UIC - ____2____

UIC PROGRAM REVISION

COMPENDIUM

2020

From:	Brancard, Bill, EMNRD
To:	Sandoval, Adrienne, EMNRD
Cc:	Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD; Goetze, Phillip, EMNRD
Subject:	FW: [EXT] FW: Your Comment Submitted on (ID: EPA-HQ-OW-2020-0154-0001)
Date:	Wednesday, November 25, 2020 12:40:03 PM
Attachments:	EXTERNAL Email FW Virtual Hearing for NM Class I UIC Program Revision.msg ATTACHMENT C-WQCC 14-15 10 2ndAmendedPetition 4-30-15.pdf ATTACHMENT D-WQCC 14-15 32-7 VanVoorheesTestimony06-15-15.pdf Comment Submittal Receipt 112520.pdf Comments of HollyFrontier Navajo Refinery LLC.pdf NM UIC Comments 112520.pdf ATTACHMENT A-WQCC 14-15 32-5 McKee-Testimony06-15-15.pdf ATTACHMENT B-WQCC 14-15 32-21 SalvarreyTestimony06-15-15.pdf

Here are HollyFrontier's comments on the UIC program revision.

Carl – you can include this in our files.

From: Banks, Jim <james.banks@hoganlovells.com>
Sent: Wednesday, November 25, 2020 12:25 PM
To: Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Subject: [EXT] FW: Your Comment Submitted on (ID: EPA-HQ-OW-2020-0154-0001)

Bill -- Here are the HF comments. Have a great holiday!

Jim Banks
Partner

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004

Direct: +1 202 637 5802
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From: no-reply@regulations.gov <no-reply@regulations.gov>
Sent: Wednesday, November 25, 2020 12:12 PM
To: Holder, Mike <Michael.Holder@hollyfrontier.com>
Subject: Your Comment Submitted on Regulations.gov (ID: EPA-HQ-OW-2020-0154-0001)

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Agency: Environmental Protection Agency (EPA)
Document Type: Rulemaking
Title: Underground Injection Control Program; Primacy Revisions: New Mexico
Document ID: EPA-HQ-OW-2020-0154-0001

Comment:
November 25, 2020

Drinking Water Protection Division
Office of Ground Water and Drinking Water
United States Environmental Protection Agency
Washington, D.C. 20460

Re:Proposed Rule Regarding State of New Mexico Underground Injection Control Program; Primacy Revisions. Docket ID No. EPA-HQ-OW-2020-0154

To whom it may concern:

We are enclosing the comments of HollyFrontier Navajo Refining LLC on the above-referenced proposed rulemaking. Thank you for your consideration.

Sincerely,

Michael W. Holder
HollyFrontier

Enclosures
Comments of HollyFrontier Navajo Refinery LLC
ATTACHMENT A, Direct Testimony of Michael McKee
ATTACHMENT B, Direct Testimony of Francisco Salvarrey
ATTACHMENT C, Second Amended Petition
ATTACHMENT D, Direct Testimony of Robert Van Voorhees

Uploaded File(s):

- ATTACHMENT A-WQCC 14-15 32-5 McKee-Testimony06-15-15.pdf

- ATTACHMENT B-WQCC 14-15 32-21 SalvarreyTestimony06-15-15.pdf
- Comments of HollyFrontier Navajo Refinery LLC.pdf
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- ATTACHMENT D-WQCC 14-15 32-7 VanVoorheesTestimony06-15-15.pdf
- ATTACHMENT C-WQCC 14-15 10 2ndAmendedPetition 4-30-15.pdf

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The **Environmental Protection Agency** (EPA) Proposed Rule: **Underground Injection Control Program; Primacy Revisions: New Mexico**

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michael.holder@hollyfrontier.com Email Receipt

Your comment:

Comment:
November 25, 2020

Drinking Water Protection Division
Office of Ground Water and Drinking Water
United States Environmental Protection Agency
Washington, D.C. 20460

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Michael W. Holder
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- ATTACHMENT D-WQCC 14-15 32-7 VanVoorheesTestimony06-15-15.pdf: **success**
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- ATTACHMENT B-WQCC 14-15 32-21 SalvarreyTestimony06-15-15.pdf: **success**
- Comments of HollyFrontier Navajo Refinery LLC.pdf: **success**
- ATTACHMENT A-WQCC 14-15 32-5 McKee-Testimony06-15-15.pdf: **success**
- NM UIC Comments 112520.pdf: **success**

HOLLYFRONTIER

November 25, 2020

Drinking Water Protection Division
Office of Ground Water and Drinking Water
United States Environmental Protection Agency
Washington, D.C. 20460

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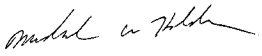
Sincerely,



Michael W. Holder
HollyFrontier

Enclosures

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Comments of

HollyFrontier Navajo Refining LLC

On the

U.S. Environmental Protection Agency's Proposal

To Approve

New Mexico's UIC Program Revisions

For

Permitting Class I Hazardous Waste Injection Wells

To Dispose of Refinery-Generated Wastewaters

HollyFrontier Navajo Refining LLC ("Navajo") provides these comments on the proposal by the U.S. Environmental Protection Agency (""EPA") to approve an application by the State of New Mexico under the Safe Drinking Water Act ("SDWA") to revise the state's Underground Injection Control ("UIC") program to remove the current ban on Class I hazardous waste injection wells, but only for petroleum refineries disposing the waste generated at the refinery, and to establish permit conditions, oversight and enforcement to manage these disposal activities. 85 Fed. Reg. 64437 (October 13, 2020). Navajo urges EPA to finalize the approval in order to authorize this safe and effective waste disposal method, which will facilitate water conservation and reuse practices by avoiding the need to discharge wastewaters to the surface environment containing pollutants that have been incidentally concentrated by those practices.

