

**BW - 32**

**GENERAL  
CORRESPONDENCE**

**YEAR(S):**

**2007**

**Chavez, Carl J, EMNRD**

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, November 01, 2007 12:29 PM  
**To:** Bratcher, Mike, EMNRD; Macquesten, Gail, EMNRD  
**Cc:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD; Gum, Tim, EMNRD  
**Subject:** RE: Mack Brine Well NOV

Gail:

Wayne has suggested that the OCD District Office should sign the approval of the final C-103, and that he will co-sign it, since it has been approved by OCD-EB and the District Office. Once the district signs it, and the Environmental Bureau (EB) signs it, the OCD can mail the co-signed C-103 approval to Mack at your request or direction. Let us know if you don't agree. If you agree, Mike the EB would appreciate it if you could send us the C-103 with the district's approval signature for our signature and final disposition. Thank you.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
 Office: (505) 476-3491  
 Fax: (505) 476-3462  
 E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
 Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
 (Pollution Prevention Guidance is under "Publications")

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**From:** Bratcher, Mike, EMNRD  
**Sent:** Thursday, November 01, 2007 9:02 AM  
**To:** Macquesten, Gail, EMNRD; Chavez, Carl J, EMNRD  
**Cc:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD; Gum, Tim, EMNRD  
**Subject:** RE: Mack Brine Well NOV

Gail,

The PA marker is up for the Mack Energy Berry A Brine Well. Photos are on the L drive; Artesia/; pictures/; Mack Energy/; BerryA\_BrineWell. The associated tanks have also been removed.

Mike

---

**From:** Macquesten, Gail, EMNRD  
**Sent:** Tuesday, October 30, 2007 12:53 PM  
**To:** Bratcher, Mike, EMNRD; Chavez, Carl J, EMNRD  
**Cc:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD; Gum, Tim, EMNRD  
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**Cc:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD; Gum, Tim, EMNRD

11/1/2007

**Subject:** RE: Mack Brine Well NOV

The C-103 for this well is in RBDMS under BW-032

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, October 29, 2007 5:04 PM  
**To:** Bratcher, Mike, EMNRD; Macquesten, Gail, EMNRD  
**Cc:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD; Gum, Tim, EMNRD  
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Yes, I have a file BW-032 logged in RBDMS. I can look for it there. Did anyone witness the PA? Thnx.

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**Chavez, Carl J, EMNRD**

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**To:** Macquesten, Gail, EMNRD; Bratcher, Mike, EMNRD  
**Cc:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD; Gum, Tim, EMNRD  
**Subject:** RE: Mack Brine Well NOV

Gail:

According to my calculations (8.097 in. ID of casing to 415 ft. below ground and Type C Cement w/ Yield of one sack = 1.32 Ft<sup>3</sup>), I believe that Mack filled up the casing with cement as requested for a proper PA. Consequently, if district staff can confirm via e-mail in the field that the PA was completed and the dry hole marker is in place, we can approve the final C-103. Thank you.

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The C-103 for this well is in RBDMS under BW-032

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**Subject:** RE: Mack Brine Well NOV

Yes, I have a file BW-032 logged in RBDMS. I can look for it there. Did anyone witness the PA? Thnx.

Carl J. Chavez, CHMM  
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10/30/2007

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The C-103 for this well is in RBDMS under BW-032

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10/30/2007

Submit 3 Copies To Appropriate District Office  
 District I  
 1625 N French Dr., Hobbs, NM 88240  
 District II  
 1301 W Grand Ave., Artesia, NM 88210  
 District III  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 District IV  
 1220 S St Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

Form C-103  
 May 27, 2004

**S** OIL CONSERVATION DIVISION  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

WELL API NO.	
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
6. State Oil & Gas Lease No. NMNM-100443	
7. Lease Name or Unit Agreement Name Berry A Federal Brine	
8. Well Number 1	OCT 25 2007
9 OGRID Number	013837 <b>OCD-ARTESIA</b>
10. Pool name or Wildcat BSW;SALADO (96173)	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

1. Type of Well: Oil Well  Gas Well  Other Brine well

2. Name of Operator  
Mack Energy Corporation

3. Address of Operator  
P. O. Box 960 Artesia, NM 88211-0960

4. Well Location  
 Unit Letter E 1775 feet from the North line and 930 feet from the West line  
 Section 21 Township 17S Range 30E NMPM County Eddy

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
3644' GR

Pit or Below-grade Tank Application  or Closure

Pit type \_\_\_\_\_ Depth Groundwater \_\_\_\_\_ Distance from nearest fresh water well \_\_\_\_\_ Distance from nearest surface water \_\_\_\_\_

Pit Liner Thickness: \_\_\_\_\_ mtl Below-Grade Tank: Volume \_\_\_\_\_ bbls; Construction Material \_\_\_\_\_

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

<b>NOTICE OF INTENTION TO:</b>		<b>SUBSEQUENT REPORT OF:</b>	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS <input type="checkbox"/>	P AND A <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: _____ <input type="checkbox"/>		OTHER: _____ <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

10/9/2007 MIRU, lay down 26 joints stainless steel 2 3/8" tubing. Set CIBP @ 415'. RIH open ended and circulate w120sx Class C neat cement to surface. Lay down tubing and fill casing to surface. Break wellhead off and rig down.  
 10/22/2007 Set dry hole marker.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines , a general permit  or an (attached) alternative OCD-approved plan

SIGNATURE Jerry W. Sherrell TITLE Production Clerk DATE 10/25/07

Type or print name Jerry W. Sherrell E-mail address: jerry.s@mackenergycorp.com Telephone No. (505)748-1288  
 For State Use Onl

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
 Conditions of Approval (if any): \_\_\_\_\_

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Monday, September 24, 2007 2:07 PM  
**To:** 'jerrys@mackenergycorp.com'  
**Cc:** 'gorence@swcp.com'; Swazo, Sonny, EMNRD; Price, Wayne, EMNRD  
**Subject:** Berry A Federal Brine Well No. 1 Form C-103

Mr. Sherrell:

The OCD has completed its review of Form C-103 notice of intent (NOI) to plug and abandon the above subject well. The OCD hereby approves the NOI and requires a post C-103 completion report within 30 days of the plugging and abandonment. Please submit the report to the OCD Environmental Bureau (Attn: Carl Chavez) with a copy to OCD District Office 2 (Artesia). Please contact me if you have questions. Thank you.

Disclaimer: Please be advised that this e-mail does not relieve Mack Energy Corp. of responsibility should its operations pose a threat to ground water, surface water, human health or the environment. In addition, Giant is not relieved of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

9/24/2007

Submit 3 Copies To Appropriate District Office  
 District I 1625 N. French Blvd., Santa Fe, NM 87505  
 District II 1301 W. Grand Ave., Artesia, NM 88210  
 District III 1000 Rio Brazos Rd., Aztec, NM 87410  
 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

Form C-103  
 May 27, 2004

OIL CONSERVATION DIVISION  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

WELL API NO.	
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
6. State Oil & Gas Lease No NMNM-100443	
7. Lease Name or Unit Agreement Name Berry A Federal Brine	
8. Well Number 1	
9. OGRID Number 013837	
10. Pool name or Wildcat BSW;SALADO (96173)	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

1. Type of Well: Oil Well  Gas Well  Other Brine well

2. Name of Operator Mack Energy Corporation **SEP 14 2007**

3. Address of Operator **OCD-ARTESIA**  
 P. O. Box 960 Artesia, NM 88211-0960

4. Well Location  
 Unit Letter E 1775 feet from the North line and 930 feet from the West line  
 Section 21 Township 17S Range 30E NMPM County Eddy

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
 3644' GR

Pit or Below-grade Tank Application  or Closure

Pit type \_\_\_\_\_ Depth Groundwater \_\_\_\_\_ Distance from nearest fresh water well \_\_\_\_\_ Distance from nearest surface water \_\_\_\_\_

