Conservation Division, the rules also protect correlative rights and avoid the waste of resources.

MR. MARTELLA: Thank you very much for your testimony.

Mr. Hearing Officer, with respect, I would like to move into the record Mr. Gutierrez's final direct testimony, as well as Exhibit A, which is his

resume; Exhibit B, which is the well design schematic; and Exhibit C, which is the PowerPoint presentation we attached to his testimony when we submitted it to the Commission.

HEARING OFFICER CHAVEZ: Any objections?

MR. BRANCARD: No objections.

HEARING OFFICER CHAVEZ: That is admitted.

(Exhibits 4, 4A, 4B and 4C were admitted.)

MR. MARTELLA: Thank you.

HEARING OFFICER CHAVEZ: You may call your next witness.

MR. VISSER: Our next witness will be Francisco Salvarrey.

FRANCISCO SALVARREY

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. VISSER:

Q. Please state your name and address.

A. My name is Francisco Salvarrey. My business address is 200 East Fourth Street in Roswell, New Mexico.

Q. Thank you, Mr. Salvarrey.

Can you briefly describe your professional background and qualifications to testify here?

A. I graduated from New Mexico State University in 2001 with a Bachelor's in Civil Engineering Technology degree. I'm hired by Occam Consulting Engineers as a project engineer and a Certified Floodplain Manager.

I recently participated in researching and drafting the Artesia Water Waste Ordinance, which was approved by the City of Artesia in 2000 – this year, in April of 2015, to begin their water conservation plan.

Q. Thank you. Did you prefile written testimony in this matter?

A. Yes, I did.

Q. I'd like to hand you a copy. Is that a true and accurate copy of your testimony?

A. Yes, it is.

Q. And do you adopt that testimony today as your testimony in this matter?

A. Yes, I do.

Q. Thank you. Can you explain briefly why maintaining potable groundwater supplies is important to New Mexico?

A. Yes. Maintaining potable groundwater supplies in New Mexico is critical. New Mexico is an arid region which has a limited supply of fresh water. Water is the foundation of life, and not only of life,

but also the foundation of economic activity. Neither can occur without having an adequate water supply.

Q. Thank you. Is it typically feasible to treat groundwater for human use and consumption once it has been contaminated?

A. It's possible to treat contaminated water. It is not our first choice. We'd rather avoid that situation, and it most commonly would not be economically feasible to do so.

Q. Thank you. You mentioned earlier that New Mexico is a very arid region and that water is important. What impacts do droughts have on the demand for groundwater in New Mexico?

A. Yes. Droughts can impact both the supply and demand sides. For example, reduced aquifer recharge often results in declining groundwater levels, which would reduce the productivity of wells and increase the cost of production.

On the demand side, droughts increase the need for groundwater to maintain current irrigation and water usage.

Q. Turning then to Artesia -- we heard from Mayor Burch already -- can you explain a little bit about how the recent drought in 2011 to 2013 affected the City of Artesia?

A. Yes. During that time, the City of Artesia was using a 85 percent of their capacity of their water rights, which is based off of 7,350 acre-feet of water. At that time the City officials decided to either purchase more water rights or go the other direction and conserve water.

Q. You mentioned two things here really that are options. Can you explain what the two options are for local governments to do when they have an issue of limited groundwater and need to look to make changes?

A. Yes. There's a number of options once you approach the supply. But the two most common options are increasing supplies by additional water rights, that is, if they're available or affordable. And the other option is to reduce demand through water conservation and water use efficiency.

Q. You mentioned earlier that you were involved in Artesia's process of developing water conservation measures. Can you talk about what your role was in that process?

A. Yes. I participated in the development of the Artesia water conservation strategies and am currently working in a public outreach program. I was involved with researching best practices for the water conservation consumer, behavior and other communities'

conservation plans. I also projected population growth and potable water demands with and without a conservation plan in effect.

I also researched the conservative views of vegetation and landscaping in this area, which helped determine an effective irrigation by hours during the day, days per week and weeks per month of the year.

Q. Thank you. Can you briefly describe what Artesia's water conservation goals are and what measures they have adopted so far to achieve those?

A. Yes. The City of Artesia, their goals -- their water conservation goals are to meet a 25 percent reduction in water use within five years.

To do so, the City of Artesia adopted the Water Waste Ordinance two months ago. The newly-enacted ordinance implements water restrictions that apply to all customers within the area, within Artesia.

And some of these restrictions include requiring self-cancellation or automatic shutoff nozzles for any hoses, establishing hours for spray irrigation during the day, providing drinking water to consumers in restaurants only upon request, mandating any leaks in the system to be repaired within five working days of their first discovery, requiring that all spray irrigation during the period from April 1st to October

31st occur only between 7:00 p.m. and 11:00 a.m.

Q. Thank you. We heard earlier from Mr. McKee, who explained a number of measures that the refinery is considering for water conservation efforts. Can you explain how their adoption of those measures might affect water conservation in Artesia and how it will affect their ability to meet their water conservation goals?

A. Yes. Navajo is currently purchasing 44 percent of the overall water delivery. If Navajo is able to conserve 39 percent, just alone, just with their conservation, it would reduce approximately 17 percent of its total demand. And Navajo Refinery's 17 percent reduction to the City's overall water usage will help in accomplishing the 25 percent water conservation goal.

In fact, if Navajo refinery were to reduce its water consumption by 39 percent, the remaining 56 percent of Artesia's water uses would have to meet 14 percent reduction to achieve the City's overall goal of 25 percent.

Q. Mr. McKee also testified that this proposed rule would be necessary for the refinery to adopt all of those measures to ensure that they had the flexibility to adopt these water conservation measures. Given what we've heard today, is it your opinion that approving

this rule would then also be beneficial to the City of Artesia?

A. Yes. From my understanding, a hazardous waste injection well would allow the refinery to concentrate its wastewater discharges, meaning that it could recycle and reuse wastewater in its process, decreasing the demand for fresh water.

From our calculations during the development of the Water Waste Ordinance, it is projected that if the City's overall water conservation plan were to meet a 20 percent reduction – and we're using a 20 percent reduction just to be on the conservative side. Our goal is 25 percent.

But if they were to do a 25 percent reduction in water usage, the City of Artesia -- their water rights capacity would extend for an additional 18 years. Navajo's 39 percent water conservation strategies almost doubles Artesia's 20 percent conservation calculated numbers and, if implemented, would add another seven years to its projected additional 18 years of current water system capacity, which means we would have 25 years more of water rights.

MR. VISSER: Thank you very much, Mr. Salvarrey.

At this time, I'd like to move, Mr. Hearing

Page 90

Officer, to enter into evidence Mr. Salvarrey's testimony, as well as his resume, as Exhibit A.

HEARING OFFICER CHAVEZ: Any objections?

MR. BRANCARD: No objections.

HEARING OFFICER CHAVEZ: Those are admitted.

(Exhibits 5 and 5A were admitted.)

HEARING OFFICER CHAVEZ: At this time, I would like for the Petitioner to make available their five witnesses for cross-examination. What I'd like to do first is allow cross-examination by the Oil Conservation Division and then the Commission and then the public, if any. So that being said, if we can --

MR. VISSER: Should we move and let the State sit here?

HEARING OFFICER CHAVEZ: Yes.

You may proceed with cross-examination.

CROSS-EXAMINATION OF ROBERT VAN VOORHEES
BY MR. BRANCARD:

Q. Thank you, Mr. Hearing Officer, Mr. Chairman, members of the Commission.

Again, my name is Bill Brancard, General Counsel for the Energy, Minerals and Natural Resources Department, and with me is Allison Marks. I just have a few questions to try to clarify particularly Mr. Van

Page 91

Voorhees' testimony and Mr. Gutierrez's testimony and try to close a loop there.

Mr. Van Voorhees, I believe in your testimony you indicated that the State of New Mexico has primacy for the Class I, III, IV and V UIC program of the Safe Drinking Water Act. Does New Mexico also have primacy for the Class II UIC program?

A. Yes, it does.

Q. Do you know which specific agency is granted that role in the State of New Mexico to implement the Class II UIC program?

A. I believe it's OCD.

Q. Thank you. For the Commission's benefit, have the decisions by U.S. EPA to grant primacy to the State of New Mexico been codified in the Federal Code of Federal Regulations?

A. Yes. Part 147 of the UIC regulations codifies when a state is granted primacy, so that it's -- there's a designation of primacy granted for Class II and for the other classes of underground injection.

I didn't say this during my testimony, but EPA has typically separated its Class II consideration from the other classes of underground injection, and now it's added the additional Class VI, which is also

Page 92

handled separately. So those are designations that are typically done as a separate step, but I believe they're actually all together for the original primacy.

MR. BRANCARD: Thank you, Mr. Van Voorhees.

CROSS-EXAMINATION OF ALBERTO GUTIERREZ
BY MR. BRANCARD:

Q. Mr. Gutierrez, am I correct that your written testimony indicates that you have testified on numerous occasions in support of Class II well applications before the Oil Conservation Division and the Oil Conservation Commission?

A. Yes, sir, I have.

Q. In Table 2 of your testimony which you presented up here on a slide, you show a number of different types of wells that the State has approved for UIC wells. Would it be correct to say that the overwhelming majority of those wells approved by the State are Class II wells approved by the OCD?

A. Yes, sir. Approximately 45, 4,600 of them are Class II wells. The only other class that even comes close is Class V, which is about 1,000 wells.

Q. And you also showed a Class IV, which indicates all the Class I wells that have been approved so far by the State. Have all of those Class I wells

Page 93

been approved by the OCD?

A. Yes.

Q. And Mr. Gutierrez, you listed a series of factors that the State -- that you have worked through in approvals of Class I and Class II wells that are evaluating each of those wells. Are you saying that those factors are currently being reviewed by the OCD in the Class II wells that you have submitted?

A. Yes, sir, they are. I would say with the possible exception of the specific closure and post closure care requirements that are part of these new proposed regulations.

Q. And so would it be fair to characterize the current proposal as adding more detail and more extensive evaluation of those factors to what is currently going on?

A. Yes.

MR. BRANCARD: No more questions.

HEARING OFFICER CHAVEZ: Thank you. I would now like to offer the Commission the opportunity to ask any questions of five witnesses presented by the Petitioner.

CROSS-EXAMINATION OF ALL WITNESSES
BY THE COMMISSION:

CHAIRMAN FLYNN: Do you want to start?

Page 94

COMMISSIONER LONGWORTH: Sure. Thank you, Mr. Chairman. Just a couple of quick questions regarding water rights.

What is the priority date of the Navajo water rights?

Fair enough. I'll move on.

What is the priority date of the City of Artesia's water rights?

MR. SALVARREY: I can answer that. The priority date that -- the City of Artesia has 7,348 acre-feet of water. 33 percent of those rights are junior, which means the other 69 -- 67 percent are senior rights, yes.

COMMISSIONER LONGWORTH: When you said junior and senior, you're talking about 1947 and the period post compact?

MR. SALVARREY: That's correct. 1947 and over are the senior water rights.

COMMISSIONER LONGWORTH: Just a couple of other quick questions. In development of the water conservation plan for the City of Artesia, was an American Waterworks Association water audit performed for the City of Artesia?

MR. SALVARREY: No, it wasn't.

COMMISSIONER LONGWORTH: Thank you. And

Page 95

is the applicant aware that one of the things that they reviewed -- there was a guidance document from the Office of the State Engineer. It didn't have the date on that. I'm guessing from the title it was a 2001 guidance. Is the applicant aware that that guidance document has been updated to 2014?

MR. SALVARREY: I was not aware of that.

COMMISSIONER LONGWORTH: That's all I have. Thank you, Mr. Chairman.

CHAIRMAN FLYNN: Commissioner Hutchinson.

COMMISSIONER HUTCHINSON: I only have one question here. I think this probably would go to Mr. Van Voorhees. Long time no see.

Could the refinery apply through EPA for a permit for a Class I well?

MR. VAN VOORHEES: No, it could not, because under the UIC program right now, the Class I permitting authority is entirely within the hands of New Mexico.

COMMISSIONER HUTCHINSON: Maybe one more.

Has there been any discussion -- I suppose this would go to Mr. Salvarrey. Has there been any discussion between the oil and gas industry and the Office of the State Engineer regarding the priority date or beneficial use of reclaimed water?

Page 96

MR. SALVARREY: No, that has not been discussed, sir.

COMMISSIONER HUTCHINSON: Maybe I'll redirect that. I guess that would be to Mr. O'Brien, as the operations officer.

MR. O'BRIEN: What was the question again?

COMMISSIONER HUTCHINSON: Have there been any discussions between the Office of the State Engineer and the oil and gas industry regarding the use of reclaimed water in the State of New Mexico and who has jurisdiction over it?

MR. O'BRIEN: I'm not aware of those discussions.

COMMISSIONER HUTCHINSON: Anybody else on the panel?

CHAIRMAN FLYNN: Commissioner Hutchinson, I am aware of a number of discussions that are occurring on a policy level on that issue between the State Engineer, the Secretary of the Energy and Minerals Department, myself and other stakeholders. But I'm not prepared to testify today.

COMMISSIONER HUTCHINSON: But none of our panel has that expertise, so I'll just drop that question. Thank you.

Page 97

CHAIRMAN FLYNN: Why don't we just keep going down the line? Commissioner Delfin.

COMMISSIONER DELFIN: No questions.

CHAIRMAN FLYNN: Commissioner Waters.

COMMISSIONER WATERS: Thank you, Mr. Chair.

I'd like to start off with Mr. Van Voorhees. How common is it for states not to have a hazardous Class I injection program across the United States? Is that a common thing, or is New Mexico in the -- sort of odd man out, so to speak?