Navajo petitioned the state to undertake these regulatory revisions and to seek from EPA the authority to permit Class I UIC wells for disposal of on-site-generated, hazardous refinery wastes.

Navajo asked New Mexico to establish regulations to implement its authority that would be at least as stringent as the comparable federal regulations. The New Mexico Water Quality Control Commission ("WQCC") developed a very detailed regulatory proposal, and on May 15, 2015, it published a public notice of its intent to adopt the proposal. Written comments were accepted until July 14, 2015, and a public hearing was conducted on that day. Navajo presented extensive testimony in favor of the proposal, and other members of the public provided written or oral testimony. There was no opposition to the proposal.

Navajo pursued this program revision in order to create the appropriate legal mechanism to safely dispose of wastes that sometimes may be deemed to be hazardous wastes because of the concentration of certain pollutants in its waste streams that results from Navajo's voluntary water conservation and reuse practices. Navajo operates an oil refinery in Artesia, New Mexico, and generates a wastewater stream that is similar to produced water that is routinely disposed of in connection with the production of oil and gas. Navajo reuses this wastewater in refinery operations, significantly reducing the amount of makeup water Navajo must consume, and also reducing the amount of wastewater to be disposed of. These water reuse and conservation practices inevitably increase the concentration of certain pollutants in the resulting waste stream. When pollutant concentrations reach certain levels, the waste stream may be deemed to be a hazardous waste pursuant to EPA regulations promulgated under the Resource Conservation and Recovery Act ("RCRA"). Disposal of those hazardous wastes presents logistical, environmental and economic challenges that can be effectively overcome through the use of underground injection disposal technology.

In its support of New Mexico's proposal to upgrade its UIC program, Navajo submitted expert testimony regarding: (1) the benefits to the community and the company of water conservation and reuse at Navajo; (2) the need for underground injection wastewater disposal to facilitate water conservation and reuse; (3) the safety and effectiveness of Class I hazardous waste disposal wells; and (4) the structure and quality of New Mexico's regulatory program for permitting Class I

hazardous waste injection wells. These comments outline the central points of that expert testimony. Navajo has attached, and hereby incorporates, that testimony as part of these comments.

I. The Benefits of Water Conservation and Reuse in New Mexico.

The businesses and residents of southeast New Mexico face significant constraints in terms of water availability and waste disposal options. Water conservation and reuse will enable Navajo to address these concerns by reducing both the intake of fresh water and the volume of wastewater to be discharged. Local communities will benefit from the greater availability of water for their uses, and the refinery will save costs and gain operational flexibility to enable future expansions and increases in processing capacity due to lower constraints on water intake and less need for wastewater disposal.[1]

Water conservation options at the refinery center on recycling water for reuse in operations throughout the facility. These include reverse osmosis to recover reject fluid from other treatment steps, boiler condensate and H2 plant condensate. A water use reduction goal of 39% is not unrealistic in the long term.[2] Because Navajo uses a large percentage of the water supply available from the City of Artesia, water use reductions at the refinery will have outsized benefits for the City and its residents.[3]

II. The Need for Disposal of Hazardous Refinery Waste by Underground Injection.

Measures to conserve and reuse water will reduce the amount of water consumed in the refinery, but the amount of any pollutants will be neither increased nor decreased. With water conservation and reuse, the same amounts of pollutants are contained in a smaller volume of water because that water is used repeatedly, and therefore the concentrations of pollutants will increase

[1] ATTACHMENT A, Direct Testimony of Michael McKee, Vice President of Refining Operations, HollyFrontier Corporation, at topic 3 (June 15, 2015) ("McKee"); ATTACHMENT B, Direct Testimony of Francisco Salvarrey, Project Engineer and Certified Floodplain Manager, Occam//EC Consulting Engineers, Inc., topics 17-21 (June 15, 2015) ("Salvarrey").

[2] McKee, topic 4.

[3] Salvarrey, topic 20.

even though the amounts remain the same. Pollutant concentrations in wastewater are used to establish limitations on wastewater discharges to surface waters, and also are used to distinguish between hazardous and non-hazardous wastes. Consequently, when water conservation and reuse measures are implemented, it becomes increasingly more costly and difficult to dispose of refinery wastes.[4]

A good example is the element Selenium, a common component of refinery wastewaters. At low levels, Selenium is beneficial, but at slightly higher levels it can be harmful to fish and other aquatic life. In order to discharge refinery wastewater to surface waters, it is necessary to employ costly treatment technologies for Selenium removal, especially in arid areas such as southeast New Mexico where receiving waters provide less flow to reduce discharged Selenium concentrations to acceptable levels. A much more safe and cost-effective approach is to dispose of those wastewaters in a Class I non-hazardous waste disposal well. When water conservation and reuse measures further concentrate Selenium in the refinery wastewaters, however, they can reach levels causing them to be classified as hazardous wastes, requiring disposal in a Class I hazardous waste well.[5] EPA's proposal would authorize New Mexico to issue UIC permits allowing the construction and operation of the necessary hazardous waste disposal wells.