Pit Liner Thickness: \_\_\_\_\_ mil Below-Grade Tank: Volume \_\_\_\_\_ bbIs; Construction Material \_\_\_\_\_

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

<b>NOTICE OF INTENTION TO:</b>		<b>SUBSEQUENT REPORT OF:</b>	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input checked="" type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER _____ <input type="checkbox"/>		OTHER _____ <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

1. Notify OCD 24 hours prior to starting plugging operations.
2. Set CIBP @ 415', circulate cement to surface.
3. Install dry hole marker.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines , a general permit  or an (attached) alternative OCD-approved plan

SIGNATURE Jerry W. Sherrell TITLE Production Clerk DATE 8/31/07

Type or print name Jerry W. Sherrell E-mail address: jerrys@mackenergycorp.com Telephone No. (505)748-1288  
 For State Use Onl

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Conditions of Approval (if any):

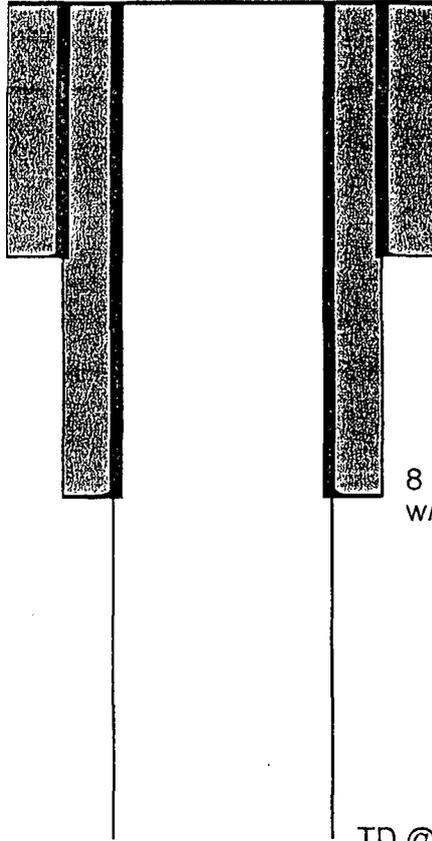


# Berry A Brine Well



8 5/8" TOC @ Surface

13 3/8" TOC @ Surface



13 3/8" casing set @ 240'  
w/250sx cmt.

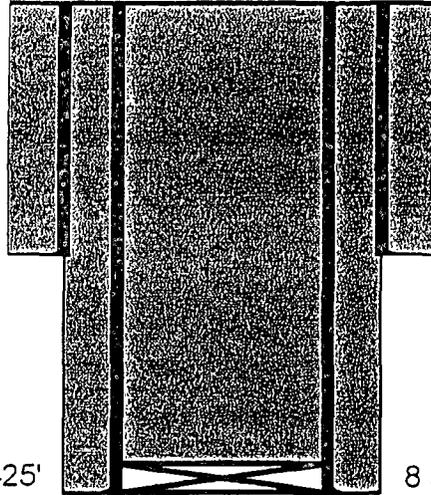
8 5/8" casing set @ 425'  
w/250sx cmt.

TD @ 696'

# Berry A Brine Well

8 5/8" TOC @ Surface

13 3/8" TOC @ Surface



13 3/8" casing set @ 240'  
w/250sx cmt.

8 5/8" CIBP @ 425'  
w/176sx cmt.

8 5/8" casing set @ 425'  
w/250sx cmt.

TD @ 696'



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

September 19, 2007

Robert J. Gorence  
Gorence & Oliveros, PC  
201 12<sup>th</sup> St., NW  
Albuquerque, NM 87102  
Email: [gorence@swcp](mailto:gorence@swcp)

Dear Mr. Gorence:

Thank you for your recent submittal of Mack Energy Corporation's plugging and abandonment proposal and C-103 Form for the Barry 'A' Federal Brine Well, 1775 feet FNL and 930 feet FWL. The Oil Conservation Division's ("OCD") District Office in Artesia has informed me that they received Mack Energy Corporation's plugging and abandonment proposal and C-103 Form for the Barry 'A' Federal Brine Well on September 14, 2007.

Because the OCD's Environmental Bureau in Santa Fe is responsible for administering the Underground Injection Control program, the Bureau will have to review and approve Mack Energy Corporation's plugging and abandonment proposal and C-103 Form for the Barry 'A' Federal Brine Well. In the future please send all documents concerning the Barry 'A' Federal Brine well to Carl Chavez in the Santa Fe Office with copies sent to the District Office in Artesia.

Please contact Carl Chavez of the OCD Environmental Bureau at (505) 476-3491 if you have any questions about the Barry 'A' Federal Brine Well.

Sincerely yours,

Sonny Swazo  
Assistant General Counsel, OCD

cc: Mark Fesmire, Director, OCD  
Wayne Price, Environmental Bureau Chief, OCD  
Carl Chavez, Environmental Engineer, OCD  
Gail MacQuesten, Assistant General Counsel, OCD

**GORENCE & OLIVEROS, P.C.**

*201 12<sup>th</sup> Street NW*

*Albuquerque, New Mexico 87102*

*(505) 244-0214 Fax (505) 244-0888*

---

**ROBERT J. GORENCE  
LOUREN OLIVEROS  
MARK PUSTAY**

September 6, 2007

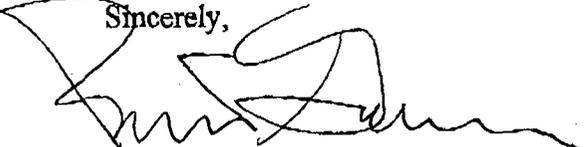
Sonny Swazo  
Assistant General Counsel, OCK  
New Mexico Energy, Minerals and  
Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE: Barry 'A' Federal Brine Well

Dear Mr. Swazo:

I am in receipt of your August 30, 2007 letter concerning the Mack Energy Corporation Barry 'A' Federal Brine Well, 1775 feet FNL and 930 feet FWL. On August 31, 2007 Mack Energy Corporation submitted its plugging and abandonment proposal with a C-103 form. When the proposal is approved, Mack Energy Corporation is prepared to plug and abandon pursuant to Environmental Bureau minimum standards. We look forward to the OCD response so that prompt action can be taken.

Sincerely,



ROBERT J. GORENCE

RJG/lh

cc: Robert Chase  
Jason Bowles, Esq.



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

August 30, 2007

Robert J. Gorence  
Gorence & Oliveros, PC  
201 12<sup>th</sup> St., NW  
Albuquerque, NM 87102  
Email: [gorence@swcp](mailto:gorence@swcp)

Dear Mr. Gorence:

The Environmental Bureau of the Oil Conservation Division ("OCD") has reviewed Mack Energy Corporation's report on the Barry 'A' Federal Brine Well, 1775 feet FNL and 930 feet FWL. The report is dated June 2007 and titled "Cavern Well Capacity Evaluation Berry 'A' Federal Brine Well." The report was prepared by Subsurface Technology, Inc. for Mack Energy Corporation to address the OCD's request for a sonar test on the brine well.

The OCD had asked for the report to determine the size, configuration, and capacity of the Berry 'A' Federal Brine Well salt cavern to assess existing or potential impacts to nearby oil and gas wells prior to the brine well being plugged and abandoned. The OCD Environmental Bureau is generally satisfied with the data presented in the report.

OCD observations based on the information presented in the report are as follows:

- (1) There is a disparity in total production data mass balance versus the modeled size of the cavern in the report. Considering both indicates that the size or configuration of the brine well cavern is nearby to existing oil and gas wells.
- (2) The brine well was constructed near the top of the Salado Salt Formation without OCD approval, which could result in a collapse at the top of the cavern due to a lack of sufficient salt roof stability which may result in a "sink" condition if operations continued. A properly constructed brine well would have penetrated at least 100 feet of casing into the Salado Formation before drilling deeper and setting string down into the Salado Salt Formation to begin brine production operations.