MR. VAN VOORHEES: In most cases where states have Class I -- you mean where a state has Class I authority, but does not allow hazardous waste injection wells?

Because there are a number of states that don't have Class I programs because frankly they don't have the geology to be able to conduct those kinds of operations.

There are a limited number of states that have Class I -- has Class I programs, but do not allow Class I hazardous waste injection wells. There are only about two of them, I think, two or three. The vast majority of the states with Class I injection well authority allow both Class I hazardous and nonhazardous

Page 98

injection wells.
COMMISSIONER WATERS: Thank you.
Mr. Gutierrez, you mentioned that you have to have excess capacity in your reservoir where the waste is going. The reduction of the water and subsequent increase of the concentration that would come from this, does that, in effect, give additional capacity to the formation to -- you know, additional life for injection if you reduce the water volume?
I'm assuming the pressures have something to do with the capacity, as well, as the more you put into it, the more it has -- it affects the underground geology of it. But does the reduction of the water in volume reduce the mobility of the waste?
MR. GUTIERREZ: Commissioner Waters and Mr. Chairman, yes, absolutely. The whole reduction of the fluid carrying fluid, if you will, for the hazardous constituents, if you reduce that volume, that is what you're looking for. The actual constituents themselves take up an infinitesimally small portion of the reservoir. It's mainly the water.
COMMISSIONER WATERS: Thank you, Mr. Chairman.
CHAIRMAN FLYNN: All right. Commissioner Dominguez.

Page 99

COMMISSIONER DOMINGUEZ: Thank you, Mr. Chairman.
I'm going to utilize Exhibit 8 from Mr. Van Voorhees' testimony, so I assume that I'll direct this to you.
Under 20.6.2.5321 -- that's the modifications, exceptions, omissions section -- under Section D, it's the following provisions of 40 CFR, Part 144, Subpart F are omitted. And you may have covered this, but that would be on page 7 of Exhibit H, under Section D.
MR. VAN VOORHEES: Yes.
COMMISSIONER DOMINGUEZ: You may have covered this. But for clarification, those three sections, why were those omitted?
MR. VAN VOORHEES: Okay. Give me a moment. You're on page 7?
COMMISSIONER DOMINGUEZ: Yes, sir.
MR. VAN VOORHEES: Under B or --
COMMISSIONER DOMINGUEZ: Under D, a quarter of the page down.
MR. VAN VOORHEES: Bear with me for a minute. Let me look at them and see what they -- those specific provisions in Part 144 relate to EPA's authorization of state-required mechanisms for financial

Page 100

assurance.
Or in the case of 65 -- in the case of Part 66, it allows the State to assume financial responsibility. And I think, based on consultations with OCD, it was decided that those are things that the State didn't want to have to meet, so they're just additional mechanisms beyond those that are already provided. And because the regulations provide a sufficient variety of financial assurance mechanisms already, it was deemed unnecessary to include those additional things.
Those are in the EPA regulations in order to give states additional authority to do things beyond what EPA has done. So in this case, it's not any less stringent than what EPA is doing because it simply authorizes the State to do something that the State has chosen not to exercise the opportunity to do.
COMMISSIONER DOMINGUEZ: Okay. Thank you very much.
Mr. Chairman, that's all I have.
CHAIRMAN FLYNN: Commissioner Dawson.
COMMISSIONER DAWSON: The questions I have -- I wanted to ask Mr. Gutierrez: Are you going to be the consultant for the proposed well, or do you know?
MR. GUTIERREZ: I don't know.

Page 101

COMMISSIONER DAWSON: Okay. I had some questions about the well. But since you're not sure if you're going to be the consultant or not, I won't ask those questions. Those questions will be asked when the permit goes to the OCD. So thank you.
CHAIRMAN FLYNN: Commissioner Vigil.
COMMISSIONER VIGIL: No questions.
CHAIRMAN FLYNN: Commissioner Pattison.
COMMISSIONER PATTISON: Yes. Thank you, Mr. Chairman.
I believe this will probably be for Mr. Salvarrey. The reuse projection is 39 percent savings, so I assume that all of that is achieved by reuse.
MR. SALVARREY: Yes. The majority of that water is going to be by reuse, either by reusing water we're presently disposing through effluent or we're reusing streams that have been land applied. We would recover that water and then use it in the refinery.
COMMISSIONER PATTISON: Okay. So as I interpreted the advantage of a Class I injection well, you can keep reusing it until the concentration of the contaminants is -- you can't get any more use out of it?
MR. SALVARREY: That is one of our

Page 102

restraints right now. Our effluent cannot exceed certain concentration levels. As a result, we cannot recover some of the water that's being presently disposed of.

COMMISSIONER PATTISON: Okay. So the reason you need this ability to inject that you don't have now is so that you can continue to reuse more than you can now?

MR. SALVARREY: Yeah. And our goal is always, first of all, to minimize the intake of fresh water, as well as minimize the disposal of effluent waters. That helps the refinery and helps the community. So yes, that's correct.

COMMISSIONER PATTISON: Thank you very much. Thank you, Mr. Chairman.

CHAIRMAN FLYNN: Commissioner Sayer.

COMMISSIONER SAYER: Thank you, Mr. Chairman. I just have a few questions. And I'm not sure who the best person witness to answer these will be, so you'll just have to jump in where it's relevant.

The first question, and as I recall, this might be Mr. Gutierrez, but I think you testified that in New Mexico there was no migration -- historical migration from UIC wells. I'm wondering if you know -- maybe you don't -- but across Region 6 of migration in

Page 103

UIC wells.

MR. GUTIERREZ: I'm not specifically aware of any instances of contamination of fresh water from UIC wells in Region 6. Maybe Mr. Van Voorhees would be able to further provide info on that.

MR. VAN VOORHEES: Yes. I'm not aware that any have occurred since the UIC regulations were in place. There are examples of that. The State's Region 6 are some of the longest users of underground injection technology. So there are some specific examples that were looked at in some of those studies and reports to Congress that I mentioned, but those all predate the 1980 regulations.

COMMISSIONER SAYER: Thank you.

A follow-up question. I believe this might be for Mr. Gutierrez, as well. You had a table -- and this is more of a curiosity question. But I think you had five Class II nonhazardous or other -- or Class I -- sorry -- Class I nonhazardous wells in New Mexico?

MR. GUTIERREZ: Yes, sir.

COMMISSIONER SAYER: If I understood the testimony correctly, two of those are here at Navajo?

MR. GUTIERREZ: No. If you -- I'd like to maybe refer you to Table 4 in my written testimony. That provides you the details on all five of those

Page 104

wells. And basically, three of them are Navajo wells, and then there is one additional one in Lea County and then two in San Juan.

COMMISSIONER SAYER: Okay, thank you.

Another question. I surveyed just a sampling of other states that have primacy here in UIC matters and that have Class I wells, hazardous Class I wells. I noticed that there was -- one difference I noticed was we have cemented a date, July 1st, 2015, for the CFRs that exist, the federal CFRs.

So as I read -- and this is part of the amended petition -- "Except as otherwise provided, the federal regulations set forth by the EPA in 40 CFR, Section 144.14, through July 1, 2015, are hereby incorporated by reference."

So I'm wondering why we decided or why you decided to cement a date certain in there. If I'm missing something, help me out there.

MR. VAN VOORHEES: Those are the regulations that are currently in effect. If EPA makes revisions to its regulations, there is a process that's set forth for states to then follow up and adopt revisions into their regulations, if that's necessary. There's a specific procedure prescribed for that.

And in order to be sure about exactly what

Page 105

language is being used, it's important to sort of fix an as-of date so that it's the ones currently in effect.

COMMISSIONER SAYER: Are you aware of -- this is moving a little bit probably beyond your testimony. But are you aware of conversations, discussions, regarding the federal CFR, looming changes in the UIC rules?

MR. VAN VOORHEES: I'm not aware of any looming changes, any changes that are currently planned for the UIC regulations with respect to Class I injection wells.

COMMISSIONER SAYER: Okay. And Mr. Van Voorhees, this is probably a question best addressed by you.

As I was reviewing the CFRs, can you help me understand the relationship, if there is one, between 40 CFR 144.12 and 40 CFR 148? 148.20 I believe you discussed. That's the no-migration petition regulation that talks about no migration and the 10,000-year standard.

MR. VAN VOORHEES: That's correct. That's what's set forth in Part 148.

COMMISSIONER SAYER: And 144.12, I guess I'm not sure -- I'm clearly missing something, so I'm looking for some help here.

Page 106

As I look at the amended petition -- and this is page 15 of the amended petition. So it says here under 20.6.2.5301, general program requirements for wells injecting hazardous waste, "Except as otherwise provided, the federal regulations set forth by the EPA in 40 CFR 144.14."

And as I looked right above there at 144.12, I believe I'm seeing a no-migration standard articulated in 144.12. I have that here, if you want it.

MR. VAN VOORHEES: No, I'm familiar with it. The no-migration provision in Part 148 is specific to the migration of hazardous constituents.

The no-migration provision in 144 has to do with the injected fluid itself, and the regulations are based on preventing movement of injected fluids into or between underground sources of drinking water or protected formations.

The two provisions are not identical. In other words, the no-migration provision in 144.12 is not sufficient to cover what's required by 148 -- in Part 148.

And I know that to be true because I actually made that argument to the U.S. Court of Appeals for the District of Columbia Circuit, and you'll see a reference in my testimony to the case. That was NRDC versus EPA

Page 107

in which the Court, in the course of its decision, said, "No, that's not already present in the regulations. And therefore, there needs to be an additional requirement that EPA" -- and they upheld EPA's additional requirement in Part 148.

COMMISSIONER SAYER: So is there a reason -- again going back to the language in the amended petition, is there a reason not to incorporate by reference beginning at 144.12, instead of --

MR. VAN VOORHEES: I think that's already in the UIC regulations for New Mexico. That's already covered because that would have to apply not only to Class I injection wells, but all underground injection wells. That provision is -- had to be there and be at least as stringent as the federal provision for New Mexico to have gotten primacy in 1983, which it did.

COMMISSIONER SAYER: And the last question: Are any of the witnesses aware of a circumstance where the financial assurances that exist in the CFRs turned out to be insufficient when it came to closing a well, plugging and abandoning a well, and let's say that the operator was no longer in the picture and the financial assurances that were in play weren't sufficient to plug and abandon that well?

MR. VAN VOORHEES: I'm not aware of any

Page 108

specific case of that type.

COMMISSIONER SAYER: Thank you. That's it, Mr. Chairman.

CHAIRMAN FLYNN: Thank you. Okay. I have a couple of questions. While we're on the financial assurance topic, I'd like to -- I'm not sure who the right person to ask is. I suspect Mr. Van Voorhees might be the most qualified witness.

I couldn't see anywhere in the record where the federal financial assurance requirements were provided. Am I just missing something in the record? I'm familiar with 5320, where we've lined out the modifications we made to the federal reg on the financial assurance requirements.

MR. VAN VOORHEES: The financial assurance requirements for hazardous injection wells are in Part 144 of the regulations, and I believe those are incorporated in the proposal.

COMMISSIONER FLYNN: Yeah, they're at 5320 and 5321. I didn't have a copy of Part 144 in front of me.

MR. VAN VOORHEES: That's where they come from. Those are set out in -- I think it's in Subpart H of Part 144.

CHAIRMAN FLYNN: I'm looking at the

Page 109

answer in front of me. It's Subpart F.

I guess can you just kind of walk me through -- I'm familiar with financial assurance requirements, particularly for our agency, dealing with mines. I'm really just unfamiliar generally with what that entails. I assume it's for the plugging and abandonment of these wells.

But if you could just walk me through, in closure, what financial assurance in the federal reg is actually encompassing with the hazardous waste injection well.

MR. VAN VOORHEES: For hazardous waste injection wells, it has to do with the plugging and abandonment of the well and with the post closure monitoring, so that the financial assurance -- you have to provide an estimate of what it's going to cost for a third party to do these steps if the operator defaults.

It's intended to cover what would be required to essentially plug and secure a well after injection had been completed. It also has to cover the post injection monitoring period to demonstrate that there has been adequate, you know, calming down of the -- a return to equilibrium, if you will, for the injection formation.

CHAIRMAN FLYNN: How long would that post

Page 110

closure monitoring typically occur in this type of situation? I know for groundwater, we're talking decades, usually.

MR. O'BRIEN: Actually, in my experience, there have been a limited number of Class I hazardous waste injection wells that have actually been closed, but I think it is a period of less than five years.

CHAIRMAN FLYNN: Okay.

MR. VAN VOORHEES: Once the injection pressure stops, things calm down pretty quickly.

CHAIRMAN FLYNN: And we're obviously well below the groundwater of the aquifer. I'm a lawyer, not a scientist or an engineer, so I apologize for my lack of technical prowess here.

I don't see this covered in the testimony of the Energy and Minerals' witness regarding the financial assurance that's in the proposed regulation. Did I miss something, Mr. Goetze? I know you've worked together with the witnesses.

MR. GOETZE: I will be providing testimony later. But we did talk with these folks, and we looked at other states as far as what they asked for. So we based it upon prior experiences, especially Texas and Wyoming.

CHAIRMAN FLYNN: Great. I appreciate

Page 111

that. I was going to -- I was basically asking if I should ask you later, but I'll be sure to put that on the record when you've been sworn in.

We work well with Energy and Minerals in the mining context. The Environment Department doesn't have financial requirements by rule in the same manner that Energy and Minerals does, so I appreciate that testimony.