III. Class I Hazardous Waste Injection Wells Are Highly Regulated and Safe.

Underground disposal of hazardous wastes in Class I UIC wells provides a technically sound and safe method of managing refinery wastewaters. EPA has said that "some waste fluids are generated in such volumes as to make treatment economically impracticable. If properly constructed and operated, injection wells are by far the best way to dispose of these waste fluids."[6] The UIC program was developed to protect underground sources of drinking water ("USDWs") for future

[4] McKee, topics 5 and 6.

[5] McKee, topic 5.

[6] ATTACHMENT C, Second Amended Petition to Amend 20.6.2.3000 NMAC and 20.6.2.5000 NMAC ("Rulemaking Petition"), Navajo Refining Company, L.L.C., at 6 (April 30, 2015).

uses. While most ground water used for drinking water in the United States contains less than 3,000 milligrams per liter ("mg/l") of total dissolved solids ("TDS"), the UIC program adds a significant safety factor by protecting ground water with up to 10,000 mg/l TDS.[7]

The UIC program defines six classes of disposal wells with varying degrees of stringency in the technical standards for well construction, depth, and operating and monitoring techniques required.[8] Class I wells are the most heavily regulated. Both non-hazardous and hazardous industrial wastes are disposed of in Class I wells, but Class I hazardous waste wells have extra requirements to ensure safety and long-term containment of injected fluids.

Among the most important additional requirements that apply to Class I hazardous waste disposal wells is the obligation for the permit applicant to demonstrate that the hazardous constituents in its wastewater will not migrate from the injection zone for 10,000 years or, in the case of wastes that are hazardous due to their characteristics, for as long as the waste remains hazardous. This must be done through computer modeling based upon geological and geochemical parameters and the attributes of the injected fluids.[9] Additional requirements also apply.

All Class I injection well permit applicants must inject into a suitable underground formation that is below the lowermost formation that contains a USDW within one-quarter mile of the well. This siting requirement entails the submission of geologic studies showing that: (i) receiving formations have the necessary permeability, porosity, homogeneity and thickness to contain the injected fluid without requiring excessive pressure; (ii) receiving formations are large enough to prevent pressure buildup; (iii) the confining zone above the injection zone has sufficiently low permeability to prevent upward migration of injected fluids; (iv) injected fluids are compatible with well materials and with

[7] Id.

[8] Id. at 7.

[9] ATTACHMENT D, Direct Testimony of Robert F. Van Voorhees, UIC Expert and Consultant to Navajo, at topic 5 (June 15, 2015) ("Van Voorhees").

rock and fluids in the injection zone; and (v) the area surrounding the well is geologically stable.[10] For hazardous waste injection wells, much more is required. Permittees also must provide studies to demonstrate that neither the injection nor the confining formation has any vertically transmissive fissures or faults capable of allowing migration of waste fluids, and that show there will be at least one sequence of permeable and less permeable strata between the injection zone and groundwater. Hazardous waste well operators must monitor for seismicity. They also must operate using a two-mile area of review rather than the quarter-mile area allowed for non-hazardous Class I wells. Within that expanded area, they must identify all known existing wells and develop a corrective action plan to ensure those wells are properly sealed, completed or abandoned.[11]

Construction requirements for hazardous waste wells also are more stringent. All Class I wells must have a multi-layered design to prevent fluids from reaching protected groundwaters; this entails two layers of concentric casing and cement, with the surface casing cemented from the surface to beneath the lowermost protected groundwaters. Hazardous wells also must have cement all the way through the confining zone, and must have detailed designs for casing, cementing, tubing, packer and completion approved in advance.[12]

For well operations, hazardous wells have an additional requirement for automatic alarm systems and shutdown if monitoring and recording devices indicate any loss of mechanical integrity.[13]

Hazardous wells have monitoring and closure requirements that go well beyond those for non-hazardous Class I wells. Instead of the mechanical integrity testing every five years required of non-hazardous wells, the integrity testing must be performed annually for hazardous wells. Pressure buildup in the injection zone also evaluated annually. Whereas all Class I wells must have approved

[10] Van Voorhees at topic 6.a.

[11] Id.

[12] Id. at topic b.

[13] Id. at topic c.

plans for plugging and abandonment at the end of their useful lives, hazardous wells also must undergo reservoir testing, flushing and post-closure groundwater monitoring until the injection pressure has diminished to the point that it cannot influence protected groundwaters.[14]

All of these extra regulatory requirements work in combination to make Class I hazardous waste disposal wells extremely safe. In fact, based on studies, EPA has concluded that "Class I underground injection wells are safer than virtually all other waste disposal practices."[15] EPA has noted that "[a]ll 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."[16]

IV. The New Mexico Regulatory Program is At Least As Stringent As EPA's Program.

In order to be approved by EPA, specific components of the proposed New Mexico program must be "at least as stringent as the corresponding [federal] provisions."[17] In many instances, EPA also has made specific federal requirements found in other EPA regulations applicable to State programs across the board.[18]

The exception to this is the no-migration requirement, discussed above. While States are authorized to seek approval for implementing this requirement, no State has done so. Consequently, the EPA regional offices implement the no-migration provisions.[19]

---

[14] Id. at topic d.