- (3) The brine production flow configuration of the brine well is opposite to that required by OCD requirements. Fresh water must be injected through the backside of the tubing into the well annulus with brine water produced upward through the tubing.

Consequently, the OCD requires the plugging and abandonment of the brine well. When the OCD met with Mack Energy Corporation on April 9, 2007, the OCD requested that Mack Energy Corporation submit a plugging and abandonment proposal for the Berry 'A' Federal Brine Well to the OCD by April 23, 2007. The OCD has not received Mack Energy Corporation's plugging and abandonment proposal with a C-103 form. Please have Mack Energy Corporation submit its *plugging and abandonment proposal to the OCD for review and approval by September 19, 2007, and prior to the brine well being plugged and abandoned.* The Environmental Bureau recommends at a minimum, setting a cast iron bridge plug about 10 feet above the casing shoe; filling the casing with cement to surface; and setting a permanent abandonment marker.

If you have any questions about the plugging and abandonment of the Berry 'A' Federal Brine Well, please contact Carl Chavez of the Environmental Bureau at (505) 476-3491.

Thank you for your assistance.

Sincerely yours,

Sonny Swazo  
Assistant General Counsel, OCD

cc: Mark Fesmire, Director, OCD  
Wayne Price, Environmental Bureau Chief, OCD  
Carl Chavez, Environmental Engineer, OCD  
Gail MacQuesten, Assistant General Counsel, OCD

**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, August 22, 2007 9:38 AM  
**To:** Swazo, Sonny, EMNRD  
**Cc:** Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD  
**Subject:** RE: BW-032 Mack Report & Plug and Abandonment Instructions

Sonny:

The OCD, Environmental Bureau have completed its review of the "Cavern Well Capacity Evaluation Berry 'A' Federal Brine Well" Report dated June 2007 prepared by SUBSURFACE TECHNOLOGY, INC. (SUBSURFACE). SUBSURFACE was unable to run a sonar test due to the small size of the tubing (2-3/8 inch) and ran a 1994, Version 1.5 SalGas numerical leaching simulator model in lieu of the sonar test on the brine well cavern.

On June 26, 1998, the well completed open hole from 425 feet (8-5/8 inch cemented casing shoe) to 646 feet (total depth). On June 29, 1999, the well was deepened to 696 feet and a submersible pump was set at 599 feet.

On August 17, 2001, a 2-7/8 inch injection string was set at 599 feet. Fresh water was injected down the tubing and brine was produced through the tubing-casing annulus. The OCD notes that this production flow method is not in accordance with USEPA UIC production methods where the opposite flow configuration is required to minimize the radial size, breadth and geometric configuration of the cavern.

On November 2, 2001, the 2-7/8 inch hanging string was removed from the well and replaced with a 2-3/8 inch injection string. The string was run to a depth of 590 feet in the well. Brine was extracted via solution-mining method through 2006. A total of 305,133 barrels of brine water were solution-mined from the brine well.

In their conclusions, they derived a cavern size of about 49,973 barrels (~5.6 ft<sup>3</sup>/bbl) presents a radius of about 35 ft. Based on production data and the 305,133 barrels, the estimated radius is about 62 feet. The OCD notices significant differences in estimated cavern sizes between actual production data and the computer generated model. However, the size of cavern based on estimated production, the simulated model, and the duration of production at the well present adequate information to the OCD to determine that the cavern size is proximal to nearby oil and gas wells to present concerns with the brine well location relative to nearby wells. In addition, the OCD notices that Mack constructed the brine well at the top of the Salado Salt Formation, which presents a concern over time that the formation top may continue to be scoured and dissolved. A properly constructed brine well would have penetrated at least 100 feet into the Salado Formation before setting string into the formation. Consequently, the OCD recommends immediate plugging and abandonment of the brine well to eliminate the above OCD concerns.

Class III Well plug and abandonment regulations (20.6.2 NMAC) referenced below for Mack to refer to are available on the Internet at <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0002.htm>. OCD regulations on plugging and abandonment are as follows:

**Submit an OCD C-103 Form to specify the plugging and abandonment of the brine well.**

**Class III Well Plugging and Abandonment/Well Closure Requirements:**

**1. Plugging and Abandonment Plan Requirements**

As specified in **Regulation 5209**, operators shall submit a plan for plugging and abandonment of the well which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. If requested, a revised or updated plan shall be submitted for approval prior to closure.

a. **Regulation 5209** specifies methods required for plugging, and what information will be considered by the Director in determining the adequacy of a plugging and abandonment plan.

8/22/2007

**20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

**A.** The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I non-hazardous waste injection well or a Class III well that meets the requirements of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

**B.** Prior to abandonment of a well used in a Class I non-hazardous waste injection well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

**C.** Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

**D.** Placement of the plugs shall be accomplished by one of the following:

- (1) The Balance Method; or
- (2) The Dump Bailer Method; or
- (3) The Two-Plug Method; or
- (4) An equivalent method with the approval of the secretary.

**E.** The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan.

- (1) The type and number of plugs to be used;
- (2) The placement of each plug, including the elevation of the top and bottom;
- (3) The type, grade and quantity of cementing slurry to be used;
- (4) The method of placement of the plugs;
- (5) The procedure to be used to plug and abandon the well; and
- (6) Such other factors that may affect the adequacy of the plan.

**F.** The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

[9-20-82, 12-1-95; 20.6.2.5209 NMAC - Rn, 20 NMAC 6.2.V.5209, 1-15-01; A, 12-1-01]

b. For Class III wells only, **Regulation 5101.C** requires the Discharge Permit Application to 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 of contaminants in excess of the Human Health Standards specified in **Regulation 3103.A** or any toxic pollutant.

**2. Pre-closure Notification Requirements**

As specified in **Regulation 5005**, an operator must submit a pre-closure notification to the Division at least 30 days prior to closure.

a. The Division must also be notified when injection is discontinued into any well for a period in excess of six months.

b. **Regulation 5005** specifies the information that must be submitted in the preclosure notification.

c. Well closure procedures must be approved by the Division prior to being implemented.

**OCD generally recommended plug and abandonment guidelines for brine wells with adherence to the above regulations are as follows:**

- 1) **Set cast iron bridge plug about 10 feet above the casing shoe.**
- 2) **Fill casing with cement to surface.**
- 3) **Set permanent abandonment marker.**

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
 Office: (505) 476-3491  
 Fax: (505) 476-3462  
 E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
 Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
 (Pollution Prevention Guidance is under "Publications")

**From:** Swazo, Sonny, EMNRD  
**Sent:** Tuesday, August 21, 2007 4:08 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Mack Report

Hi Carl:

I will be drafting our response to Mack about their report and I wanted to know if there is any specific information about how the brine well should be plug that you want me to communicate to Mack in our response.

Sonny

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, August 09, 2007 11:40 AM  
**To:** Sanchez, Daniel J., EMNRD  
**Cc:** Fesmire, Mark, EMNRD; Swazo, Sonny, EMNRD; Macquesten, Gail, EMNRD; Price, Wayne, EMNRD  
**Subject:** FW: Mack Report

Daniel:

Just a follow-up message after discussing the Mack Brine Well with Mark Fesmire, he requested that the EB follow-up with you to make sure Mack submits a plugging and abandonment plan for the brine well. The main goal of the EB is to review the plan and get the well properly plugged and abandoned ASAP. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
 New Mexico Energy, Minerals & Natural Resources Dept.  
 Oil Conservation Division, Environmental Bureau  
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
 Office: (505) 476-3491  
 Fax: (505) 476-3462  
 E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
 Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
 (Pollution Prevention Guidance is under "Publications")

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, August 08, 2007 12:46 PM  
**To:** Swazo, Sonny, EMNRD  
**Cc:** Price, Wayne, EMNRD; Macquesten, Gail, EMNRD  
**Subject:** RE: Mack Report

Sonny:

Hi. The Environmental Bureau have no questions regarding the report. We do hope that someone follows up with

8/22/2007

Mack to make sure we get a plug and abandonment plan to review so we can get that well PA'd ASAP. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Swazo, Sonny, EMNRD  
**Sent:** Wednesday, August 08, 2007 11:41 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Price, Wayne, EMNRD  
**Subject:** RE: Mack Report

Hi Carl:

My question primarily concerned Mack's report and the information contained therein. Gail had asked me to talk to you and/or Wayne about whether, based on your review of the report, we had any questions about the information contained in the report and needed Mack to provide us with additional information to answer those questions (my understanding is that the PA plan was not part of the report and would be addressed at a later date). If you folks had anything that you wanted us to follow-up on based on your review of the information contained in the Mack report, then I would draft a letter to Mack asking for that information.