We'll move on. Mr. Van Voorhees, can you just walk me through what exactly the program revision would entail? Assuming the rule is adopted, who submits this? Would this be the Oil Conservation Division submits the program revision to the EPA? What's the criteria the EPA considers in determining whether or not to approve the program revision?

MR. VAN VOORHEES: It's submitted -- for initial primacy, it's actually submitted by the Governor. And in this case, with the expansion, it's not clear whether this would be treated as a major or minor program revision.

So it would be submitted. EPA Region 6 would review it and determine which additional procedures need to be followed. But it could be as simple as having them approve it as an expansion of the existing Class I program.

Page 112

CHAIRMAN FLYNN: So this would be done by the Governor or --

MR. VAN VOORHEES: And there could be a public notice and hearing on it, depending on what they determine.

CHAIRMAN FLYNN: Are you familiar with -- is this an administerial action by EPA, or are they determining whether it's as stringent as the federal requirements? I'm just trying to understand. My predecessor is currently the Region 6 administrator, so I'm trying to figure out what the basis of his decision would be when we make this program revision.

MR. VAN VOORHEES: Essentially it's going to be that determination. But as I say, I'm not involved directly in that process of conversations with EPA, so I can't tell you how they will decide it needs to be followed.

But I know that there are procedures in place that allow them to consider it to be a minor program revision or a major program revision. And depending on what decision they make about that, that's how it would proceed through the process.

CHAIRMAN FLYNN: Maybe this is a question that I might direct to Energy and Minerals when their witness is up.

Page 113

But with that, I don't have any other questions of these witnesses. Do any other Commission members have any additional follow-ups while we have the panel present?

COMMISSIONER DAWSON: I have one question. Thank you, Mr. Chairman.

Mr. McKee, do you know if you have identified a proposed location for the well?

MR. McKEE: At this time we're still surveying different areas and have not identified a firm location at this time.

COMMISSIONER DAWSON: Okay. Thank you.

CHAIRMAN FLYNN: Commissioner Dawson is trying to get your work done in advance.

COMMISSIONER HUTCHINSON: I'd like to follow up on that.

Are there any additional wells anticipated, other than this one that you've been talking about?

MR. McKEE: At this time, we're only pursuing one additional well at this time.

COMMISSIONER HUTCHINSON: Thank you.

CHAIRMAN FLYNN: I would just compliment the counsel and the witnesses. I really appreciate the manner in which the information was presented, not just verbally, but I thought the packet that we received was

Page 114

extremely helpful. I really liked a lot of the -- there was clearly lot of effort, but in particular, the crosswalks between the proposed regulation deviations from federal rules. I really -- we typically don't remark on how well the information was presented, but I felt it was warranted in this case. I found it to be extremely helpful and it made my job much easier, so I compliment counsel and the witnesses for the presentation of evidence.

MR. MARTELLA: Thank you, Mr. Chairman. It's not a simple issue to be addressing, and we very much appreciate the thoughtful questions and how prepared everyone was today and for coming to Artesia and being available for this. It really means a lot to the petitioner and to Navajo.

If I may, with respect, there are just two follow-up questions that may be able to help. And we can put supplemental information in the record, if helpful.

HEARING OFFICER CHAVEZ: One moment, if I may.

Mr. Chair, members of the Commission, thank you. Before we do that, I want to go to any public comments for cross-examination of the witnesses before we excuse them. And let me remind you that it would be

Page 115

subject to their testimony.

Any members of the public that wish to have any questions for the panel at this time?

All right. Seeing none, I'd like to go back to the petitioner for their brief closing.

CLOSING STATEMENT BY MR. MARTELLA

Thank you very much, Mr. Hearing Officer.

Commissioner Longworth, you had asked about the priority dates for the Navajo Refinery. We've been able to check with some sources, and the priority dates date back to a combination of 1905, 1909, 1911 and 1930. I hope that's helpful. And we could put further information into the record if you'd like some substantiation of that.

And Mr. Chairman, you were correct. We did not include the CFR text in the record itself. If you think that would be helpful for the record, we would be happy to supplement the record with the financial assurance CFR provisions to have a complete record. We can do that probably within the next hour or so.

CHAIRMAN FLYNN: If you can do it -- I'm not going to require you to do it. But if you could do it before the close of -- I anticipate we'll be able to close the record today and hopefully get into deliberations. I certainly don't want to keep the

Page 116

record open. We have enough time today to start deliberating. If you can supplement the record, I'll leave that option up to you.

MR. MARTELLA: We'll try to get something printed later.

HEARING OFFICER CHAVEZ: Petitioners, anything further?

MR. MARTELLA: Nothing further.

HEARING OFFICER CHAVEZ: I'd like to excuse the witnesses.

Mr. Chair, members of the Commission, I would propose we break for an hour and come back with the start of the Oil Conservation Division's case. And I think we can probably get this wrapped up and get you out of here pretty soon. We're going to go ahead and go off the record.

CHAIRMAN FLYNN: What time should we be back at?

HEARING OFFICER CHAVEZ: Let's plan on starting at 1:00 on the dot.

Thank you. Let's go off the record.

(A lunch recess was taken.)

HEARING OFFICER CHAVEZ: Back on the record. Before we proceed with the case, we've got one final matter of housekeeping. I'd like to recognize the

Page 117

petitioner for one final matter.

MR. VISSER: Thank you, Mr. Chairman. Mr. Chairman, thank you for the fair point about having the federal CFR text as part of the record. We were able to provide the relevancy of our text, so we will include this as part of the record, with your permission. And we've also assembled a binder of the various exhibits that have been referenced regarding the witnesses, as well.

And Madam Court Reporter, we can work with you in the best way to facilitate you having this as part of the record, as well.

HEARING OFFICER CHAVEZ: Any objection on that?

MR. BRANCARD: No objection.

HEARING OFFICER CHAVEZ: So admitted.

(Exhibit 6 was admitted.)

HEARING OFFICER CHAVEZ: Okay. I'd like to now recognize the Oil Conservation Division. You may proceed.

MR. BRANCARD: Thank you, Mr. Hearing Officer.

OPENING STATEMENT BY MR. BRANCARD

Once again, my name is Bill Brancard. I'm the General Counsel of the Energy, Minerals and Natural

Page 118

Resources Department. Also here is Associate General Counsel Allison Marks. We are here today representing the Oil Conservation Division of our agency, which is a constituent agency of the Water Quality Control Commission.

In general, I think our position is that we support the proposal as submitted by Navajo Refinery. We'd like to thank the Navajo Refinery and their attorneys for working with us. And by "us," I mean not just our agency, but also the New Mexico Environment Department, in providing us early drafts of their proposal prior to the rulemaking. Taking into consideration a lot of the questions and concerns we had with earlier drafts, they made significant changes to earlier versions, and I think it is much improved.

And in the end, we asked for a few additional requirements to be added on that, and Navajo Refinery was quite willing to work with us on those requests. So we support the proposal submitted by Navajo Refinery.

Just to give a little bit of background, I was trying to do this through my questioning of Navajo's witnesses. The OCD deals with what we call UIC wells in two different manners. The EPA, through the Safe Drinking Water Act, has granted primacy to the State of New Mexico under two separate lines. One is primacy for

Page 119

Class I, III, IV and V wells, which has been granted to the Water Quality Control Commission, and that's the regulations that you're looking at here today.

The Water Quality Control Commission, in a document some 25 years old, I believe, delegated its authorities over the various entities that are subject to Water Quality Act regulation to two constituent agencies, the New Mexico Environment Department and the Oil Conservation Division.

The Oil Conservation Division largely deals with what we call upstream oil and gas facilities, refineries, processing facilities. That is where we deal with Water Quality Act issues. That is where we issue Class I UIC wells and some Class III UIC wells, and those are the wells that are being discussed here today.

In addition, the U.S. EPA has granted specifically to the Oil Conservation Division primacy for Class II UIC wells, and that is regulated under the Oil and Gas Act and under the Oil and Gas Agency regulations which have been approved by the EPA.

So as the witness Mr. Van Voorhees mentioned earlier, you can actually find in the Code of Federal Regulations where EPA has done a Class II approval and Class I, III, IV and V approval for the State of New

Page 120

Mexico, and it is that approval process that we're dealing with here today.

The Chairman asked a question about the process, and where do we go from here with the EPA. Obviously, since this is a primacy program, we have to -- by "we," I mean literally the Water Quality Control Commission has to submit a package to the U.S. EPA for approval of whatever changes you make to the UIC rules.

And that package is set out in the federal regulations. And what is required in there, along with a description of the rules and the process that the State took, we have to get a statement of authority from the Attorney General's Office and other documents that have to be submitted.

As Mr. Van Voorhees indicated, EPA, when it reviews a submittal, can go two different ways. They can review it as an administrative approval. In other words, it's a revision to an existing program that they don't consider substantial, and that can be approved administratively by the EPA regional administrator.

If EPA considers this change to be a substantial revision, it will have to then go up to EPA D.C., and it will have to be noticed in the Federal Register. They will have a comment period and a public

Page 121

hearing potential for that, and then the decision will be made by EPA D.C.

Our agency and the New Mexico Environment Department have had discussions both with EPA Region 6, and they've brought in folks from EPA D.C. to discuss this issue. We have tried to make the point that we think because we already have Class I hazardous waste -- I mean a Class I nonhazardous waste well authority, that this is not a substantial change.

The indication at this point is that EPA does, in fact, view this as a substantial revision, so it may have to go through a whole public notice process on the federal side, in addition to any approvals you all would make on the state side.

That's just sort of a bit of an understanding about where we are in that process. I don't think they're 100 percent on that decision, but it seemed like they were pretty close to calling it a substantial revision.

As part of our agreement with EPA, we have provided to them information about the rule proposals as we go on here, so they are kept informed about the fact that there has been a petition to the Water Quality Control Commission, et cetera.

Their process, as they indicated to us, is

Page 122

they will not do a formal review until the Commission has adopted a rule. And then they will review it largely, I believe, as, Mr. Van Voorhees said, to determine whether it is substantially supporting the federal regulations. So that's -- I'm trying to answer your question, Mr. Chairman.

CHAIRMAN FLYNN: I appreciate that. What's the statement of the authority from the Attorney General's Office? Can you explain what that --

MR. BRANCARD: The State actually does that, I think, for almost every primacy program. And I think largely the agency in charge, say the Environment Department, will draft something for the Attorney General's Office that says, you know, "These rules, if you adopt -- if you adopt the RCRA rules and the Hazardous Waste Act, et cetera, and you want to get primacy there, the Attorney General's office will send in a letter that says, "We've reviewed the package, and it has been adopted in accordance with state law." And they have authority under state law to do this.

CHAIRMAN FLYNN: But that's for a primacy determination, which this is -- we already have primacy.

MR. BRANCARD: Right. Because it's a modification to a primacy program, they want an Attorney

Page 123

General's statement along with that.

I actually had -- in the course of another discussion, I brought this up with the Chief Deputy Attorney General and mentioned that we would be needing this. She did not see any problem. She thought the AG's office does this on a regular basis, and she didn't see any problem providing that letter from the Attorney General's Office.

CHAIRMAN FLYNN: That means to us what?

MR. BRANCARD: That we will simply draft a letter for them and submit whatever information they need, and they will sign a letter to be sent with the package to EPA.

CHAIRMAN FLYNN: Okay. I'll withhold on speaking my mind on the Attorney General's Office at this point. I think the Commission is well versed in the political shenanigans that we see on a regular basis from the Attorney General's Office. I assume you could keep them at their word. But given what we've seen, whenever something becomes a political issue, whether it's our old Attorney General or our new Attorney General, they seem more interested in running for another office than doing the job that they currently have. I don't share your same confidence in our Attorney General's Office, but I really hope to be

Page 124

proven wrong in that case.

MR. BRANCARD: Mr. Chairman, I agree with you.

CHAIRMAN FLYNN: There's a reason we don't have an Attorney General representing this Commission.

MR. BRANCARD: And the Chief Deputy AG is quite aware of the situation with this Commission. And I'll --

CHAIRMAN FLYNN: What's that situation?

MR. BRANCARD: That we don't have the Attorney General's Office representing the Commission.

CHAIRMAN FLYNN: Yeah. We fired them.

MR. BRANCARD: So like you, I will hopefully rely on their word that they will come through with this.

CHAIRMAN FLYNN: Like I said, I question whether, given the fact that we have primacy, why we would need the Attorney General to say what we already have.

MR. BRANCARD: This is in the federal regulations. Any time you modify your program, you have to submit a package to the EPA, and one part of the package has to be a letter from the Attorney General.

CHAIRMAN FLYNN: Is this an administerial

Page 125

duty on behalf of the Attorney General, or is this a discretionary function of the Attorney General's Office?

MR. BRANCARD: I would think it's pretty administerial.

CHAIRMAN FLYNN: I would, as well. They don't have the technical expertise. Do they have any staff versed in any technical issues related to this petition?

MR. BRANCARD: Literally, it's -- you know, did the Commission adopt this rule, basically would be what they would be saying. Did the Commission follow its process?

CHAIRMAN FLYNN: I'm sure you can understand my skepticism, given what we've seen over the past four and a half years now from the Attorney's General's Office. I broke my own rule by making my position known. At least it's saved for posterity.

MR. BRANCARD: I'd also like to address a question that Commissioner Sayer brought up about the date of the federal regulations being put into the rule that you adopt.

You know, we have looked it up. And under the New Mexico Administrative Code regulations -- and this is really, I think, for the Commission to decide and the Commission's counsel to decide, but the New

Page 126

Mexico Administrative Code regulations indicate that any time you adopt a federal law by reference, the date of that federal law shall be deemed to be the date of the current version of the federal law and subsequent amendments. Okay?