[15] Id. at topic 7 (quoting EPA, 1991 Toxics Release Inventory Public Data Release Report, EPA, 745-R-93-003, at 305 (May 1993)).

[16] Id. at topic 19 (quoting Letter from William 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).

[17] 40 C.F.R. §145.11(b)(1).

[18] 40 C.F.R. §144.52(a).

[19] Van Voorhees, at topic 11.

Review of the State's proposed rule revisions indicates that the proposed rules adopt each of the necessary requirements by directly referencing the EPA UIC regulations or by using language suitably similar to EPA's regulations.[20] Consequently, the New Mexico proposed rule is no less stringent than EPA's regulations.

The New Mexico UIC program also is more stringent than EPA's program in several respects. Whereas it is possible under the EPA program to designate aquifers with less than 10,000 mg/l TDS as injection zones, in New Mexico that is possible only for aquifers with TDS concentrations between 5,000 and 10,000 mg/l.[21] The New Mexico program also imposes additional requirements not present in the EPA program for reporting noncompliance events that may endanger public health or the environment. New Mexico has not adopted provisions of EPA's regulations that could relieve well operators of the responsibility for plugging and abandonment of Class I hazardous waste wells. And the State's rule does not permit use of the financial test for assuring financial responsibility.[22]

* * *

It is important for EPA to approve New Mexico's UIC program to authorize the permitting of Class I injection wells for disposal of hazardous wastes generated at a refinery. The Navajo refinery can make significant efforts to conserve and reuse water, with benefits to both the refinery and the community, but doing so can on occasion concentrate certain pollutants to the point that Navajo's wastewater will qualify as hazardous wastes. Rather than employing less protective and more costly surface disposal methods, the refinery would intend to inject those wastewaters into deep geological formations where they will remain sequestered for as long as they remain hazardous. The federal UIC regulatory regime is comprehensive and highly effective in ensuring that result. New Mexico's

[20] Id. at topic 12.

[21] Id., at topic 3.

[22] Id., at topic 13.

UIC program is no less stringent than the federal program, and in some respects is more stringent.

The New Mexico program should be approved.

ATTACHMENT A

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.

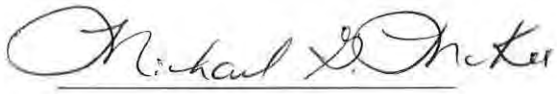
8. What additional steps would Navajo Refining have to take before operating that well as a UIC Class I hazardous waste injection well?

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

ATTACHMENT B

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

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

ATTACHMENT C

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

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[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

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[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

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[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)		

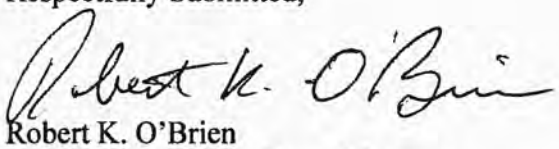
CFR Cite/Title	NMAC Cite	Notes
§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.	20.6.2.5371	Incorporated By Reference
§ 148.21 Information to be submitted in support of petitions.	20.6.2.5371	Incorporated By Reference
§ 148.22 Requirements for petition submission, review and 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
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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.

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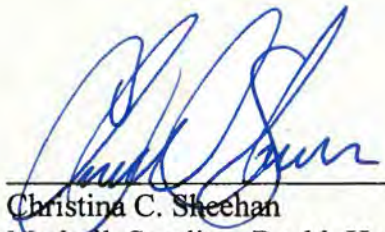

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WATER QUALITY CONTROL COMMISSION SECOND AMENDED PETITION
ATTACHMENT 1

PROPOSED WCR

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 20.6.2.5210 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 Administrator 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 206.2.5310 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 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.

(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; and

(8) the status of corrective action on wells identified in Subsection A(15) of Section 20.6.2.5360 NMAC.

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 – 20.6.2.5370: [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.