Do you folks have any questions regarding the information in Mack's report that you need Mack to clarify?

Thanks,

Sonny

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, August 07, 2007 8:15 AM  
**To:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD  
**Subject:** RE: Mack Report

Hey Sonny:

The report submitted on Friday, August 7, 2007 provided a cylindrical model estimation of cavern size with a radius of about 30 ft. Based on discussions with Wayne, we seek the plug and abandonment plan (PA Plan) for the brine well. Mack was supposed to submit one, but apparently got caught up in the brine cavern size assessment, which we also requested in a previous meeting.

Proper plugging and abandonment of the brine well is the only real concern of the EB right now. The sooner they can submit a PA Plan to the EB, the sooner we can review it and hopefully approve it or with conditions and get the well PA'd ASAP. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

8/22/2007

Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

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**From:** Swazo, Sonny, EMNRD  
**Sent:** Monday, August 06, 2007 2:31 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** Mack Report

Wayne and Carl:

After you have reviewed the report that Mack provided us Friday, I would like to talk to you about the report. Specifically, I would like to know what further information you need from Mack.

Thanks,

Sonny

8/22/2007

**Chavez, Carl J, EMNRD**

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, August 09, 2007 11:40 AM  
**To:** Sanchez, Daniel J., EMNRD  
**Cc:** Fesmire, Mark, EMNRD; Swazo, Sonny, EMNRD; Macquesten, Gail, EMNRD; Price, Wayne, EMNRD  
**Subject:** FW: Mack Report

Daniel:

Just a follow-up message after discussing the Mack Brine Well with Mark Fesmire, he requested that the EB follow-up with you to make sure Mack submits a plugging and abandonment plan for the brine well. The main goal of the EB is to review the plan and get the well properly plugged and abandoned ASAP. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, August 08, 2007 12:46 PM  
**To:** Swazo, Sonny, EMNRD  
**Cc:** Price, Wayne, EMNRD; Macquesten, Gail, EMNRD  
**Subject:** RE: Mack Report

Sonny:

Hi. The Environmental Bureau have no questions regarding the report. We do hope that someone follows up with Mack to make sure we get a plug and abandonment plan to review so we can get that well PA'd ASAP. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
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**Cc:** Price, Wayne, EMNRD  
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8/9/2007

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Do you folks have any questions regarding the information in Mack's report that you need Mack to clarify?

Thanks,

Sonny

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, August 07, 2007 8:15 AM  
**To:** Swazo, Sonny, EMNRD; Price, Wayne, EMNRD  
**Subject:** RE: Mack Report

Hey Sonny:

The report submitted on Friday, August 7, 2007 provided a cylindrical model estimation of cavern size with a radius of about 30 ft. Based on discussions with Wayne, we seek the plug and abandonment plan (PA Plan) for the brine well. Mack was supposed to submit one, but apparently got caught up in the brine cavern size assessment, which we also requested in a previous meeting.

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**From:** Swazo, Sonny, EMNRD  
**Sent:** Monday, August 06, 2007 2:31 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** Mack Report

Wayne and Carl:

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Sonny

8/9/2007

**Chavez, Carl J, EMNRD**

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**From:** Swazo, Sonny, EMNRD  
**Sent:** Monday, August 06, 2007 2:31 PM  
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Wayne and Carl:

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Thanks,

Sonny

8/9/2007

**Chavez, Carl J, EMNRD**

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8/9/2007

**Chavez, Carl J, EMNRD**

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**From:** Swazo, Sonny, EMNRD  
**Sent:** Wednesday, August 08, 2007 1:00 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** RE: Mack Report

Thanks Carl.

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, August 08, 2007 12:46 PM  
**To:** Swazo, Sonny, EMNRD  
**Cc:** Price, Wayne, EMNRD; Macquesten, Gail, EMNRD  
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Sonny

8/9/2007

**Chavez, Carl J, EMNRD**

---

**From:** Jason Bowles [jason@bowlesandcrow.com]  
**Sent:** Friday, July 27, 2007 12:59 PM  
**To:** Macquesten, Gail, EMNRD  
**Cc:** Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** RE: Follow up on Brine well issues - Mack energy

Thanks Gail!

---

**From:** Macquesten, Gail, EMNRD [mailto:gail.macquesten@state.nm.us]  
**Sent:** Friday, July 27, 2007 12:48 PM  
**To:** Jason Bowles  
**Cc:** Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** RE: Follow up on Brine well issues - Mack energy

Jason – That should be fine. I'll copy everyone involved from OCD on this message, so they can let me know if that's a problem. Gail

---

**From:** Jason Bowles [mailto:jason@bowlesandcrow.com]  
**Sent:** Friday, July 27, 2007 11:51 AM  
**To:** Macquesten, Gail, EMNRD  
**Subject:** RE: Follow up on Brine well issues - Mack energy

Gail – can we actually move this meeting to the afternoon that day, say around 1:30 or so? If not no problem but I was just wondering so that Bob Gorence could also be there. Jason.

---

**From:** Macquesten, Gail, EMNRD [mailto:gail.macquesten@state.nm.us]  
**Sent:** Thursday, July 26, 2007 4:15 PM  
**To:** Jason Bowles  
**Subject:** RE: Follow up on Brine well issues - Mack energy

Jason – Mark asked if it would be possible for you to bring a technical person to the meeting next Friday. We may have some questions about the brine cavern report that a technical person would be able to answer for us. Thanks- Gail

---

**From:** Jason Bowles [mailto:jason@bowlesandcrow.com]  
**Sent:** Wednesday, July 25, 2007 3:58 PM  
**To:** Macquesten, Gail, EMNRD  
**Cc:** BJ Crow; rjgfirm@swcp.com  
**Subject:** RE: Follow up on Brine well issues - Mack energy

Gail what about next Friday around 10:30?

---

**From:** Macquesten, Gail, EMNRD [mailto:gail.macquesten@state.nm.us]  
**Sent:** Wednesday, July 25, 2007 3:46 PM  
**To:** Jason Bowles  
**Subject:** RE: Follow up on Brine well issues - Mack energy

8/9/2007

Jason – Wayne, Carl, Daniel and I can be available for a meeting any time on Friday, August 3, or on Monday July 30 before 10 am or after 3 pm. Gail

---

**From:** Jason Bowles [mailto:jason@bowlesandcrow.com]  
**Sent:** Tuesday, July 17, 2007 10:53 AM  
**To:** Fesmire, Mark, EMNRD; Macquesten, Gail, EMNRD  
**Cc:** BJ Crow; rjgfirm@swcp.com  
**Subject:** Follow up on Brine well issues - Mack energy

Mark and Gail:

I sent an email last week regarding the brine well issue for Mack Energy. We got the report back on the brine well cavern size and wanted to deliver a copy to you. When would a good time and date be for us to do so? The cavern is 33 feet in diameter at its widest point and therefore has not come close at this point to the adjacent oil well. Jason.