So if you don't put a date in there, you're basically going to be adopting that rule going forward. If you put a date in there, you've frozen it. So that's really, I think, up to the Commission how you want to do that. That's your options.

CHAIRMAN FLYNN: Yeah. I mean I think we would be interested in what the Energy -- we've confronted this issue on a number of occasions, and I think this is a constant struggle we have for that exact point.

I think as the constituent agency who's joining the petitioners here, I think we would defer to your guidance on how you all want to handle that.

My personal preference would be to allow the -- once we adopt the federal regulation, we would continue to abide by the federal regulation going forward, even if there are changes in that federal regulation, because that would obviate the need to come back to the Commission for a subsequent rulemaking hearing five years down the road, when there are updates

Page 127

in the federal regs. Given that most of the stakeholders we deal with are sophisticated companies and they prefer to follow federal guidance on the issue, it makes it more consistent and easy for them.

I think where we've run into problems in the past is where we have adopted a federal reg, and then we've -- the federal regulation has been updated and the state has been frozen. And we get into a situation where 15, 20 years down the road, there's a pretty significant gap in certain areas between some of our state regs and the federal regs.

Ideally, our state agencies would regularly petition the Commission to update. But that just -- given the limited resources, that's not -- and you would know as well as I do that that's just -- usually it doesn't come up until there's a problem, and then you file a petition.

My preference would be to adopt the federal regulation and allow for updates to the federal regulation and the State continue to abide by the federal regulation going forward. But I'm only one vote, and I would be certainly be willing to defer to the agency on this issue.

MR. BRANCARD: Mr. Chairman, we can't speak for the petitioner in this case, but we would

Page 128

agree with that.

So we're going to have one witness here today, Mr. Phil Goetze. His testimony, which you have received, is fairly brief, so hopefully his testimony will be fairly brief on that matter. So with that, I'd like to start with Mr. Goetze.

HEARING OFFICER CHAVEZ: Please swear in the witness.

PHILLIP GOETZE

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BRANCARD

Q. Sir, could you state your name and address for the record?

A. My name is Phillip Goetze. My business address is 1220 South St. Francis Drive, Santa Fe, New Mexico.

Q. Have you submitted prefiled written testimony in this matter?

A. I have.

MR. BRANCARD: I'd offer to the Hearing Examiner EMNR Exhibits 1 and 2 and provide a copy to the witness.

Q. (By Mr. Brancard) Mr. Goetze, is Exhibit 1 a copy of your resume and Exhibit 2 a copy of your

Page 129

prefiled written testimony?

A. Yes on both accounts.

Q. And could you just very briefly describe your background?

A. I'm a graduate of New Mexico Tech. I am a Registered Professional Geologist. I have 35 years of cumulative experience in regulatory, environmental and oil and gas industries.

As of this date, I am a member of the Engineering and Geological Services Bureau of the Oil Conservation Division in Santa Fe, where I am the UIC technical reviewer, as well as a hearing examiner.

Q. Okay. I just have a few questions for you, Mr. Goetze. Just to generally try to summarize your testimony, does OCD support the proposed rule as submitted by Navajo Refinery?

A. We do.

Q. Do you agree with the testimony of Navajo Refinery that the proposed rule can result in the conservation of water?

A. We agree with that.

Q. Does OCD have the experience and expertise to implement this rule for Class I hazardous waste wells?

A. With current staff and experience, yes, we can satisfy all the requirements.

Page 130

Q. Is there further elaboration on that in your written testimony?

A. We would like to include the fact that we do have the ability to expand upon -- especially with the siting and post closure, that type of experience. We do provide a good background that will satisfy all of these needs and meet the requirements that the EPA has proposed for their hazardous Class I.

Q. In the proposed rule, there are proposed application, renewal, modification and annual fees. Do you agree that these fees are reasonable and appropriate for the scope of the permitting activities that OCD will be required to undertake under the proposed rule?

A. As part of this effort, we looked at other states who had these wells in place, reviewed what their fees were, and developed our rates based upon what we saw currently available with states with similar programs.

Q. Finally, does the proposed rule contain requirements that go beyond the EPA minimum requirements which were requested by OCD?

A. Our proposed -- what we have on the documents exceeds what EPA has. We've expanded it more with some more specifications as far as information about wells and site information. And with that, we also bring

Page 131

consideration to protection of resources, which would not necessarily be reviewed in the current status, namely looking at correlative rights and oil and gas in reservoirs that may be proposed for injection.

Q. Is what you're saying that the rules, as drafted by the EPA, focus on the protection of safe drinking aquifers?

A. Correct.

Q. And in addition to that, when the OCD reviews an injection well application, you're also looking for any potential impacts on existing rights in the hydrocarbon zones?

A. Yes, that's correct. And with that, the level of notification gets much larger. We have the ability under the Class Is, as would be proposed by EPA, would only be notification for surface, with the subsurface considered. We would also be looking at mineral states, as well as operators.

Q. And is that a change that the OCD requested and was approved by Navajo Refinery to provide notice of these applications to mineral rights owners within the area surrounding the well?

A. Yes. These are currently under our rules for the Class II wells, and we requested that they be incorporated with this petition.

Page 132

MR. BRANCARD: Thank you.

Mr. Hearing Officer, Mr. Chairman, I have no further questions of this witness.

HEARING OFFICER CHAVEZ: I assume you want to enter --

MR. BRANCARD: I offer Exhibits 1 and 2 for the record.

HEARING OFFICER CHAVEZ: Any objection?

MR. VISSER: No objection.

MR. MARTELLA: No objection.

HEARING OFFICER CHAVEZ: Seeing none, they are admitted.

(EMNR Exhibits 1 and 2 were admitted.)

HEARING OFFICER CHAVEZ: At this point, I would like to offer this witness for cross-examination from the petitioner.

MR. MARTELLA: No questions, other than to thank the witness for his time today.

HEARING OFFICER CHAVEZ: Thank you.

Mr. Chairman, members of the Commission, any questions for this witness?

CHAIRMAN FLYNN: Commissioner Longworth, do you have any questions?

COMMISSIONER LONGWORTH: Mr. Chairman, not at this time.

Page 133

CHAIRMAN FLYNN: Mr. Hutchinson.

COMMISSIONER HUTCHINSON: I have one.

CROSS-EXAMINATION BY THE COMMISSION

COMMISSIONER HUTCHINSON: Have any other parties expressed interest in this hearing proceeding that you know of?

MR. GOETZE: Commissioner, if other parties, other than the refineries, are the only ones who have any interest in this, per se, we would receive applications at that point there with notification. There may be those parties that may express interest for a site specific application, but not for the general rulemaking.

COMMISSIONER HUTCHINSON: Okay, thank you. That's all.

COMMISSIONER DELFIN: No questions.

CHAIRMAN FLYNN: Commissioner Dominguez.

COMMISSIONER DOMINGUEZ: No.

CHAIRMAN FLYNN: Commissioner Dawson.

COMMISSIONER DAWSON: No questions.

CHAIRMAN FLYNN: This is your chance. This is your guy.

COMMISSIONER DAWSON: You say that your review of this proposal does protect correlative rights. Does it also prevent waste?

Page 134

MR. GOETZE: This also prevents waste.
COMMISSIONER DAWSON: That's the only question I have.
CHAIRMAN FLYNN: Commissioner Vigil.
COMMISSIONER VIGIL: No.
CHAIRMAN FLYNN: Commissioner Pattison.
COMMISSIONER PATTISON: A question was asked this morning about are there any known occurrences of this type of injection well failing. What's your experience?
MR. GOETZE: My experience, since the passage of the rule and primacy with the State of New Mexico, we have not had any incidents of excursion into protectable waters.
COMMISSIONER PATTISON: Thank you.
CHAIRMAN FLYNN: Commissioner Sayer.
COMMISSIONER SAYER: No questions.
CHAIRMAN FLYNN: I just have a couple of quick questions.
I think following on Commissioner Hutchinson -- and it's already in the evidentiary record. But if either counsel or the witness -- but probably either counsel can speak to this.
This was publicized in honestly I think every paper in the state, it seems like. I mean literally it

Page 135

was publicized in the Albuquerque Journal, Carlsbad Current-Argus, Taos News. I think there were at least seven or eight different publications that this was noticed in. Is that correct?
Do either counsel want to speak to that? It's in the record, but I think it would probably be helpful in just explaining the extent of the notice that was provided.
MR. VISSER: Yes, we did. When we wanted to publish this in the newspapers, we looked around the state and tried to provide not only the major newspapers in Santa Fe and Albuquerque, but also all the regional newspapers, just to make sure this was covered by the entire state. We looked all around the state and tried to find representative papers to publish this in.
CHAIRMAN FLYNN: Yeah. Great. Okay. I think I asked you about this before. But now that you're under oath and on the record, just repeating -- and I appreciate your response before. But if you could just briefly describe kind of the coordination and your efforts in order to review the financial assurance requirements, as well as any other authorities that you checked.
MR. GOETZE: For the financial assurance, we looked at programs in Ohio, Wyoming, Texas, Arkansas,

Page 136

and looked at what their requirements and experiences were. So we -- basically, Texas has the largest and the greatest number and therefore the most history as far as what comes with post closure. And we used that as the basis for making our decisions as to what financial responsibility model should be. But again, each will be based on the application as it's received.
CHAIRMAN FLYNN: So I understand why Navajo, the petitioner, would limit the scope of this rule to oil and gas refineries.
Why did the Energy, Minerals and Natural Resources Department limit the scope of this rule to only refineries? I understand there are other industries that would utilize this for metal production, pharmaceutical production and other potential industries.
I guess I'm just wondering, was there a discussion about having this cover more than refineries? And if so, why was the decision made to limit it to simply refineries?
MR. BRANCARD: Mr. Chairman, I can try to address your question. Yes, there was a discussion early on about the scope of this rule. And I think, A, because Navajo wanted to make sure that they had a proposal that would work for them and they didn't have

Page 137

any particular interest in expanding the world of facilities with hazardous waste.
And it also relates to, as I mentioned, the delegation of authority between the OCD and the Environment Department. And once we get beyond refineries into other classes of facilities, those would be now be regulated by the Environmental Department.
So the Environment Department would have to do a whole analysis of do they want to take all of this on? It was sort of decided let's just go ahead with the refineries at this point. If the Environment Department wants to come forward and expand this later on, they would have to do it. And it wouldn't be the OCD regulating those facilities, but it would be the Environment Department under the current delegation of the Commission. So that was one factor.
Again, you know, there might be all sorts of issues if you expand the authority to other kinds of facilities that we really weren't even thinking about, that we didn't really feel the need to address, if we could just focus it on this class of facilities because that's the only need.
I think as some folks have mentioned earlier in the testimony that the State has looked at this authority years and years ago, but there's never really

Page 138

been any interest in somebody having this kind of injection well. This is really the first serious interest that we've had.

So being that there's no other interest, being that we could have all sorts of unintended consequences by expanding this out, we thought we'd better just start with approving it for refineries. The Commission can always come back and re-visit and expand that, if you wanted it to.

CHAIRMAN FLYNN: Fair enough. I think the flipside to that is that additional resources -- there's something to be said for not having to go back a year or two from now and do another hearing. So I think there are resource clearly being balanced on one hand to limit the scope of this.

I would not expect the petitioner to want to apply anywhere beyond there, and that's their prerogative. For us, I think it's a balancing act. And I understand your answer. I appreciate that.

Have you consulted with -- was Secretary Martin involved in the discussion regarding the new fee provisions that are applied in this rule? I assume he's comfortable with this.

MR. GOETZE: He is aware of them, and he's seen the information through the Director.

Page 139

CHAIRMAN FLYNN: Okay. I don't have any other questions.

I would comment that you have extremely impressive facial hair. If you weren't wearing a suit and in this setting, I probably would be scared of you.

MR. GOETZE: Having done hazardous materials, it keeps the respirator off.

CHAIRMAN FLYNN: Thank you very much. I appreciate your testimony.

HEARING OFFICER CHAVEZ: Mr. Goetze, one moment, please.

Mr. Chair, members of the Commission, any other questions for this witness?

COMMISSIONER DAWSON: I have a couple of questions.

Mr. Goetze, thank you. OCD will conduct a thorough review of the proposed hazardous waste well; correct?

MR. GOETZE: When the application is received, we will do a thorough review of it. And we also include, many times, comments from EPA when we have situations where we are outside of our expertise.

COMMISSIONER DAWSON: And they will also review and assure that the financial assurance will be adequate for the closure of the proposed well?

Page 140

MR. GOETZE: They will have input. They will know what we're going to ask for for final -- when the final permit is created, we do again consult with them.

COMMISSIONER DAWSON: And the siting will be -- the well's area of review for the siting or the location of the proposed well will be thoroughly reviewed by the OCD?

MR. GOETZE: Yes, they will.

COMMISSIONER DAWSON: That's all the questions I have. Thank you, Mr. Goetze.

HEARING OFFICER CHAVEZ: Any other questions from the Commission?

Let's go ahead and turn to the public. Anybody in the audience that has any questions for this witness? Seeing none, the witness is excused.

MR. GOETZE: Thank you.

HEARING OFFICER CHAVEZ: Thank you very much. Anything further from OCD?

MR. BRANCARD: That's the entirety of our presentation, Mr. Hearing officer.

HEARING OFFICER CHAVEZ: Thank you very much.

At this point, I would like to take any public comment that has not already been given. Please

Page 141

walk up and state your name for the record.