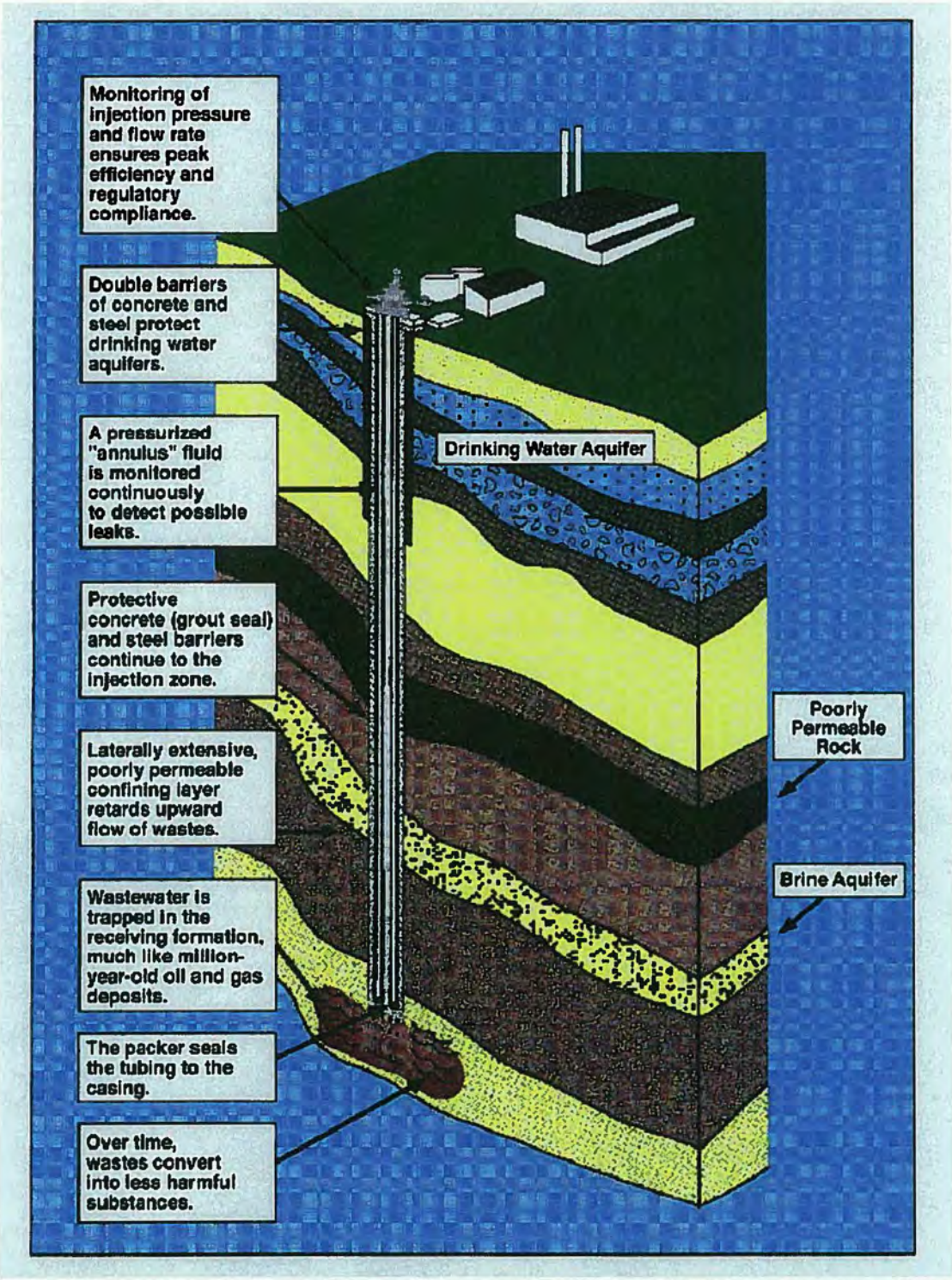
C. The following provisions of 40 CFR Part 148, Subpart B are omitted from Section 20.6.2.5371 NMAC:

(1) Section 148.15(c);

(2) Section 148.16(d).

WATER QUALITY CONTROL COMMISSION SECOND AMENDED 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).

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

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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 Wa*ste 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

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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

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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

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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

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 147

[EPA-HQ-OW-2020-0154; FRL-10015-00-OW]

State of New Mexico Underground Injection Control Program; Primacy Revisions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) proposes to approve an application from the State of New Mexico under the Safe Drinking Water Act (SDWA) to revise the state's existing Underground Injection Control (UIC) program for Class I injection wells located within the state, except those in Indian country. New Mexico has revised the state's UIC Class I program regulations to remove the current ban on Class I injection wells and establish new permit conditions, oversight, and enforcement to safely manage Class I hazardous waste disposal wells.

DATES: Comments must be received on or before [**insert date 45 days after date of publication in the Federal Register**].

ADDRESSES: You may send comments, identified by Docket ID No. EPA-HQ-OW-2020-0154, by any of the following methods:

- Federal eRulemaking Portal: https://www.regulations.gov/ (our preferred method). Follow the online instructions for submitting comments.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Water Docket, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.

- Hand Delivery or Courier (by scheduled appointment only): EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operations are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal Holidays).

Instructions: All submissions received must include the Docket ID No. EPA-HQ-OW-2020-0154 for this rulemaking. Comments received may be posted without change to https://www.regulations.gov/, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the "Public Participation" heading of the **SUPPLEMENTARY INFORMATION** section of this document. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are closed to the public, with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via https://www.regulations.gov/ or email, as there may be a delay in processing mail and faxes. Hand deliveries and couriers may be received by scheduled appointment only. For further information on EPA Docket Center services and the current status, please visit us online at https://www.epa.gov/dockets.

FOR FURTHER INFORMATION CONTACT: Kyle Carey, Drinking Water Protection Division, Office of Ground Water and Drinking Water (4606M), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460; telephone number: (202) 564-2322; fax number: (202) 564-3754; email address: carey.kyle@epa.gov, or Evelyn Rosborough, Region VI Library (6WD), U.S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Dallas, Texas 75270; telephone number: (214) 665-7515; fax: (214) 665-6490; email address:

rosborough.evelyn@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Public Participation

A. Written Comments:

Submit your comments, identified by Docket ID No. **EPA-HQ-OW-2020-0154**, at https://www.regulations.gov. or other methods identified in the **ADDRESSES** section of this document. Once submitted, comments cannot be edited or removed from the docket. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Contact EPA if you want to submit CBI; see FOR INFORMATION CONTACT section of this document. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit https://www.epa.gov/dockets/commenting-epa-dockets.