---

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**Chavez, Carl J, EMNRD**

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**From:** Macquesten, Gail, EMNRD  
**Sent:** Wednesday, July 25, 2007 4:11 PM  
**To:** 'Jason Bowles'  
**Cc:** Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** RE: Follow up on Brine well issues - Mack energy

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**From:** Macquesten, Gail, EMNRD  
**Sent:** Wednesday, July 25, 2007 3:18 PM  
**To:** Price, Wayne, EMNRD; Chavez, Carl J, EMNRD  
**Subject:** FW: Follow up on Brine well issues - Mack energy

FYI

---

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**To:** Fesmire, Mark, EMNRD; Macquesten, Gail, EMNRD  
**Cc:** BJ Crow; rjgfirm@swcp.com  
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# Appendix D: Major Federal, State, and County Authorizing Actions

A series of statutes—Federal, State, and county—establish and define the authority of the Forest Service to make decisions regarding fluid minerals leasing and development. The major relevant statutes are briefly described below.

Agency and Permit/Approval	Nature of Action	Authority	Application
<b>USDA Forest Service</b>			
Decision record for proposed action	Evaluate environmental impacts of proposed action.	National Environmental Policy Act (NEPA)	Proposed Federal action
Mineral leasing and surface use plan of operations	Approval authority for leasing public domain minerals on National Forest System lands and management authority over surface resources for oil and gas operations.	Leasing Reform Act of 1987; 1947 Mineral Leasing Act for Acquired Lands, as amended; 36 Code of Federal Regulations (CFR) Parts 228 and 261; Forest Service Manual 2820	Proposed mineral leases and applications for permits to drill
Mineral lease stipulations or restrictions	Grant right to use the surface as necessary for mineral extraction operations, subject to restrictions to minimize adverse impacts to resource values and uses.	43 CFR 3101; National Forest Management Act of 1976	Standards and guidelines for mineral extraction operations
Sale of mineral lease	Authorize the leasing of unleased land parcels within the National Forest System.	36 CFR 228 Subpart E (228.102)	Proposed leasing of national forest lands
Rights-of-way	Grant right-of-way and potentially evaluate the environmental impacts of proposed action.	NEPA; Mineral Leasing Act of 1920	Pipeline, electrical lines, access roads
Notice of intent to conduct geophysical exploration	Protect resource values during geophysical exploration activities.	Mineral Leasing Act of 1920	Proposed action
Approval to dispose of produced water	Controls disposal of produced water from Federal leases.	Mineral Leasing Act of 1920; Regulatory controls under 43 CFR 3160	Well
Authorization for flaring and venting of gas	Regulates flaring and venting of gas.	Mineral Leasing Act of 1920; Regulatory controls under 43 CFR 3160	Well testing and evaluation

Agency and Permit/Approval	Nature of Action	Authority	Application
Temporary abandonment of a well	Regulates temporary abandonment of wells.	Mineral Leasing Act of 1920; Regulatory controls under 43 CFR 3160	Successful well
Plugging and abandonment of a well	Establishes procedures for permanent abandonment.	Mineral Leasing Act of 1920; Regulatory controls under 43 CFR 3160	Dry hole
<b>USDI Bureau of Land Management</b>			
Permit to drill	Provide for compliance with regulations and requirements during drilling and completion phases of the well.	Mineral Leasing Act of 1920; Federal Oil and Gas Royalty Management Act of 1982; Secretarial Order No. 3087; Amendment No. 1, February 7, 1983; Regulatory controls under 43 CFR 3160	Proposed injection wells and oil and gas wells
Permit to use earthen pit (part of application for permit to drill)	Regulates reserve pits on drilling location.	Mineral Leasing Act of 1920; Regulatory controls under 43 CFR 3160	Well
<b>U.S. Army Corps of Engineers</b>			
Section 404 permit	Issue a permit for placement of fill or dredge materials in waters of the United States or adjacent wetlands.	Section 404, Clean Water Act (CWA)	Pipeline, road, proposed actions in waters of the United States
<b>U.S. Fish and Wildlife Service</b>			
Consultation process, threatened or endangered species	Review potential impacts on federally listed and candidate threatened and endangered species.	Section 7 of the Endangered Species Act	Federal action
<b>U.S. Environmental Protection Agency</b>			
Stormwater discharge permits (National Pollutant Discharge Elimination System permits)—Administered by New Mexico Water Quality Control Commission	Regulate discharge to surface waters from point sources.	Federal Water Pollution Control Act Amendments and Section 404(p) of CWA	Construction activities disturbing one or more acres
Permit for approval to dispose produced water (also must be approved by the surface management agency)	Issue permit to allow underground injection of produced water.	Federal Safe Drinking Water Act; 40 CFR Parts 144 and 147	Underground injection control

Agency and Permit/Approval	Nature of Action	Authority	Application
Underground Injection Control permit—Administered by the Oil Conservation Division of the New Mexico Energy and Minerals Department	Ensure potable aquifers are not adversely affected by injection of produced water.	Federal Safe Drinking Water Act Underground Injection Control program (40 CFR Parts 144 and 146.22 and 40 CFR Parts 100 to 149, July 1, 1991 revision); Onshore Order No. 7	New injection well
Spill prevention, control, and countermeasure plan	Pollution control	40 CFR Part 112	Drilling operations
<b>New Mexico State Historic Preservation Officer</b>			
Cultural resource clearance	Review and consultation.	Historic Preservation Act of 1966; State Cultural Properties Act of 1977	All proposed action components
<b>New Mexico State Engineer Office</b>			
Permit to appropriate ground water within declared ground water basins; approval to use surface water rights	Regulate ground water use, permit for water wells; regulate surface water use, surface water right.	New Mexico Oil and Gas Act; Water Quality Act; NM State Constitution (surface water rights)	All well development
<b>New Mexico Energy, Minerals, and Natural Resources Department – Oil Conservation Division</b>			
Permit to drill, re-enter, deepen, plugback, or add a zone (Form C-101)	Permit new wells.	New Mexico Oil and Gas Act	New well development
Request for allowable and authorization to transport oil and natural gas (Form C-104)	Permit new wells.	New Mexico Oil and Gas Act	New well development
Spill report	Notification of fire, breaks, leaks, spills, and blowouts.	OCD Rule 116	In the event of fire, breaks, leaks, spills, and blowouts at drilling operations
<b>New Mexico Environment Department – Air Quality Bureau</b>			
Air emission permits	Permit new sources.	Clean Air Act	Combustion sources, compressors, volatile chemical handling, storage piles, and storage tanks

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

**20.6.2.1 ISSUING AGENCY:** Water Quality Control Commission  
[12-1-95; 20.6.2.1 NMAC - Rn, 20 NMAC 6.2.1.1000, 1-15-01]

**20.6.2.2 SCOPE:** All persons subject to the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.  
[12-1-95; 20.6.2.2 NMAC - Rn, 20 NMAC 6.2.1.1001, 1-15-01]

**20.6.2.3 STATUTORY AUTHORITY:** Standards and Regulations are adopted by the commission under the authority of the Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17.  
[2-18-77, 9-20-82, 12-1-95; 20.6.2.3 NMAC - Rn, 20 NMAC 6.2.1.1002, 1-15-01]

**20.6.2.4 DURATION:** Permanent.  
[12-1-95; 20.6.2.4 NMAC - Rn, 20 NMAC 6.2.1.1003, 1-15-01]

**20.6.2.5 EFFECTIVE DATE:** December 1, 1995 unless a later date is cited at the end of a section.  
[12-1-95, 11-15-96; 20.6.2.5 NMAC - Rn, 20 NMAC 6.2.1.1004, 1-15-01; A, 1-15-01]

**20.6.2.6 OBJECTIVE:** The objective of this Part is to implement the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.  
[12-1-95; 20.6.2.6 NMAC - Rn, 20 NMAC 6.2.1.1005, 1-15-01]