MS. KLIPHUIS: Good afternoon. My name is Trais Kliphuis. I work at 1190 South St. Francis Drive, Santa Fe, New Mexico.

Mr. Chairman, Mr. Hearing Officer, members of the Commission, again I am Trais Kliphuis. I'm the Director of the Water Protection Division at the New Mexico Environment Department.

The department has worked closely with the petitioner and OCD during the development of this rule. We made comments and suggestions to earlier drafts of the proposal, almost all of which the petitioner adopted and integrated into the proposal.

Throughout the process, our main concern has been to ensure that the proposal rules are protective of groundwater, which I believe they are.

As a constituent agency, we also wanted to make sure that the rules were logically organized, narrow in scope and enforceable and consistent with existing regulations. Working with the agencies, I think the petitioners have developed a set of rules that meets all those requirements.

I would like to commend the petitioner for being proactive in soliciting input from the Environment Department and from OCD, specifically as earlier

Page 142

discussed, the fee section was one that I was very aware of early on and requested a review of. And we worked carefully, and we were happy with the resolution on that.

We have no suggested changes to the rule as it stands now and recommend that the Commission adopt the proposal as written. Thank you.

HEARING OFFICER CHAVEZ: Thank you. Is there any other public comment at this time? Seeing none, before we close the evidentiary record, anything further from the Commission?

Okay. I would like to thank both parties for their professionalism and the Commission for their time. At this point, I would like to officially close the evidentiary record. Thank you.

CHAIRMAN FLYNN: Okay. Thank you, Mr. Hearing officer. I think at this point -- we've publicly noticed the hearing. And in the public notice, it provided that we can immediately begin deliberations. I would propose that -- we're here; it's 1:30; we've got a lot of time left in the day -- that we would proceed into deliberations or take a very short recess and then proceed into deliberations. But I would ask what the pleasure of the Commission is in that regard.

COMMISSIONER WATERS: A short break.

Page 143

CHAIRMAN FLYNN: Okay. So why don't we take a short recess, a 10-minute recess, and then immediately begin deliberations? Thanks.

(A recess was taken.)

(Whereupon the Commission entered into deliberations.)

CHAIRMAN FLYNN: At the outset, I just wanted to offer a couple of items for the sake of allowing our court reporter to do her job and create a clean record. If we could make sure that we speak one at a time while we're deliberating and speak -- I'm probably saying this more for myself, just to remind me, more than any of you. But she asked me to remind you that she's recording this.

Commissioner Dominguez has the gavel. He's ready to wield it, if necessary.

Because there was public notice and there is no opposition, we are moving right into deliberations. At this point, the record is closed. Witnesses and counsel are not available for comment or follow-up questions.

If there is an item that requires reopening of the evidentiary record in order to ask for additional input and information, then we can do that, if necessary. We generally try to avoid that, but that is an option that we have available to us.

Page 144

So with that, why don't we begin the festivities? Commissioner Waters.

COMMISSIONER WATERS: Thank you, Mr. Chairman.

I think one thing that I do want to state right from the start, one thing that always impresses me about this community, and it's a great credit to the community and the businesses here, the way that they work together to solve major problems. So I want to commend both the petitioner and the community. It's a credit to the State of New Mexico. If all of the communities in New Mexico and their businesses were as close as Artesia is with their businesses, it would be a much better state, I believe.

In looking at what we have in front of us, we have something that's going to preserve water. It's going to assist the community in meeting a need that they have to have. Artesia is a growing community. It's one of the strongest growing communities in the state right now. They need the water.

And at the same time, we have to protect the environment. And according to the witnesses earlier, this definitely further immobilizes the waste when you put it underground. I think it's a win-win proposition, and I'm certainly in favor of anything that's a win-win

Page 145

that will help the community out and protect the environment at the same time.

CHAIRMAN FLYNN: Thank you. Any other comments, questions? Yes, Commissioner Hutchinson.

COMMISSIONER HUTCHINSON: I would just like to follow that up. In my 15 years' previous experience on the Water Quality Control Commission, I haven't had the experience of having hearings like this. And the one previous, where we had groups coming together for a settlement, it's very refreshing, and it seems to take a lot of pressure off of the Commission.

I don't know many hours Eddie and Larry and myself and others sat in on hearings where we had the same issue trotted out before us in multiple statements. I would like to echo your statement, Commissioner. We really appreciate the effort that went into developing the proposed rule and the effort of presenting the evidence to support it. Thank you.

CHAIRMAN FLYNN: Commissioner. Vigil.

COMMISSIONER VIGIL: I would like to echo those comments. I've sat on this Commission for 13, going on 14 years now, and I've never seen a hearing go so smoothly and be presented so thoroughly with no opposition. I mean you always have somebody that's going to oppose something that you're trying to propose

Page 146

to them. Like I said, it just goes to show that it can be done.

I want to commend the parties, both parties, for the thorough hearing and the Hearing Officer and everyone concerned. Thank you very much.

CHAIRMAN FLYNN: Yes, Commissioner Pattison.

COMMISSIONER PATTISON: Thank you, Mr. Chairman. The fact that Navajo would save 39 percent of the water they now use is amazing. And I always try to put these things in my own mind in the simplest form, especially when I need to answer questions from my wife about, "What are you doing in there?" Of course she's had 61 years' experience in asking me those questions on engineering and other cross relations, so I have phrased this, and it worked.

To conserve this amount of water, the reuse is increased greatly if Class I hazardous injection is available. And it's simple. We can't help but support this issue, and that's why it doesn't have any opposition that we're aware of.

So Mr. Chairman, I believe we have our work cut out for us, and we can take care of the issues very easily.

CHAIRMAN FLYNN: Commissioner Dawson and

Page 147

then Commissioner Longworh.

COMMISSIONER DAWSON: In our reading of the EPA Class I underground injection control program study of the risks that was written in 2001, in my reading, it said this is the best way to dispose of the hazardous waste in a deep underground injection well.

There's confined layers. The wells are monitored closely both up above ground and downhole for -- you know, the pressures are monitored continuously. The siting of the wells is very closely monitored and reviewed by OCD staff, and the application is thoroughly reviewed. The casing strings within the wells are adequately cemented in, and they're using noncorrosive casing materials that are nickel plated, and the cement strings are circulated throughout the well.

There are fluids within the well that are -- the pressures are monitored with those fluids. There is monitoring of the well. You know, we're going to require the operator or the petitioner to pressure test these wells yearly. We're going to have -- they're going to present models on these wells as to where these fluids go.

All the wells that could be conduits to drinking water sources will be thoroughly reviewed, and

Page 148

we will assure that they do have adequate casing strings within those wells or they have been plugged and abandoned properly.

These wells are placed in areas where there's not any hydrocarbon production in the zone where the injection occurs. So just to assure that, you know, these fluids do not migrate from the formation that they are being injected into, the area of review of these wells and the offset owners will be notified, and it will be thoroughly reviewed. The application will be thoroughly reviewed before the permit is issued.

My feeling is this is the best way to dispose of hazardous waste. And you know, maybe someday, if these hazardous wastes are disposed of in formations that are confined and they're not migrating out of the formation, then someday maybe we can take that water back out. With the treatment technologies that are coming on line today, there's new treatment technologies coming every day to clean up water. And someday they may be able to take that water back out and clean it up to where you can drink it.

So I think it's in the best interest of the State and the Water Quality Control Commission to approve this proposal.

And I know that when Navajo comes in with the

Page 149

application, that they will be very thorough. And I want to thank them for being thorough and hopefully communicating with both the New Mexico Environment Department and the OCD. These prehearing meetings with the agencies, I think, are very important, and I think it's a great way to thoroughly review these types of wells and injection permits. And again, it's in the best interest of the State, so I'm in favor of it.

Thank you.

CHAIRMAN FLYNN: Thank you, Commissioner Dawson.

Commissioner Longworth.

COMMISSIONER LONGWORTH: Mr. Chairman, I agree with all the previous comments. I just wanted to kind of jump off of Commissioner Pattison's comment.

You know, we're talking about conservation here in the sense of having -- extending our supplies. And I think that it is crucial in this basin, the Pecos Valley Basin, since it is under a United States Supreme Court decree with regard to our compact obligations, that we take every opportunity within reason, and along with the technical information that's been provided, that you know, this is the best way to go.

We're furthering our ability to have economic enhancement and maintain our ability to be in compliance

Page 150

with the United States amended decree, and that's a critical thing for the State of New Mexico. Thank you, Mr. Chairman.

CHAIRMAN FLYNN: Okay. I want to also just quickly compliment -- this is what we've been trying to get to as a Commission certainly since I started, was to a level of professionalism that, quite honestly, just did not exist before this board and Commission until very recently, where we have counsel presenting very high-quality work.

I really appreciate the work the Navajo Refining did, the petitioner in this matter. It has been stated by all the Commissioners. To really work with the agencies up front and to respond to those concerns, I think the fact that we were able to present a case demonstrating how -- the areas where you have agreed to a rule that's more stringent than what the EPA currently requires and the testimony from the Energy and Minerals Department confirming that, as well as from Ms. Kliphuis' public comments from the Environment Department, indicates your willingness to really work with the State to come up with a proposal that would work with the Commission.

So I really appreciate the professionalism of the petitioner. I'm extremely impressed with the work

Page 151

that clearly occurred behind the scenes by the State agencies involved. So I thank Mr. Brancard and Ms. Marks, as well as Mr. Goetze, your witness.

Really this is where I think, as a Commission, we've been wanting to get to, to being a Commission that was professional, where the advocacy was at an extremely a high level and where the parties were interacting with each other in a manner that's respectful and worthy of the citizens of Artesia and our state. So I really appreciate that.

I also once again thank the whole Commission for traveling to Artesia. We've made an effort to be more responsive to the public. The Navajo Refinery is in this town. The citizens who would be impacted by this proposal live here. The men and women who work at the facility live here or in this area. So I really appreciate my fellow Commissioners for making -- I know for a lot of you, it's pretty much the same drive, whether you're coming here or going to Santa Fe, but I do appreciate the effort of the Commission.

We can't do our job if we just sit in Santa Fe and aren't responsive to the interests of the whole State. We represent the whole State of New Mexico, so I really appreciate all of your effort.

Mr. Chavez, I think you've done an

Page 152

outstanding job in this hearing. There were a number of Commissioners that approached me during breaks complimenting you on your outstanding work.

And Mr. Jackson, you always do a great job. So I really appreciate the work that went into this hearing.

I have a question. And I think we may need to open -- very briefly reopen the evidentiary record in order to have it answered. Because we're deliberating on the record and we're not doing written submissions of proposed findings, I want to make sure that the motion to approve is using the proper version of the rule.

I've been looking at the April 30th Second Amended Petition, but I believe Exhibit B to Robert O'Brien's testimony that was filed on June 15th, 2015, has a proposed water conservation rule attached to it. I just want to make sure that we have the correct rule in front of us as we make a motion to approve the petition.

So I would move the Commission to -- I'm going to move to reopen the evidentiary record in order to inquire of counsel to make sure that we have the right rule before us before we make a motion.

COMMISSIONER HUTCHINSON: Second.

CHAIRMAN FLYNN: I've got a second from

Page 153

Commissioner Hutchinson. All in favor say aye.

Any opposed?

(Whereas the hearing was reopened.)

CHAIRMAN FLYNN: I promise I'll keep it short. We're back on the record. Counsel, you've heard my question. I just want to make sure we're using the correct -- I don't know if there's any differences between Exhibit B, attached to Mr. O'Brien's testimony, and the Second Amended Petition, which I believe was filed on April 30th of this year.

Can you please just tell me which version of the rule is the final version that the parties have agreed upon?

MR. MARTELLA: Thank you very much for the great care in asking us that question. There is an important distinction, and the answer is it should be the June 15th version, which is Exhibit B to the O'Brien testimony.

And as we discussed briefly, there were a couple of typographical errors we fixed in there. But there was one substantive change which is significant. Mr. Brancard may want to talk about it.

But it goes to the no-migration petition and deferring that to EPA versus the State, which is consistent with every other state. So thank you again

Page 154

for the clarification, but it is the June 15, 2015, version which is Exhibit B to the O'Brien testimony.

CHAIRMAN FLYNN: Mr. Brancard, do you agree with that?

MR. BRANCARD: Thank you, Mr. Chairman. Energy and Minerals supports the amendments in the June submittal.

My understanding of the way this works from way back when is that the Commission goes to hearing with whatever is proposed to them in the petition. And once you're passed the public notice part, the petitioner is in the same position as any other party submitting amendments. So effectively, you're agreeing to the original proposal as amended by their amendments.

CHAIRMAN FLYNN: As long as they're logical outgrowths that have been properly noticed before the Commission, absolutely. But you've already concurred that that's the right version?

MR. BRANCARD: Yes.

CHAIRMAN FLYNN: And I do recall some testimony on that matter.

Typically in matters we would require you to submit proposed findings, and I think that's going to be unnecessary here today.

So with that, unless there's any other

Page 155

questions, I think we can close the record and return to deliberations.

(Whereupon the Commission deliberations continued.)

CHAIRMAN FLYNN: At this point, I would move to adopt the proposed rule as stated in Exhibit B to the direct testimony of Robert O'Brien that was filed by petitioners on June 15th, 2015.

COMMISSIONER DOMINGUEZ: Second.

CHAIRMAN FLYNN: I have a second from Commissioner Dominguez. Any further discussion before we vote?

COMMISSIONER SAYER: I guess to bring up the issue we talked about pertaining to the inclusion of the date as it exists in, I believe, the rule that we're about to adopt, the date of the Federal Register -- or the CFR date, I believe the petition, as it exists, includes a reference to July 1st, 2015, the CFR as of that date. So I think we talked about that. I think we should amend to strike.