The EPA is temporarily suspending its Docket Center and Reading Room for public visitors, with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via

https://www.regulations.gov/ as there may be a delay in processing mail and faxes. Hand deliveries or couriers will be received by scheduled appointment only. For further information and updates on EPA Docket Center services, please visit us online at https://www.epa.gov/dockets.

The EPA continues to carefully and continuously monitor information from the Centers for Disease Control and Prevention (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID-19.

B. Participation in the Public Hearing

Please note that EPA may deviate from its typical approach because the President has declared a national emergency. Because of current CDC recommendations, as well as state and local orders for social distancing to limit the spread of COVID-19, EPA may not be able to hold in-person public meetings at this time.

Confirmation or cancellation of the public hearing will be announced on [**insert date 45 days after date of publication in the Federal Register**] and on EPA Region VI's website at: https://www.epa.gov/uic/new-mexico-proposed-uic-program-revision-class-i-injection-wells. For information regarding the public hearing, including a request to hold a hearing, or to speak at the hearing, please contact Evelyn Rosborough, Region VI Library (6WD), U. S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Dallas, Texas 75270; or telephone: (214) 665-7515; fax: (214) 665-6490; email: rosborough.evelyn@epa.gov.

If requested, the public hearing may be held at the Wendell Chino Building (Porter Hall, 1st floor), 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 or at

the New Mexico State Capitol, 490 Old Santa Fe Trail, Santa Fe, NM 87501. EPA may change the format and the timing of the public hearing (i.e. a virtual hearing held during regular business hours) if appropriate to protect public health in the face of COVID-19-risks. EPA will publish notice of any such change at least seven days prior to the hearing date exclusively at: https://www.epa.gov/uic/new-mexico-proposed-uic-program-revision-class-i-injection-wells.

C. Public Outreach

On [**insert date of publication in the Federal Register**], a public notice announcing this proposed approval, request for public comment, and notice of a public hearing to be held on [**insert date 45 days after date of publication in the Federal Register**], will be published in the *Albuquerque Journal*, the *Roswell Daily Record*, the *Gallup Independent*, and posted to EPA Region VI's website at: https://www.epa.gov/uic/new-mexico-proposed-uic-program-revision-class-i-injection-wells. In addition, EPA will email a link to the document published in the **Federal Register** to a statewide list of interested stakeholders.

II. Introduction

EPA approved the State of New Mexico's UIC program as meeting the requirements for primary enforcement responsibility (primacy) for Class I, III, IV, and V injection wells, under Section 1422 of the SDWA, on July 11, 1983. The State of New Mexico has revised their UIC Class I program regulations to remove the current ban on Class I hazardous waste wells and establish new permit conditions, oversight, and enforcement to safely manage Class I wells, except those in Indian country. EPA considers this to be a substantial program revision and therefore subject to the procedures specified in the *Code of Federal Regulations* (CFR) at 40

CFR 145.32(b)(2). EPA is proposing to approve New Mexico's revision to its Class I program. If approved, EPA would make conforming changes to 40 CFR 147.1601 to reflect New Mexico's revised Class I program.

EPA will continue to oversee the State of New Mexico's administration of UIC Class I, III, IV, and V programs as authorized under the SDWA. Part of EPA's oversight responsibility includes the review of required state quarterly reports of non-compliance and annual UIC performance reports pursuant to 40 CFR 144.8.

III. Legal Authorities

These proposed regulations are being promulgated under the authority of Sections 1422 and 1450 of the SDWA, 42 U.S.C. 300h-1 and 300j-9.

A. Revision of State UIC Programs

As required by Section 1421 of the SDWA, EPA promulgated minimum requirements at 40 CFR part 145 for effective state UIC programs to prevent underground injection activities that endanger underground sources of drinking water (USDWs). Under Section 1422 of the SDWA, once EPA approves a state UIC program, the state has primary enforcement responsibility for underground water sources. A state may revise its UIC program as provided under 40 CFR 145.32(a) and by following the procedures described under 40 CFR 145.32(b), which require the state to submit a modified program description, an Attorney General's statement, a Memorandum of Agreement, or other such documentation as EPA determines to be necessary under the circumstances (40 CFR 145.32(b)(1)).

B. Program Revision Effective Date

A program revision becomes effective upon approval of the Administrator (40

CFR 145.32(b)(4)). All revisions to the state UIC program would be federally enforceable as of the effective date of EPA's approval of the respective revision and 40 CFR part 147 codification. Consistent with EPA Guidance 16,[1] EPA considers state-initiated program revisions to permit a formerly banned activity under the State of New Mexico Class I UIC program to be a substantial program revision. Under EPA regulations, this means there is an opportunity for public comment and to request a public hearing (40 CFR 145.32(b)(2)).

C. Indian Country

EPA's approval of the State of New Mexico's program revision to remove the prohibition on hazardous waste injection disposal under the SDWA UIC Class I program does not extend to Indian lands. Pursuant to EPA's UIC regulations at 40 CFR 144.3, Indian lands "means 'Indian country' as defined in 18 U.S.C. 1151." EPA, or eligible Indian tribes, as appropriate, will retain responsibilities under the SDWA UIC program for Class I, III, IV, and V injection wells in Indian country in the State of New Mexico.