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

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

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

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

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

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

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

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

**H. "cesspool"** means a "drywell" that receives untreated domestic liquid waste containing human excreta, and which sometimes has an open bottom and/or perforated sides; a large capacity cesspool means a cesspool that receives greater than 2,000 gallons per day of untreated domestic liquid waste;

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

**J. "commission"** means:

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 NMAC include notification requirements, and requirements for discharges directly into the subsurface through underground injection control wells.  
[20.6.2.5001 NMAC - N, 12-1-01]

**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, 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 greater than 2,000 gallons per day of treated domestic liquid waste through subsurface fluid distribution systems or vertical wells;
  - (ii) septic system wells used to emplace greater than 2,000 gallons per day of domestic liquid waste into the subsurface, which are comprised of a septic tank and subsurface fluid distribution system;
  - (iii) large capacity cesspools used to inject greater than 2,000 gallons per day of domestic liquid waste, 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;

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

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

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

**B.** Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.  
[20.6.2.5004 NMAC - N, 12-1-01]

**20.6.2.5005 PRE-CLOSURE NOTIFICATION AND CLOSURE REQUIREMENTS:**

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

- (1) Name of facility
- (2) Address of facility
- (3) Name of Owner/Operator
- (4) Address of Owner/Operator
- (5) Contact Person
- (6) Phone Number
- (7) Type of Well(s)
- (8) Number of Well(s)
- (9) Well Construction (e.g. drywell, improved sinkhole, septic tank, leachfield, cesspool, other...)
- (10) Type of Discharge
- (11) Average Flow (gallons per day)
- (12) Year of Well Construction
- (13) Proposed Well Closure Activities (e.g. sample fluids/sediment, appropriate disposal of remaining fluids/sediments, remove well and any contaminated soil, clean out well, install permanent plug, conversion to other type well, ground water and vadose zone investigation, other)
- (14) Proposed Date of Well Closure
- (15) Name of Preparer
- (16) Date

**B.** Proposed well closure activities must be approved by the department prior to implementation.  
[20.6.2.5005 NMAC - N, 12-1-01]

**20.6.2.5006 DISCHARGE PERMIT REQUIREMENTS FOR CLASS V INJECTION WELLS**

Class V injection wells must meet the requirements of Sections 20.6.2.3000 through 20.6.2.3999 NMAC and Sections 20.6.2.5000 through 20.6.2.5006 NMAC.

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

**20.6.2.5007 - 20.6.2.5100: [RESERVED]**

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

**20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I 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 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 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 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 receive less than 2,000 gallons per day of domestic sewage effluent and are regulated under the "Liquid Waste Disposal 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) The signature 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 NMAC for the following causes:

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

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

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

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

#### **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 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.

[9-20-82, 12-24-87, 12-1-95; 20.6.2.5102 NMAC - Rn, 20 NMAC 6.2.V.5102, 1-15-01; A, 12-1-01]

#### **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 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 NMAC. Persons, other than the original petitioner or his designee, requesting addition of water contaminants as a result of injection into aquifers previously designated only for injection with partial restoration shall file a petition with the commission pursuant to the requirements of Subsections A, B, C, and D of this Section.

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

**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 NMAC; or
- (2) For Class III wells only, issue a discharge permit pursuant to the requirements of Sections 20.6.2.3000 through 20.6.2.3114 NMAC.

**B.** Authorization of a reduction in requirements under Subsection A of this Section shall be granted only if injection will not result in an increased risk of movement of fluids into ground water having 10,000 mg/l or less TDS, except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

[9-20-82, 12-1-95; 20.6.2.5104 NMAC - Rn & A, 20 NMAC 6.2.V.5104, 1-15-01; A, 12-1-01]

**20.6.2.5105 - 20.6.2.5199: [RESERVED]**

[12-1-95; 20.6.2.5105 - 20.6.2.5199 NMAC - Rn, 20 NMAC 6.2.V.5105-5199, 1-15-01]

**20.6.2.5200 TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

[12-1-95; 20.6.2.5200 NMAC - Rn, 20 NMAC 6.2.V.5200, 1-15-01; A, 12-1-01]

**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.

[9-20-82; 20.6.2.5201 NMAC - Rn, 20 NMAC 6.2.V.5201, 1-15-01; A, 12-1-01]

**20.6.2.5202 AREA OF REVIEW:**

**A.** The area of review is the area surrounding a Class I non-hazardous waste injection well or Class III well or the area within and surrounding a well field that is to be examined to identify possible fluid conduits, including the location of all known wells and fractures which may penetrate the injection zone.

**B.** The area of review for each Class I non-hazardous waste injection well, or each Class III well or well field shall be an area which extends:

(1) Two and one half (2 1/2) miles from the well, or well field; or

(2) One-quarter (1/4) mile from a well or well field where the area of review is calculated to be zero pursuant to Paragraph (3) of Subsection B below, or where the well field production at all times exceeds injection to produce a net withdrawal; or

(3) A suitable distance, not less than one-quarter (1/4) mile, proposed by the discharger and approved by the secretary, based upon a mathematical calculation to determine the area of review. Computations to determine the area of review may be based upon the parameters listed below and should be calculated for an injection time period equal to the expected life of the Class I non-hazardous waste injection well, or Class III well or well field.

The following modified Theis equation illustrates one form which the mathematical model may take to compute the area of review; the discharger must demonstrate that any equation or simulation used to compute the area of review applies to the hydrogeologic conditions in the area of review.

$$r = \left( \frac{2.25KHt}{S10^x} \right)^{1/2}$$

Where:

- x =  $\frac{4\pi KH (H_w - H_{b0})x S_p G_b}{2.3 Q}$
- r = Radius of the area of review for a Class I non-hazardous waste injection well or Class III well (length)
- K = Hydraulic conductivity of the injection zone (length/time)
- H = Thickness of the injection zone (length)
- t = Time of injection (time)
- S = Storage coefficient (dimensionless)
- Q = Injection rate (volume/time)
- H<sub>b0</sub> = Observed original hydrostatic head of injection zone (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS
- H<sub>w</sub> = Hydrostatic head of underground source of drinking water (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS
- S<sub>p</sub>G<sub>b</sub> = Specific gravity of fluid in the injection zone (dimensionless)
- π = 3.142 (dimensionless)

- (4) The above equation is based on the following assumptions:
- (a) The injection zone is homogenous and isotropic;
  - (b) The injection zone has infinite areal extent;
  - (c) The Class I non-hazardous waste injection well or Class III well penetrates the entire thickness of the injection zone;
  - (d) The well diameter is infinitesimal compared to "r" when injection time is longer than a few minutes; and
  - (e) The emplacement of fluid into the injection zone creates an instantaneous increase in pressure.

C. The secretary shall require submittal by the discharger of information regarding the area of review including the information to be considered by the secretary in Subsection B of Section 20.6.2.5210 NMAC. [9-20-82, 12-1-95; 20.6.2.5202 NMAC - Rn, 20 NMAC 6.2.V.5202, 1-15-01; A, 12-1-01]

**20.6.2.5203 CORRECTIVE ACTION FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

A. Persons applying for approval of a Class I non-hazardous waste injection well, or a Class III well or well field shall identify the location of all known wells, drill holes, shafts, stopes and other conduits within the area of review which may penetrate the injection zone, in so far as is known or is reasonably available from the public records. For such wells or other conduits which are improperly sealed, completed, or abandoned, or otherwise provide a pathway for the migration of contaminants, the discharger shall address in the proposed discharge plan such steps or modifications (corrective action) as are necessary to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

B. Prior to operation, or continued operation of a well for which corrective action is required pursuant to Subsections A or D of Section 20.6.2.5203 NMAC, the discharger must demonstrate that:

- (1) All required corrective action has been taken; or
- (2) Injection pressure is to be limited so that pressure in the injection zone does not cause fluid movement through any well or other conduit within the area of review into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC. This pressure limitation may be removed after all required corrective action has been taken.