CHAIRMAN FLYNN: That's a really good catch, Commissioner Sayer. I would support that motion. I'll withdraw my motion and make an amended motion along those lines, if that works for you.

COMMISSIONER SAYER: Absolutely.

CHAIRMAN FLYNN: So I'm going to withdraw

Page 156

the motion to approve the June 15th testimony -- Exhibit B to the June 15th, 2015, testimony of Robert O'Brien.

I will make another motion to approve the petition as filed in Exhibit B to the direct testimony of Robert O'Brien, filed on June 15th, 2015, with the amendment to remove the dates in the CFR that are currently in the exhibit and request counsel to remove all of those references in the final version of the rule.

COMMISSIONER DOMINGUEZ: Second.

CHAIRMAN FLYNN: I have a second from Commissioner Dominguez. Any further discussion?

Hearing none, all in favor of the motion that's before the Commission, please say aye.

Any opposition?

Hearing none, I will ask the Hearing Officer to prepare an order consistent with the decision that's been made by the Water Quality Control Commission here today. I would request in the order as the basis for the decision to reflect the deliberations -- generally reflect the deliberations that have occurred and reference all the evidence that's been filed in the record here today, as well as the oral evidence that's been presented by the witnesses at today's hearing.

And I would direct that the Energy, Minerals

Page 157

and Natural Resources Department take care of preparing the final rule as has been determined by the Commission here today and taking care of all necessary actions related to having that rule published with the State Records Center.

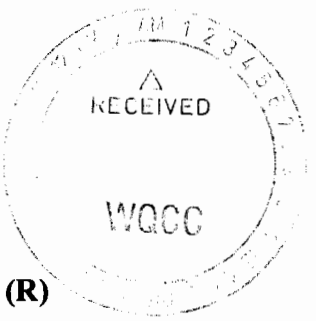
And without any further business before the Commission, we are hereby adjourned. Thank you.

(The hearing was concluded at 2:10 p.m.)

STATE OF NEW MEXICO)
)ss.
COUNT OF BERNALILLO)

I, Jacqueline R. Lujan, the officer before whom the foregoing hearing was taken, do hereby certify that the witnesses whose testimony appears in the foregoing transcript were duly sworn by me; that I personally recorded the testimony by machine shorthand; that said transcript is a true record of the testimony given by said witnesses; that I am neither attorney nor counsel for, nor related to or employed by, any of the parties to the action in which this matter is taken, and that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in this action.

JACQUELINE R. LUJAN, CCR #91
License expires 12/31/15



STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF:	)	
PROPOSED AMENDMENT	)	**No. WQCC 14-15 (R)**
TO 20.6.2.3000 NMAC and 20.6.2.5000 NMAC	)	

THE WATER QUALITY CONTROL COMMISSION'S STATEMENT OF REASONS AND FINAL ORDER

This matter comes before the Water Quality Control Commission ("WQCC") following a public hearing before the WQCC and a Hearing Officer (Morris J. Chavez, Esq.) on July 14, 2015, in Artesia, New Mexico.

Navajo Refining Company, LLC ("Navajo" or "Petitioner") petitioned the WQCC to propose new rules authorizing Class I underground injection control ("UIC") wells for hazardous waste (Class I hazardous waste injection wells), generated by oil refineries, and hereinafter referred to as the Water Conservation Rule ("WCR"). The WCR is based on and incorporates by reference, portions of existing federal regulations, promulgated under the authority of the federal Safe Drinking Water Act ("SWDA"). The proposed WCR ensures that the New Mexico SWDA regulations for Class I hazardous waste injection wells are, at a minimum, as stringent as federal regulations.

The Oil Conservation Division ("OCD") of the Energy, Minerals, and Natural Resources Department presented technical testimony in support of the proposed rulemaking. OCD participated in the development of the WCR which allowed for additional content that was incorporated into the final version.

After a full deliberation on the WCR and having granted full support to the WCR, the WQCC submits the following Statement of Reasons in support of their decision:

1. Petitioner filed a Second Amended Petition to Amend 20.6.2.3000 NMAC and 2.6.2.5000 NMAC to adopt new rules authorizing Class I UIC wells for hazardous waste generated by oil refineries, referred to above as the Water Conservation Rule or WCR. Petitioner made further proposed changes to the WCR on June 15, 2015, in Exhibit B to the Technical Testimony of Robert O'Brien. The June 15, 2015, version of the WCR is the version before the Commission for decision.
2. The WCR is based on and incorporates by reference portions of existing federal regulations, promulgated under the authority of the SWDA for Class I hazardous waste injection wells. Specifically, the proposed WCR, amends Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC and adds new text as 20.6.2.5300 through 20.6.2.5399 NMAC.
3. The Commission agrees the benefits of authorizing Class I hazardous waste UIC wells for oil refineries include the following:
    a. Water conservation: Authorizing the State to issue Class I hazardous waste UIC well permits to oil refineries promotes water reuse and conservation by allowing refineries to reuse water by extracting and disposing of hazardous constituents in the waste streams generated by oil refineries.
    b. Waste minimization: The WCR promotes waste minimization. Through water reuse, the final effluent stream sent to a Class I hazardous waste injection well could be materially smaller than a full effluent stream that is typically disposed of in Class I nonhazardous waste injection wells. Volumes of waste generated by oil refineries may therefore be minimized.

c. Economic benefits: The WCR provides a number of economic benefits to communities supporting refineries. Through reuse of water and reduction of fresh water usage by oil refineries, more fresh water will be available for use by surrounding communities and businesses, including agriculture-related businesses.

d. Preservation of disposal capacity: The WCR reduces effluent discharges to existing Class I nonhazardous waste UIC wells to preserve finite capacity in such wells. Preserving capacity facilitates continued oil and gas production by ensuring sufficient resources are available in the future to process additional crude oil and recovered oil.

e. Improved oil and gas industry reliability: The WCR allows those in the oil and gas industry to improve reliability in their systems and production by allowing the refineries they depend upon to manage unexpected increases in concentrations of chemical constituents in the wastewater stream that may exceed hazardous waste thresholds. Currently, refineries must treat wastewater streams before disposal so wastewater streams do not exceed hazardous waste thresholds, which in some instances can curtail crude oil throughput. Creating disposal capacity for hazardous wastewater streams allows refineries to maintain greater crude oil throughput, avoiding adverse financial consequences to their suppliers and the State.

4. Oil refining companies must complete a number of processes in order to transform crude oil and recovered oil (i.e., oil recovered from oil-bearing residuals generated in the refining industry) into refined products. During these processes refineries use significant

quantities of water and generate wastewater streams that can be recycled, especially if certain chemical constituents can be removed from these wastewater streams to enable reuse. Some of these chemical constituents could be considered hazardous waste if present in sufficient concentrations. Class I hazardous waste UIC wells provide a demonstrated means for safely disposing of such wastes in deep geologic formations that are isolated from aquifers used as water supplies. The deep formations used for injection would be substantially below aquifers used for fresh drinking and agricultural/industrial water supplies and are separated from those supplies by numerous layers of impermeable rock formations. The WCR requires that any injection of fluids through a Class I hazardous waste UIC well must occur beneath the lowermost formation that contains 10,000 mg/l or less of total dissolved solids ("TDS").

5. The federal Class I hazardous waste injection well regulations were promulgated in 1980 and have a demonstrated history of protecting human health and the environment. In 1983, New Mexico was granted primacy over the UIC program for all Class I wells.[1] After New Mexico assumed primacy, EPA amended the regulations applicable to Class I hazardous waste injection wells.[2] New Mexico never amended its regulations to incorporate the changes made in the federal regulations. Instead, in 2001, New Mexico eliminated the regulations authorizing Class I hazardous waste UIC well permits because no such wells had been permitted or constructed under the regulations.

6. The WCR does not alter the responsibilities of the NMED or OCD with respect to administering the UIC program currently delegated to the State by the EPA under the SDWA. Since the WCR applies to oil refineries only, the WCR would be administered

[1] *See* 40 CFR § 147.1601.
[2] 53 Fed. Reg. 28,118 (July 28, 1988).

by OCD. OCD currently administers the UIC program for Class I injection wells for oil and gas related industries, including refineries, pursuant to the EPA's delegation to New Mexico under the SDWA, the 1982 Joint Powers Agreement Between the Environmental Improvement Division, the Oil Conservation Division, and the Mining and Minerals Division, and NMSA 1978, § 70-2-12.

7. As described below, the Commission agrees that Class I hazardous waste UIC wells are a safe and economical way to dispose of hazardous wastewater. The federal regulations on which the WCR is based are comprehensive, imposing exacting requirements for the selection of the site, well construction standards, and the day-to-day operations to ensure that the State's groundwater resources are safe and secure. The WCR also satisfies New Mexico's criteria protecting groundwater, the environment, and other resources.

Background of Class I Injection Wells

8. Wastewater is an unavoidable byproduct of the manufacturing processes that create thousands of products we use every day. While industries continue to research and implement ways to reduce waste by recycling and improving manufacturing processes, wastewater is still generated and requires disposal. Class I UIC wells represent a technically sound and safe disposal option for such wastewater, as demonstrated by stringent design and operating requirements and a history of safe disposal that spans many decades.

Regulatory Framework for UIC Wells

9. Underground injection refers to the placement of fluids, often wastewater, underground through a well bore. As the EPA Regional Office for Region 6 found, "some waste fluids are generated in such volumes as to make treatment economically impractical. If properly constructed, and operated, injection wells are by far the best way to dispose of these waste fluids."[3] In contrast, the lack of this option "removes a safe, economically proven technology by which wastes can be effectively addressed."[4]

10. As part of the SDWA, the federal UIC program was established.[5] Since groundwater is a major source of drinking water in the United States, the UIC program requirements were designed to prevent groundwater contamination. Most groundwater used as drinking water today contains less than 3,000 mg/l TDS. The UIC program adds a significant margin of safety and protects waters with significantly higher concentrations of TDS of up to 10,000 mg/l to ensure that all water with the potential to be treated and used as drinking water in the future is protected.

11. New Mexico, like other states and the federal government, has a reasonable objective to protect any underground source of drinking water ("USDW"). A USDW is defined by EPA as an "aquifer or its portion which supplies any public water system or contains a sufficient quantity of groundwater to supply a public water system, and either currently supplies a public water system, or contains less than 10,000 mg/l of [TDS] and is not an exempted aquifer."[6] In essence, a USDW is a collection of clean water large enough that it could potentially serve the public. New Mexico's existing UIC regulations go further

[3] ENVIRONMENTAL PROTECTION AGENCY, *Frequently Asked Questions About the Underground Injection Control Program*, http://www.epa.gov/Region6/water/swp/uic/faq3.htm#banned.
[4] *Id.*
[5] 42 U.S.C. §300h.
[6] 40 CFR § 144.3

and "protect all ground water of the State of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow for uses designated in the New Mexico Water Quality Standards."[7] New Mexico's existing UIC regulations allow the State to designate exempted aquifers, but only if the TDS concentration is 5,000 mg/l or more. The existing standard would also apply to the WCR.

Class I Wells

12. There are six classes of underground injection wells. These classes are based on the types of fluids injected and, in some cases, the industries that they support. Each well classification has technical standards for well design and construction, injection depth, and operating and monitoring techniques in order to ensure that all wells are designed and operated in a way that protects drinking water.
13. Class I wells, which are further classified as hazardous and nonhazardous wells, inject industrial or municipal wastewater far beneath the lowermost source of drinking water. Class I wells are used mainly by the following industries: petroleum refining, metal production, chemical production, pharmaceutical production, commercial waste disposal, food production, and municipal wastewater treatment.[8]
14. Class I wells inject wastewater into geologic formations that lack suitable water quality to qualify as a USDW (or groundwater of the State of New Mexico) and are typically located thousands of feet below the land surface. The geological formation into which

[7] Section 20.6.2.5001 NMAC.
[8] ENVIRONMENTAL PROTECTION AGENCY, *Industrial & Municipal Waste Disposal Wells (Class I),* http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.

the wastewater is injected, known as the injection zone, must be demonstrated to be sufficiently porous and permeable so that the wastewater can enter the rock formation without an excessive buildup of pressure. The injection zone is typically beneath a large, relatively impermeable layer of rock, known as the confining zone, which along with the natural force of gravity, will hold injected fluids in place and restrict them from moving upward toward a USDW (or groundwater of the State of New Mexico).

15. According to EPA's most recent data, there are currently 678 Class I injection wells in the United States.[9] 117 of these wells (17%) are Class I hazardous waste injection wells.[10] A significant number of Class I hazardous waste injection wells are located in EPA Region 6 (comprised of Arkansas, Louisiana, New Mexico, Oklahoma, Texas, and 66 Native American Tribes).[11] 21 states currently have Class I hazardous waste injection wells.[12] Texas has the greatest number of Class I hazardous waste injection wells followed by Louisiana.[13]

Federal Regulations for Class I Wells

16. Federal regulations strictly control the construction and operation of Class I UIC wells. Class I wells must be located in geologically stable areas that are free of fractures or faults through which injected fluids could travel to drinking water sources.[14] Well operators must also show that there are no wells or other artificial pathways between the injection zone and USDWs through which fluids can travel. Further, limitations on the

---

[9] ENVIRONMENTAL PROTECTION AGENCY, *UIC Inventory by State – 2011*, http://water.epa.gov/type/groundwater/uic/upload/uicinventorybystate2011.pdf.
[10] *Id.*
[11] *Id.*
[12] *Id.*
[13] *Id.*
[14] 40 CFR §146.62.

locations where Class I wells can be sited ensure that the site-specific geologic properties of the subsurface around the well provide additional safeguards against the movement of injected wastewaters to a USDW.