IV. State of New Mexico's Application

A. Notice of Completion

On May 2, 2019, EPA determined that the Agency had received a complete UIC program revision application from the State of New Mexico, in which the state requested approval of its revised UIC regulations for Class I injection wells. The full application and supplemental materials are available electronically at https://www.regulations.gov in EPA's Docket No. **EPA-HQ-OW-2020-0154**; and a copy of the application can be

[1] https://www.epa.gov/sites/production/files/2020-02/documents/attorneygeneralsstatement-31july1981.pdf

accessed for inspection and copying at: the U. S. Environmental Protection Agency Region VI Office, 1201 Elm Street, Suite 500, Dallas, Texas 75270, by contacting Evelyn Rosborough, telephone number: (214) 665-7515; fax: (214) 665-6490; email address: rosborough.evelyn@epa.gov. Public comments are requested, and a public hearing will be held if requests are received within 45 days of publication of this document (see the "Public Participation" heading in the **SUPPLEMENTARY INFORMATION** section of this document for further information on how to request a public hearing).

The UIC program revision application package from the State of New Mexico includes revisions of: 1) the description of the state's UIC program (40 CFR 145.23); 2) all applicable state statutes, regulations, and forms (40 CFR 145.22(a)(5)); 3) the Attorney General's statement that the state has adequate legal authority to carry out the program described and to meet the requirements of 40 CFR part 145; and 4) the Memorandum of Agreement between the State of New Mexico and EPA's Region VI Administrator (40 CFR 145.25).

B. Public Participation Activities Conducted by the State of New Mexico

On May 15, 2015, the New Mexico Water Quality Control Commission (WQCC or Commission) published a public notice of the Commission's intent to adopt 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 public notice was published in 15 newspapers across the State of New Mexico. Written comments on the proposed rulemaking changes were accepted between May 15, 2015, and July 14, 2015. 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 the Navajo Nation and one from New Mexico Oil Conservation Division pre-filed written testimony. At the hearing, 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.

V. Incorporation by Reference

In this action, EPA is proposing to approve the revisions to the State of New Mexico's UIC program to permit Class I hazardous waste injection wells in the state, except those in Indian lands. New Mexico's statutes and supporting documentation are publicly available in EPA's Docket at EPA-HQ-OW-2020-0154. This action proposes to amend 40 CFR part 147 and incorporate by reference EPA-approved state statutes and regulations. EPA will continue to administer the UIC program for all well classes within Indian lands.

If EPA approves and finalizes this action by rule, the provisions of New Mexico's statutes and regulations that contain standards, requirements, and procedures applicable to owners or operators of UIC Class I hazardous waste wells will be incorporated by reference into 40 CFR 147.1601 as described in the regulatory text. Provisions of the New Mexico's statutes and regulations that contain standards, requirements, and procedures applicable to owners or operators of Class I, III, IV, and V injection were incorporated by reference into 40 CFR 147.1601 through prior EPA rules but are being reapproved for this new format. Any provisions incorporated by reference, as well as all

permit conditions or permit denials issued pursuant to such provisions, will be enforceable by EPA pursuant to the SDWA section 1423 and 40 CFR 147.1(e).

In order to better serve the public, EPA is reformatting the codification of EPA-approved New Mexico SDWA section 1422 UIC program statutes and regulations for well Classes I, III, IV, and V. Instead of codifying the New Mexico statutes and regulations as separate paragraphs, EPA will be incorporating by reference a compilation that contains "EPA Approved New Mexico SDWA § 1422 Underground Injection Control Program Statutes and Regulations for Well Classes I, III, IV, and V," dated July 8, 2020. This compilation is incorporated by reference into 40 CFR 147.1601 and is available at https://www.regulations.gov in the docket for this rule

A complete list of the New Mexico statutes and regulations contained in the compilation, titled "EPA Approved New Mexico SDWA § 1422 Underground Injection Control Program Statutes and Regulations for Well Classes I, III, IV, and V," dated July 8, 2020, will also be codified in Table 1 to paragraph (a) at 40 CFR 147.1601.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at http://www2.epa.gov/laws-regulations/laws-and-executive-orders.

A. *Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review.*

This action is exempt from review by the Office of Management and Budget (OMB) because it proposes to approve the State of New Mexico's UIC Program and state UIC programs are exempt from review.

B. *Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs*

This action is not an Executive Order 13771 regulatory action because actions such as state UIC Program revisions are exempted under Executive Order 12866.

C. *Paperwork Reduction Act (PRA)*

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control number 2040-0042. Reporting or record-keeping requirements will be based on the State of New Mexico UIC Regulations, and the State of New Mexico is not subject to the PRA.

D. *Regulatory Flexibility Act (RFA)*

The agency certifies that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the small entities subject to the rule. This proposed rulemaking would not impose any requirements on small entities as this rule (when finalized) would approve and codify the State of New Mexico's UIC program revisions. We have therefore concluded that this action will have no net regulatory burden for all directly regulated small entities.

E. *Unfunded Mandates Reform Act (UMRA)*

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, or Tribal governments or the private sector. EPA's approval of the State of New Mexico's program revisions will not constitute a federal mandate because there is no requirement that a state establishes UIC regulatory programs and because the program is a state, rather than a federal program.