C. In determining the adequacy of corrective action proposed in the discharge permit application, the following factors will be considered by the secretary:

- (1) Chemical nature and volume of the injected fluid;
- (2) Chemical nature of native fluids and by-products of injection;
- (3) Geology and hydrology;
- (4) History of the injection and production operation;
- (5) Completion and plugging records;
- (6) Abandonment procedures in effect at the time a well, drill hole, or shaft was abandoned; and
- (7) Hydraulic connections with waters having 10,000 mg/l or less TDS

D. In the event that, after approval for a Class I non-hazardous waste injection well or Class III well has been granted, additional information is submitted or it is discovered that a well or other conduit within the applicable area of review might allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, the secretary may require action in accordance with Subsection I of Section 20.6.2.5101 and Subsection B Section 20.6.2.5203 NMAC. [9-20-82, 12-1-95; 20.6.2.5203 NMAC - Rn, 20 NMAC 6.2.V.5203, 1-15-01; A, 12-1-01]

**20.6.2.5204 MECHANICAL INTEGRITY FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

A. A Class I non-hazardous waste injection well or Class III well has mechanical integrity if there is no detectable leak in the casing, tubing or packer which the secretary considers to be significant at maximum operating temperature and pressure; and no detectable conduit for fluid movement out of the injection zone through the well bore or vertical channels adjacent to the well bore which the secretary considers to be significant.

B. Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that a Class I non-hazardous waste injection well or Class III well has mechanical integrity. The demonstration shall be made through use of the following tests:

- (1) For evaluation of leaks,
  - (a) Monitoring of annulus pressure (after an initial pressure test with liquid or gas before operation commences), or
  - (b) Pressure test with liquid or gas;
- (2) For determination of conduits for fluid movement,
  - (a) The results of a temperature or noise log, or
  - (b) Where the nature of the casing used for Class III wells precludes use of these logs, cementing records and an appropriate monitoring program as the secretary may require which will demonstrate the presence of adequate cement to prevent such movement;
- (3) Other appropriate tests as the secretary may require.

**C.** The secretary may consider the use by the discharger of equivalent alternative test methods to determine mechanical integrity. The discharger shall submit information on the proposed test and all technical data supporting its use. The secretary may approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. For Class III wells this demonstration may be made by submission of adequate monitoring data after the initial mechanical integrity tests.

**D.** In conducting and evaluating the tests enumerated in this Section or others to be allowed by the secretary, the discharger and the secretary shall apply methods and standards generally accepted in the affected industry. When the discharger reports the results of mechanical integrity tests to the secretary, he shall include a description of the test(s), the method(s) used, and the test results. In making an evaluation, the secretary's review shall include monitoring and other test data submitted since the previous evaluation.

[9-20-82, 12-1-95; 20.6.2.5204 NMAC - Rn, 20 NMAC 6.2.V.5204, 1-15-01; A, 12-1-01]

**20.6.2.5205 CONSTRUCTION REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

**A.** General Construction Requirements Applicable to Class I non-hazardous waste injection wells and Class III wells.

(1) Construction of all Class I non-hazardous waste injection wells and all new Class III wells shall include casing and cementing. Prior to well injection, the discharger shall demonstrate that the construction and operation of:

- (a) Class I non-hazardous waste injection wells will not cause or allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC;

- (b) Class III wells will not cause or allow movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(2) The construction of each newly drilled well shall be designed for the proposed life expectancy of the well.

(3) In determining if the discharger has met the construction requirements of this Section and has demonstrated adequate construction, the secretary shall consider the following factors:

- (a) Depth to the injection zone;
- (b) Injection pressure, external pressure, annular pressure, axial loading, and other stresses that may cause well failure;

- (c) Hole size;
- (d) Size and grade of all casing strings, including wall thickness, diameter, nominal weight, length, joint specification, and construction material;

- (e) Type and grade of cement;
- (f) Rate, temperature, and volume of injected fluid;
- (g) Chemical and physical characteristics of the injected fluid, including corrosiveness, density, and temperature;

- (h) Chemical and physical characteristics of the formation fluids including pressure and temperature;

- (i) Chemical and physical characteristics of the receiving formation and confining zones including lithology and stratigraphy, and fracture pressure; and

- (j) Depth, thickness and chemical characteristics of penetrated formations which may contain ground water.

(4) To demonstrate adequate construction, appropriate logs and other tests shall be conducted during the drilling and construction of new Class I non-hazardous waste injection wells or Class III wells or during work-over of existing wells in preparation for reactivation or for change to injection use. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the secretary for review prior to well injection. The logs and tests appropriate to each type of injection well shall be based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses.

(a) The discharger shall demonstrate through use of sufficiently frequent deviation checks, or another equivalent method, that a Class I non-hazardous waste injection well or Class III well drilled using a pilot hole then enlarged by reaming or another method, does not allow a vertical avenue for fluid migration in the form of diverging holes created during drilling.

(b) The secretary may require use by the discharger of the following logs to assist in characterizing the formations penetrated and to demonstrate the integrity of the confining zones and the lack of vertical avenues for fluid migration:

(i) For casing intended to protect ground water having 10,000 mg/l or less TDS: Resistivity, spontaneous potential, and caliper logs before the casing is installed; and a cement bond, or temperature log after the casing is set and cemented.

(ii) For intermediate and long strings of casing intended to facilitate injection: Resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed; and fracture finder or spectral logs; and a cement bond or temperature log after the casing is set and cemented.

(5) In addition to the requirements of Section 20.6.2.5102 NMAC, the discharger shall provide notice prior to commencement of drilling, cementing and casing, well logging, mechanical integrity tests, and any well work-over to allow opportunity for on-site inspection by the secretary or his representative.

**B. Additional Construction Requirements for Class I non-hazardous waste injection wells.**

(1) All Class I non-hazardous waste injection wells shall be sited in such a manner that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, ground water having 10,000 mg/l TDS or less except as approved pursuant to Section 20.6.2.5103 NMAC.

(2) All Class I non-hazardous waste injection wells shall be cased and cemented by circulating cement to the surface.

(3) All Class I non-hazardous waste injection wells, except those municipal wells injecting noncorrosive wastes, shall inject fluids through tubing with a packer set in the annulus immediately above the injection zone, or tubing with an approved fluid seal as an alternative. The tubing, packer, and fluid seal shall be designed for the expected length of service.

(a) The use of other alternatives to a packer may be allowed with the written approval of the secretary. To obtain approval, the operator shall submit a written request to the secretary which shall set forth the proposed alternative and all technical data supporting its use. The secretary may approve the request if the alternative method will reliably provide a comparable level of protection to ground water. The secretary may approve an alternative method solely for an individual well or for general use.

(b) In determining the adequacy of the specifications proposed by the discharger for tubing and packer, or a packer alternative, the secretary shall consider the following factors:

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical nature or characteristics, corrosiveness, and density);

(iii) Injection pressure;

(iv) Annular pressure;

(v) Rate, temperature and volume of injected fluid; and

(vi) Size of casing.

**C. Additional Construction Requirements for Class III wells.**

(1) Where injection is into a formation containing ground water having 10,000 mg/l or less TDS, monitoring wells shall be completed into the injection zone and into the first formation above the injection zone containing ground water having 10,000 mg/l or less TDS which could be affected by the extraction operation. If ground water having 10,000 mg/l or less TDS below the injection zone could be affected by the extraction operation, monitoring of such ground water may be required. These wells shall be of sufficient number, located and constructed so as to detect any excursion of injection fluids, process byproducts, or formation fluids outside the extraction area or injection zone. The requirement for monitoring wells in aquifers designated pursuant to Section

20.6.2.5103 NMAC may be waived by the secretary, provided that the absence of monitoring wells does not result in an increased risk of movement of fluids into protected ground waters having 10,000 mg/l or less TDS.