17. Class I hazardous waste UIC wells are designed and constructed to prevent the movement of injected wastewaters into USDWs. Their stringent, multi-layer construction[15] has many redundant safety features. One of these features is the well's casing, which prevents the borehole from caving in. The casing is typically made out of steel or fiberglass-reinforced plastic material that is compatible with the injected fluids. It consists of an outer surface casing, that extends the entire depth of the well, and an inner "long string" casing that extends from the surface to or through the injection zone. The innermost layer of the well, the injection tubing, brings injected wastewater from the surface to the injection zone.

18. All of the materials used in Class I hazardous waste UIC wells must be compatible with the wastewater, geologic formations, and fluids into which they will come in contact. A constant pressure is maintained at the well head and that pressure is continuously monitored to verify the well's mechanical integrity and proper operational conditions.[16] Trained operators are responsible for day-to-day injection well operation, maintenance, monitoring, and testing.[17] In addition to monitoring the well operation, operators of hazardous waste wells are required to develop and follow a waste analysis plan for monitoring the physical and chemical properties of the injected wastewater.[18]

---

[15] Wells typically consist of three or more concentric layers of pipe: surface casing, long string casing, and injection tubing. Class I hazardous wells must have 3 layers of casing. 40 CFR § 146.65(c).
[16] 40 CFR §146.67.
[17] 40 CFR §146.13(b).
[18] 40 CFR §146.68 (a).

19. Finally, Class I hazardous waste UIC wells are continuously monitored and controlled, usually with sophisticated computers and digital equipment, which provide real-time data and information to the well operator. Thousands of data points about the pumping pressure for fluid disposal, the pressure in the space between the injection tubing and the well casing (that shows there are no leaks in the well), and data on the fluid being disposed of, such as its temperature and flow rate, are monitored and recorded each day.[19]

20. Alarms are connected to sound if anything out of the ordinary happens, and if unusual pressures are sensed by the monitoring equipment, the well pump automatically shuts off.[20] Disposal in the well does not resume until the cause of the unusual event is investigated, and the parties responsible for operating the well and the regulatory agencies both are sure that no environmental harm has been or will be done by well operations.[21]

21. The wells are also tested regularly, using special tools that are inserted into the well to record data about the well and surrounding rock formations. Regulators review all the data about the well operations, monitoring and testing frequently, and inspecting the well site to make sure everything is operating according to the requirements put in place to protect drinking water sources.

---

[19] 40 CFR §146.67(a).
[20] 40 CFR §146.67(f). Class I hazardous waste injection well operators may either install an automatic shut-off switch or maintain a trained operator on-site at all times when the well is operating. *Id.*
[21] 40 CFR 146.67(h).

Safety Factors and Safety Record

22. Because Class I hazardous waste UIC wells inject waste far below the deepest USDW, there is very little chance of any adverse effect on groundwater that could be used for domestic or agricultural water supply. In fact, in its March 2001 Study of Class I UIC wells, EPA said that "the probability of loss of waste confinement due to Class I injection has been demonstrated to be low" and "existing Class I regulatory controls are strong, adequately protective, and provide an extremely low-risk option in managing the wastewaters of concern."[22] In other words, the related impermeable confining layers above the injection zone and the many layers of protection required in the construction, operation, and monitoring of wells effectively protect USDWs by providing multiple, redundant safeguards against upward fluid movement.

23. Class I hazardous waste UIC wells that meet EPA's design and operating requirements are well studied and pose minimal risks. In 1998, scientists quantitatively estimated the risk of waste containment loss as a result of various sets of events associated with Class I hazardous waste wells.[23] According to the study, because of the redundant safety systems in a typical Class I hazardous waste UIC well, loss of containment would require a series of improbable events to occur in sequence. As a result, the calculated probability of containment loss resulting from each of the scenarios examined ranges from one-in-one-million to one-in-ten-quadrillion.[24]

24. In the field, the probability of Class I UIC well failures, both nonhazardous and hazardous, has also been demonstrated to be very low. Some early Class I UIC well

---

[22] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS xiii, 42 (March 2001) (emphasis supplied).
[23] Rish, W.A., T. Ijaz, and T.F. Long, *A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells,* 1998.
[24] *Id.*

failures were a result of historic practices that are no longer permissible under current federal UIC regulations, such as improper well construction or improper well closure upon cessation of operations. As discussed above, Class I hazardous waste UIC wells now have redundant safety systems and several protective layers; an injection well would fail only when multiple systems fail in sequence without detection. In the unlikely event that a well would fail, the geology of the injection and confining zones serves as a final safety mechanism to prevent movement of wastewater to drinking water resources. Injection well operators invest millions of dollars in the permitting, construction, and operation of wells and, even in the absence of UIC regulations, would carefully monitor the integrity of the injection operation to safeguard their investments.

25. Failures of Class I UIC wells are exceedingly rare and have generally not resulted in significant harm to the environment or fresh water supplies. Typically, any failures of mechanical integrity that have occurred are internal failures, detected by continuous pressure monitoring systems or integrity tests. Any wells that fail are shut down until they are repaired to the satisfaction of the regulatory agency. EPA's study of more than 500 Class I nonhazardous and hazardous UIC wells showed that loss of mechanical integrity contributed to only 4 cases of significant wastewater migration (none of which affected a drinking water source) over several decades of operation.[25] This safety record can be attributed to the rigorous requirements for monitoring and ensuring that the well materials are compatible with the wastewater injected.

[25] EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 41 (March 2001).

Summary of WCR

26. The WCR is based on federal regulations for Class I hazardous waste UIC wells found in 40 CFR Parts 144 and 146. The WCR draws from these federal provisions in two ways. First, in many cases, entire CFR provisions have been incorporated verbatim from the federal regulations (with minor conforming changes discussed below) and, as a result, are as stringent as the federal regulations. Minor adjustments were made to reflect the fact that (1) the regulations would be administered by OCD rather than by EPA and (2) the regulations will become a part of the NMAC. As a result, names, titles, and cross references have been adjusted to refer to New Mexico agencies and existing provisions in the NMAC. Second, where practicable, the WCR incorporates relevant subparts CFR by reference.

27. In most cases, New Mexico's existing UIC requirements are functionally equivalent to EPA's regulations. In turn, the WCR is at a minimum as stringent as EPA's regulations. In a few cases, however, New Mexico's existing UIC program is more stringent than EPA's regulations and, as a result, certain provisions of the WCR provisions are more stringent than their counterparts in the CFR. Finally, the WCR amends several existing sections of the NMAC because Class I hazardous waste UIC wells would no longer be prohibited under New Mexico law. The following paragraphs summarize the regulations, which are included in full as Attachment A to this Statement of Reasons. In addition, Table 1 below provides a cross reference between each applicable federal regulation for Class I hazardous waste injection wells and the corresponding NMAC provision.

Existing Regulations

28. The WCR amends Sections 20.6.2.3106-07, 20.6.2.3109, 20.6.2.5002-04, 20.6.2.5101-04, 20.6.2.5200-01, 20.6.2.5204, and 20.6.2.5209-10 NMAC. These amendments primarily involve administrative updates to reflect the fact that Class I hazardous waste UIC wells are no longer be prohibited and that the State's UIC regulations are expanded to include Sections 20.6.2.5300 through 20.6.2.5399 NMAC. The only substantive change to existing regulations is an expansion of the reporting requirements for Class I hazardous waste UIC wells in Subsection G(2) of Section 20.6.2.5101 NMAC.

New Regulations

29. Sections 20.6.2.5300 through 5303 NMAC. The WCR starts with several new provisions that provide necessary context and state-specific structure that are not based on the federal UIC provisions. Section 20.6.2.5300 NMAC provides the requirements for Class I hazardous waste UIC wells and expressly limits the scope of the Class I hazardous waste UIC well program to petroleum refineries. Section 20.6.2.5301 NMAC includes all of the definitions applicable to Class I hazardous waste UIC wells (beyond those generally applicable to 20.6.2 NMAC). Section 20.6.2.5302 NMAC provides the fee provisions for Class I hazardous waste UIC wells, including a filing fee, permit fee, annual administrative fee, renewal fee, modification fee, and financial assurance fee. Section 20.6.2.5303 authorizes the conversion of existing Class I nonhazardous UIC wells to Class I hazardous UIC wells provided the permit applicant complies with all requirements for Class I hazardous UIC wells and obtains the a Class I hazardous waste UIC permit. Sections 20.6.2.5304 through 20.6.2.5309 NMAC are reserved.

30. Sections 20.6.2.5310. Section 20.6.2.5310 NMAC provides the requirements for UIC wells injecting hazardous waste required to be accompanied by a manifest. This provision is substantially similar to the corresponding EPA regulation with updated cross references to the NMAC. Sections 20.6.2.5311 through 5319 NMAC are reserved.

31. Sections 20.6.2.5320 through 5321 NMAC. These provisions incorporate by reference EPA's financial assurance requirements for Class I hazardous waste UIC wells found in 40 CFR Part 144, subpart F. The provisions authorize financial assurance using trust funds, surety bonds, letters of credit, insurance, and corporate guarantees by a permit applicant's corporate parent. To be consistent with the State's existing UIC regulations, the WCR does not incorporate by reference federal regulations that permit a financial test by a permit applicant. The WCR also does not incorporate by reference federal provisions that address EPA-administered programs or state assumption of responsibility for plugging and abandonment of Class I hazardous waste UIC wells. Sections 20.6.2.5322 through 5339 NMAC are reserved. To avoid unnecessary expenditure of the Commission's resources in the event that 40 CFR Part 144, subpart F is amended, the Commission is deleting the reference in the proposed WCR to the current effective date of the CFR.

32. Sections 20.6.2.5340 through 5344 NMAC. These provisions are based on EPA's conditions applicable to all UIC permits found in 40 CFR Part 144, subpart E, although the WCR limits their applicability to Class I hazardous waste UIC wells and does not include EPA regulations applicable to other classes of wells. These provisions include many of the procedural and administrative requirements of the Class I hazardous waste UIC well program including, for example, the duty to reapply at the end of the permit

term as well as schedules of compliance and monitoring, recordkeeping, and reporting obligations. The requirements are substantially similar to the corresponding EPA regulations applicable to Class I hazardous waste UIC wells. One area where the WCR is more stringent than EPA is the requirement that the director of OCD provide written approval for the transfer of a Class I hazardous waste UIC well permit. Sections 20.6.2.5345 through 5350 NMAC are reserved.

33. Sections 20.6.2.5351 through 5363 NMAC. These provisions are based on EPA's substantive criteria and standards for Class I hazardous waste UIC wells found in 40 CFR Part 146, subpart G. These provisions provide applicability criteria; minimum siting requirements; corrective action provisions; construction and operating requirements; testing, monitoring, and reporting requirements; and closure and post-closure requirements. These provisions also provide the technical requirements that will be applicable to Class I hazardous waste UIC wells. The provisions in the WCR are substantially similar to EPA regulations, with appropriate updates to cross references addressing New Mexico's existing UIC regulations. There are no substantive additions or deletions to these sections. Sections 20.6.2.5364 through 5399 NMAC are reserved.

Consistency with NMSA 1978, § 76-6-4-(e)

34. In consideration of the technical testimony submitted on June 15, 2015, as well as the testimony and exhibits presented at the July 14, 2015, hearing before the Commission, we conclude that the WCR meets each of the seven factors listed in NMSA 1978, Section 74-6-4(E).

(1) character and degree of injury to or interference with health, welfare, environment and property. Approving the WCR and authorizing OCD to permit Class I hazardous waste UIC wells will provide a means of disposing of hazardous waste from refineries in a way that avoids any injury to or interference with health, welfare, environment or property. Evidence presented at the hearing demonstrated that Class I hazardous waste UIC well programs have been successfully implemented elsewhere in the United States. Furthermore, technical evidence was presented demonstrating that the WCR includes provisions to ensure that Class I hazardous waste UIC wells will be sited, constructed, operated, and closed in a manner that prevents migration of hazardous chemicals from injection zones into groundwater of the state of New Mexico.

(2) the public interest, including the social and economic value of the sources of water contaminants. Evidence presented at the hearing established that the WCR is in the public interest. Groundwater is a valuable public resource that will be protected and conserved by the WCR. First, the WCR will protect water resources by ensuring that any hazardous waste injected through Class I hazardous waste UIC wells will not migrate into groundwater aquifers. Second, the evidence presented at the hearing established that operation of Class I hazardous waste UIC wells will allow refineries to implement water conservation measures that will reduce demand for fresh water, thereby conserving water and making it available for other public uses. Third, allowing refineries to operate Class I hazardous waste UIC wells will provide additional operational flexibility, allowing refineries to continue to provide economic benefits to the communities in which they are located.

(3) technical practicability and economic reasonableness of reducing or eliminating water contaminants from the sources involved and previous experience with equipment and methods available to control the water contaminants involved. The evidence presented at the hearing demonstrated that EPA and other organizations who have studied Class I hazardous waste UIC wells have determined that they are a technically and economically feasible method of disposing of hazardous waste. Further, evidence presented at the hearing demonstrated that adopting the WCR and allowing refineries to seek Class I hazardous waste UIC wells will not increase the waste disposed of by refineries into the environment. Instead, it will allow refineries to implement water conservation measures that will concentrate existing wastewater streams prior to disposal into underground formations that are geologically isolated from potable drinking water.