F. *Executive Order 13132: Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. *Executive Order 13175: Consultation and Coordination with Indian Tribal Governments*

This action does not have Tribal implications as specified in Executive Order 13175. This action contains no federal mandates for Tribal governments and does not impose any enforceable duties on Tribal governments. Thus, Executive Order 13175 does not apply to this action.

H. *Executive Order 13045: Protection of Children from Environmental Health & Safety Risks*

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in Section 2-202 of the Executive Order. This action is not subject to Executive Order

13045 because it proposes to approve existing the State of New Mexico's UIC program requirements.

I. *Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. *National Technology Transfer and Advancement Act*

This rulemaking does not involve technical standards.

K. *Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*

EPA has determined that this action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard. This action would approve the State of New Mexico's revisions to its UIC Class I program.

List of Subjects in 40 CFR Part 147

Environmental protection, Incorporation by reference, Indian lands, Intergovernmental relations, Reporting and recordkeeping requirements, Water supply.

Andrew Wheeler,
Administrator.

For the reasons set out in the preamble, the Environmental Protection Agency is proposing to amend 40 CFR part 147 as follows:

PART 147—STATE, TRIBAL, AND EPA-ADMINISTERED UNDERGROUND INJECTION CONTROL PROGRAMS

1. The authority citation for part 147 continues to read as follows:

Authority: 42 U.S.C. 300f *et seq.*; and 42 U.S.C. 6901 *et seq*.

2. Amend § 147.1601 by:

a. Revising the introductory text and paragraphs (a) and (b);

b. Adding a paragraph heading to paragraph (c) and adding paragraph (c)(3); and

c. Revising paragraph (d).

The revisions and additions read as follows:

§ 147.1601 State-administered program—Class I, III, IV, and V wells.

The UIC Program for Class I, III, IV, and V wells in the State of New Mexico except for those located on Indian lands, as defined under 40 CFR 144.3, is the program administered by the New Mexico Water Quality Control Commission, the New Mexico Environment Department (formerly the New Mexico Environmental Improvement Division), and the Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department and approved by EPA pursuant to section 1422 of the Safe Drinking Water Act (SDWA). The effective date of this program is August 10, 1983. A subsequent program revision application for Class I hazardous waste wells was approved by EPA pursuant to section 1422 of the SDWA; the effective date of this program is [DATE 30 DAYS AFTER EFFECTIVE DATE OF FINAL RULE]. The State-administered UIC programs for Classes I, III, IV, and V consist of the

following elements, as submitted to EPA in the State's program applications.

(a) *Incorporation by reference***.** The requirements set forth in the State statutes and regulations approved by EPA for inclusion in "*EPA-Approved New Mexico SDWA §1422 Underground Injection Control Program Statutes and Regulations for Well Classes I, III, IV, and V,* " dated July 8, 2020, and listed in the Table 1 to this paragraph (a) of this section are hereby incorporated by reference and made a part of the applicable UIC program under the SDWA for the State of New Mexico. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the State of New Mexico's regulations that are incorporated by reference may be inspected at the U.S. Environmental Protection Agency, Water Docket, EPA Docket Center (EPA/DC), EPA WJC West, Room 3334, 1301 Constitution Ave., NW, Washington, DC 20004, or the Region VI, Library, U. S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Dallas, Texas 75270. If you wish to obtain materials from the EPA Headquarters Library, please call the Water Docket at (202) 566-2426 or from the EPA Regional Office, please call (214) 665-8326. You may also inspect the materials at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fedreg.legal@nara.gov or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Table 1 to paragraph (a) EPA—Approved State of New Mexico SDWA §1422 Underground Injection Control Program Statutes and Regulations for Well Classes I, III, IV, and V

State citation	Title/subject	State effective date	EPA approval date
WQCC 82-1Sections 1-100 through 5-300	New Mexico Water Quality Control Commission Regulations	September 20, 1982	July 11, 1983

(b) *Other laws*. The following statutes and regulations, although not incorporated by reference, are also part of the approved State-administered UIC program:

(1) Water Quality Act, New Mexico Statutes Annotated Sections 74-6-1 through 74-6-13 (1978 and Supp. 1982);

(2) Geothermal Resources Conservation Act, New Mexico Statutes Annotated Sections 71-5-1 through 71-5-24 (1978 and Supp. 1982); and

(3) Surface Mining Act, New Mexico Statutes Annotated Sections 69-25A-1 through 69-25A-35 (1978 and Supp. 1980).

(c) *Memorandum of Agreement.*

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(3) Amendment No. 1, Underground Injection Program Substitute Memorandum of Agreement Between the State of New Mexico and United States Environmental Protection Agency Region VI, signed by the EPA Regional Administrator on May 2, 2019.

(d) *Statement of legal authority*.

(1) "Attorney General's Statement," signed by the Assistant Attorney General for the Environmental Improvement Division, the Assistant Attorney General for Oil Conservation Division, and the Deputy Attorney General, Civil Division, Counsel for the Mining and Minerals Division, undated, submitted December 8, 1982;

(2) Attorney General's Statement for Program Revision of New Mexico UIC Program, signed by Bill Brancard, Special Assistant Attorney General, State of New Mexico Energy, Minerals and Natural Resources Department, submitted December 12, 2018.

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