(4) successive uses, including but not limited to domestic, commercial, industrial, pastoral, agricultural, wildlife and recreational uses. The evidence presented at the hearing established that the WCR will promote preserve future uses of water. Specifically, authorizing OCD to issue permits for Class I hazardous waste UIC wells will allow refineries to implement water conservations measures that will allow refineries to reduce their use of freshwater supplies and thereby increase the supply of freshwater available for other uses in the State, including domestic, commercial, industrial, pastoral, agricultural, wildlife, and recreational uses.

(5) feasibility of a user or a subsequent user treating the water before a subsequent use. The evidence presented at the hearing established that treatment of contaminated groundwater, while technically feasible, is rarely economically feasible. Instead, wastewater streams should be managed in a manner that avoids contamination in the first

instance. Testimony presented at the hearing established that disposal of hazardous waste through UIC wells is among the safest means of disposing of such waste and, thereby, reduces the risk that water resources will become contaminated.

(6) property rights and accustomed uses. The evidence presented at the hearing established that authorizing Class I hazardous waste UIC wells will not jeopardize property rights or accustomed uses. Specifically, hazardous wastes injected into Class I UIC wells will be confined in injection zones well beneath any potable water and will not migrate from the injection zone into groundwater of the United States for a period of at least 10,000 years.

(7) federal water quality requirements. The evidence presented at the hearing established that the WCR is consistent with federal water quality requirements. In fact, the WCR is based largely on the federal regulations for Class I hazardous waste UIC wells in 40 CFR Parts 144 and 146. We conclude that the WCR is at least as stringent as—and is fact more stringent than—the corollary EPA requirements.

Cross Reference Table

Proposed NM Class I Hazardous Waste UIC Program Rules—New Rule Sections

CFR Cite/Title	NMAC Cite	Notes
40 CFR Part 144 Subpart A - General Provisions (one section)		
§ 144.14 Requirements for wells injecting hazardous waste.	20.6.2.5310	Federal text adopted with conforming changes
40 CFR Part 144 Subpart E - Permit Conditions (all sections)		
§ 144.51 Conditions applicable to all permits.	20.6.2.5341	Federal text adopted with conforming changes
§ 144.52 Establishing permit conditions.	20.6.2.5342	Federal text adopted with conforming changes
§ 144.53 Schedule of compliance.	20.6.2.5343	Federal text adopted with conforming changes
§ 144.54 Requirements for recording and reporting of monitoring results.	20.6.2.5344	Federal text adopted with conforming changes
§ 144.55 Corrective action.	N/A	N/A
40 CFR Part 144 Subpart F - Financial Responsibility: Class I Hazardous Waste Injection Wells (all sections)		
§ 144.60 Applicability.	20.6.2.5320	Incorporated By Reference
§ 144.61 Definitions of terms as used in this	20.6.2.5320	Incorporated By Reference

CFR Cite/Title	NMAC Cite	Notes
subpart.		
§ 144.62 Cost estimate for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.63 Financial assurance for plugging and abandonment.	20.6.2.5320	Incorporated By Reference
§ 144.64 Incapacity of owners or operators, guarantors, or financial institutions.	20.6.2.5320	Incorporated By Reference
§ 144.65 Use of State-required mechanisms.	N/A	N/A
§ 144.66 State assumption of responsibility.	N/A	N/A
§ 144.70 Wording of the instruments.	20.6.2.5320	Incorporated By Reference
40 CFR Part 146 Subpart G - Criteria and Standards Applicable to Class I Hazardous Waste Injection Wells (all sections)		
§ 146.61 Applicability.	20.6.2.5351	Federal text adopted with conforming changes
§ 146.62 Minimum criteria for siting.	20.6.2.5352	Federal text adopted with conforming changes
§ 146.63 Area of review.	20.6.2.5353	Federal text adopted with conforming changes
§ 146.64 Corrective action for wells in the area of review.	20.6.2.5354	Federal text adopted with conforming changes
§ 146.65 Construction requirements.	20.6.2.5355	Federal text adopted with

CFR Cite/Title	NMAC Cite	Notes
		conforming changes
§ 146.66 Logging, sampling, and testing prior to new well operation.	20.6.2.5356	Federal text adopted with conforming changes
§ 146.67 Operating requirements.	20.6.2.5357	Federal text adopted with conforming changes
§ 146.68 Testing and monitoring requirements.	20.6.2.5358	Federal text adopted with conforming changes
§ 146.69 Reporting requirements.	20.6.2.5359	Federal text adopted with conforming changes
§ 146.70 Information to be evaluated by the Director.	20.6.2.5360	Federal text adopted with conforming changes
§ 146.71 Closure.	20.6.2.5361	Federal text adopted with conforming changes
§ 146.72 Post-closure care.	20.6.2.5362	Federal text adopted with conforming changes
§ 146.73 Financial responsibility for post-closure care.	20.6.2.5363	Federal text adopted with conforming changes
40 CFR Part 148 Subpart A - General (all sections)		
§ 148.1 Purpose, scope and applicability.	20.6.2.5371	Incorporated By Reference
§ 148.2 Definitions.	20.6.2.5371	Incorporated By Reference
§ 148.3 Dilution prohibited as a substitute for	20.6.2.5371	Incorporated By Reference

CFR Cite/Title	NMAC Cite	Notes
treatment.		
§ 148.4 Procedures for case-by-case extensions to an effective date.	20.6.2.5371	Incorporated By Reference
§ 148.5 Waste analysis.	20.6.2.5371	Incorporated By Reference
40 CFR Part 148 Subpart B - Prohibitions on Injection (all sections)		
§ 148.10 Waste specific prohibitions—solvent wastes	20.6.2.5371	Incorporated By Reference
§ 148.11 Waste specific prohibitions—dioxin-containing wastes.	20.6.2.5371	Incorporated By Reference
§ 148.12 Waste specific prohibitions—California list wastes.	20.6.2.5371	Incorporated By Reference
§ 148.14 Waste specific prohibitions—first third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.15 Waste specific prohibitions—second third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.16 Waste specific prohibitions—third third wastes.	20.6.2.5371	Incorporated By Reference
§ 148.17 Waste specific prohibitions; newly listed wastes.	20.6.2.5371	Incorporated By Reference
§ 148.18 Waste specific prohibitions—newly listed and identified wastes.	20.6.2.5371	Incorporated By Reference

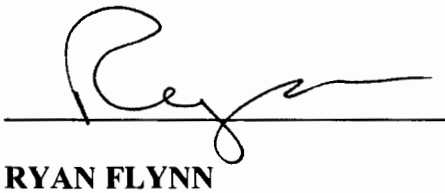
CFR Cite/Title	NMAC Cite	Notes
40 CFR Part 148 Subpart C - Petition Standards and Procedures (all sections)		
§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.	20.6.2.5371	Incorporated By Reference
§ 148.21 Information to be submitted in support of petitions.	20.6.2.5371	Incorporated By Reference
§ 148.22 Requirements for petition submission, review and approval or denial.	20.6.2.5371	Incorporated By Reference
§ 148.23 Review of exemptions granted pursuant to a petition.	20.6.2.5371	Incorporated By Reference
§ 148.24 Termination of approved petition.	20.6.2.5371	Incorporated By Reference

FINAL ORDER

Having considered the administrative record in its entirety, public testimony, and all technical testimony presented; and being otherwise fully advised regarding this matter;

ON BEHALF OF THE WATER QUALITY CONTROL COMMISSION, THE CHAIRMAN OF THE WATER QUALITY CONTROL COMMISSION ORDERS THE ADOPTION OF THE FOLLOWING:

The proposed Water Conservation Rule, with the addition of the amendments offered by the Petitioner in the June 15, 2015, technical testimony of Robert O'Brien with date references to the Code of Federal Regulations removed as ordered by the Commission.



RYAN FLYNN
Chairman – Water Quality Control Commission

NOTICE OF PROCEDURE FOR APPEALLATE REVIEW

Any aggrieved party may seek appellate review in the Court of Appeals, pursuant to NMSA 1978, §74-6-7 and Rules of Appellate Procedure, 12-601 NMRA. Direct appeals from orders shall be taken by filing a notice of appeal with the appellate court clerk within thirty (30) days from the date of the Order.

STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF:
PROPOSED AMENDMENT **WQCC 14-15 (R)**
To 20.6.2.3000 NMAC AND 20.6.2.5000 NMAC

CERTIFICATE OF SERVICE LIST

I hereby certify that a copy of The Water Quality Control Commission's Statement of Reasons and Final Order was served on the following parties on this 31st day of July 2015, via the stated delivery methods below:

Via U.S. Mail and Email:

For Navajo Refining Company, Inc.:

Paul T. Halajian
Christina C. Sheehan
Modrall, Sperling, Roehl, Harris & Sisk, P.A.
P.O. Box 2168
Albuquerque, New Mexico 87103
Email: ccs@modrall.com
Email: pth@modrall.com

Roger Martella, Jr.
Timothy Webster
Joel Visser
Sidley Austin LLP
1501 K Street, N.W.
Washington, D.C. 20005
Email: rmartella@sidley.com
Email: twebster@sidley.com
Email: jvisser@sidley.com

For the New Mexico Energy, Minerals and Natural Resources Department:

Bill Brancard
Allison Marks
NM Energy, Minerals and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Email: Bill.brancard@state.nm.us
Email: AllisonR.Marks@state.nm.us

For the New Mexico Environment Department:

Andrew Knight
Billy Jimenez
Office of General Counsel
1190 St. Francis Drive
Santa Fe, New Mexico 87505
Email: Andrew.knight@state.nm.us
Email: billy.jimenez@state.nm.us

Counsel for the Commission:

Wade Jackson, General Counsel
NM Economic Development Department
Joseph Montoya Building
1100 S. St. Francis Drive
Santa Fe, New Mexico 87505
Email: Wade.Jackson@state.nm.us

Pam Castañeda

Pam Castañeda, Commission Administrator
Harold Runnels Bldg., Rm. S-2100
1190 St. Francis Drive
Santa Fe, New Mexico 87505
(505) 827-2425
(505) 827-2818 Fax

APPENDIX – H

RESERVED

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Tony Delfin
Acting Cabinet Secretary

Bill Brancard, General Counsel
Office of General Counsel

August 29, 2016

Ron Curry
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202

Attorney General's Statement for Program Revision of New Mexico UIC Program

Dear Mr. Curry:

Pursuant to 40 CFR 145.24 and 40 CFR 145.32(b)(1), Special Assistant Attorney General Bill Brancard submits the following Attorney General's statement in support of the revision to the New Mexico Underground Injection Control ("UIC") Program for Class I, III, IV and V wells ("Program Revision").

The U.S. Environmental Protection Agency approved the UIC program for Class I, III, IV and V injection wells in New Mexico effective August 10, 1983. 40 CFR 147.1601. The program is administered by the New Mexico Water Quality Control Commission ("WQCC"), the Environmental Improvement Division (now known as the New Mexico Environment Department or "NMED"), and the Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department ("OCD"). Id.

The Program Revision amends the approved UIC Program to authorize the State of New Mexico to allow the approval of Class I hazardous waste injection wells but only for petroleum refineries disposing the waste generated at the refinery. The Program Revision was implemented through a rule change adopted by the WQCC and filed with the State Records and Archives Center and published in the New Mexico Register. The rule change became effective on August 31, 2015. In the rule change, the WQCC delegated the administration of the Class I hazardous waste well program to the OCD. 20.6.2.5300 NMAC.

The State of New Mexico, and specifically the OCD, has the authority to carry out the Program Revision. The New Mexico UIC Program, and the Program Revision, is authorized under the New Mexico Water Quality Act and its regulations. NMSA 1978, §74-6-1 to -17 (1967, as amended through 2013); 20.6.2 NMAC (1/4/1968, as amended through 8/31/2015). The Program Revision is specifically authorized and described under the regulations: 20.6.2.5300 to 20.6.2.5363 NMAC.

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3200 • Fax (505) 476-3220 • www.emnrd.state.nm.us

The WQCC is authorized under the Water Quality Act to adopt regulations implementing the Act. NMSA 1978, §74-6-4. The WQCC followed the procedures in the Act for the adoption of regulations, including providing public notice and conducting a public hearing. NMSA 1978, §74-6-6. As required by the Water Quality Act and the State Rules Act, the rule changes were filed with the State Records and Archives Center and published in the New Mexico Register. NMSA 1978, §§ 14-4-5 and 74-6-6(E). The rule changes became effective on August 31, 2015. NMSA 1978, §§ 14-4-5 (no rule effective until after filing and publication in the New Mexico Register) and 74-6-6 (no rule under the Water Quality Act becomes effective until at least 30 days after filing).

Under the Water Quality Act, the WQCC has the duty to assign responsibility for administering its regulations to "constituent agencies". NMSA 1978, §74-6-4(F). For the Program Revision, the WQCC has assigned the administration of the Class I hazardous waste well program to the OCD. 20.6.2.5300 NMAC. The OCD is one of the constituent agencies under the Water Quality Act, NMSA 1978, §74-6-2(K), and has the authority to administer the Program Revision.

As required by 40 CFR 145.24, where State agencies have independent legal counsel, the Attorney General's Statement may be provided by an agency attorney who has full authority to represent the State agency in court on all matters pertaining to the State UIC program. Pursuant to a Commission dated August 18, 2015, I have been appointed by New Mexico Attorney General Hector H. Balderas as a Special Assistant Attorney General with full authority to independently represent the New Mexico Energy, Minerals and Natural Resources Department and the Oil Conservation Division on all matters related to the UIC program.

Sincerely,

Bill Brancard
Special Assistant Attorney General
General Counsel
Energy, Minerals and Natural Resources Department