(2) Where injection is into a formation which does not contain ground water having 10,000 mg/l or less TDS, no monitoring wells are necessary in the injection zone. However, monitoring wells may be necessary in adjoining zones with ground water having 10,000 mg/l or less TDS that could be affected by the extraction operation.

(3) In an area that the secretary determines is subject to subsidence or collapse, the required monitoring wells may be required to be located outside the physical influence of that area.

(4) In determining the adequacy of monitoring well location, number, construction and frequency of monitoring proposed by the discharger, the secretary shall consider the following factors:

- (a) The local geology and hydrology;
- (b) The operating pressures and whether a negative pressure gradient to the monitor well is being maintained;
- (c) The nature and volume of injected fluid, formation water, and process by-products; and
- (d) The number and spacing of Class III wells in the well field.

[9-20-82, 12-1-95; 20.6.2.5205 NMAC - Rn, 20 NMAC 6.2.V.5205, 1-15-01; A, 12-1-01]

#### **20.6.2.5206 OPERATING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

**A.** General Operating Requirements Applicable to Class I non-hazardous waste injection wells and Class III wells.

(1) The maximum injection pressure at the wellhead shall not initiate new fractures or propagate existing fractures in the confining zone, or cause the movement of injection or formation fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(2) Injection between the outermost casing and the well bore is prohibited in a zone other than the authorized injection zone.

**B.** Additional Operating Requirements for Class I non-hazardous waste injection wells.

(1) Except during well stimulation, the maximum injection pressure shall not initiate new fractures or propagate existing fractures in the injection zone.

(2) Unless an alternative to a packer has been approved under Subparagraph (c) of Paragraph (3) of Subsection B of Section 20.6.2.5205 NMAC, the annulus between the tubing and the long string of casing shall be filled with a fluid approved by the secretary and a pressure, also approved by the secretary shall be maintained on the annulus.

**C.** Additional Operating Requirements for Class III wells: Initiation of new fractures or propagation of existing fractures in the injection zone will not be approved by the secretary as part of a discharge permit unless it is done during well stimulation and the discharger demonstrates:

(1) That such fracturing will not cause movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, and

(2) That the provisions of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC for protection of ground water are met.

[9-20-82, 12-1-95; 20.6.2.5206 NMAC - Rn, 20 NMAC 6.2.V.5206, 1-15-01; A, 12-1-01]

#### **20.6.2.5207 MONITORING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

**A.** The discharger shall demonstrate mechanical integrity for each Class I non-hazardous waste injection well or Class III well at least once every five years during the life of the well pursuant to Section 20.6.2.5204 NMAC.

**B.** Additional Monitoring Requirements for Class I non-hazardous waste injection wells.

(1) The discharger shall provide analysis of the injected fluids at least quarterly or, if necessary, more frequently to yield data representative of their characteristics.

(2) Continuous monitoring devices shall be used to provide a record of injection pressure, flow rate, flow volume, and pressure on the annulus between the tubing and the long string of casing.

(3) The discharger shall provide wells within the area of review as required by the discharge permit to be used by the discharger to monitor pressure in, and possible fluid movement into, ground water having 10,000 mg/l or less TDS except for such ground waters designated pursuant to Section 20.6.2.5103 NMAC. This Section

does not require monitoring wells for Class I non-hazardous waste injection wells unless monitoring wells are necessary due to possible flow paths within the area of review.

**C. Additional Monitoring Requirements for Class III wells.**

(1) The discharger shall provide an analysis or description, whichever the secretary requires, of the injected fluids at least quarterly or, if necessary, more frequently to yield representative data.

(2) The discharger shall perform:

(a) Appropriate monitoring of injected and produced fluid volumes by whichever of the following methods the secretary requires:

(i) Recording injection pressure and either flow rate or volume every two weeks; or

(ii) Metering and daily recording of fluid volumes;

(b) Monitoring every two weeks, or more frequently as the secretary determines, of the monitor wells, required in Subsection C of Section 20.6.2.5205 NMAC for:

(i) Water chemistry parameters used to detect any migration from the injection zone;

(ii) Fluid levels adjacent to the injection zone; and

(c) Other necessary monitoring as the secretary for good cause may require to detect movement of fluids from the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(3) With the approval of the secretary, all Class III wells may be monitored on a well field basis by manifold monitoring rather than on an individual well basis. Manifold monitoring to determine the quality, pressure, and flow rate of the injected fluid may be approved in cases of facilities consisting of more than one Class III well, operating with a common manifold, provided that the discharger demonstrates that manifold monitoring is comparable to individual well monitoring.

[9-20-82, 12-1-95; 20.6.2.5207 NMAC - Rn, 20 NMAC 6.2.V.5207, 1-15-01; A, 12-1-01]

**20.6.2.5208 REPORTING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

**A. Reporting Requirements for Class I non-hazardous waste injection wells.**

(1) If a Class I non-hazardous waste injection well is found to be discharging or is suspected of discharging fluids into a zone or zones other than the permitted or authorized injection zone, the discharger shall within 24 hours notify the secretary of the circumstances and action taken. The discharger shall provide subsequent written reports as required by the secretary.

(2) The discharger shall provide reports quarterly to the secretary on:

(a) The physical, chemical and other relevant characteristics of injection fluids;

(b) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and

(c) The results of monitoring prescribed under Subsection B of Section 20.6.2.5207 NMAC.

(3) The discharger shall report, no later than the first quarterly report after completion, the results of:

(a) Periodic tests of mechanical integrity as required in Sections 20.6.2.5204 and 20.6.2.5207 NMAC;

(b) Any other test of the Class I non-hazardous waste injection well conducted by the discharger if required by the secretary;

(c) Any well work-over; and

(d) Any changes within the area of review which might impact subsurface conditions.

**B. Reporting Requirements for Class III wells.**

(1) The discharger shall notify the secretary within 48 hours of the detection or suspected detection of a leachate excursion, and provide subsequent reports as required by the secretary.

(2) The discharger shall provide to the secretary:

(a) Reports on required monitoring quarterly, or more frequently as required by the secretary; and

(b) Results of mechanical integrity testing as required in Sections 20.6.2.5204 and 20.6.2.5207 NMAC and any other periodic tests required by the secretary. These results are to be reported no later than the first regular report after the completion of the test.

(3) Where manifold monitoring is permitted, monitoring results may be reported on a well field basis, rather than individual well basis.

**C. Report Signatory Requirements.**

(1) All reports submitted pursuant to this Section shall be signed and certified as provided in Subsection G of Section 20.6.2.5101 NMAC, or by a duly authorized representative.

(2) For a person to be a duly authorized representative, authorization must:

(a) Be made in writing by a signatory described in Paragraph (1) of Subsection G of Section 20.6.2.5101 NMAC;

(b) Specify either an individual or a position having responsibility for the overall operation of that regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, or position of equivalent responsibility; and

(c) Have been submitted to the secretary.

[9-20-82, 12-1-95; 20.6.2.5208 NMAC - Rn, 20 NMAC 6.2.V.5208, 1-15-01; A, 12-1-01]

**20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:**

**A.** The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I non-hazardous waste injection well or a Class III well that meets the requirements of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

**B.** Prior to abandonment of a well used in a Class I non-hazardous waste injection well or Class III well operation; the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

**C.** Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

**D.** Placement of the plugs shall be accomplished by one of the following:

- (1) The Balance Method; or
- (2) The Dump Bailer Method; or
- (3) The Two-Plug Method; or
- (4) An equivalent method with the approval of the secretary.

**E.** The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan.

- (1) The type and number of plugs to be used;
- (2) The placement of each plug, including the elevation of the top and bottom;
- (3) The type, grade and quantity of cementing slurry to be used;
- (4) The method of placement of the plugs;
- (5) The procedure to be used to plug and abandon the well; and
- (6) Such other factors that may affect the adequacy of the plan.

**F.** The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

[9-20-82, 12-1-95; 20.6.2.5209 NMAC - Rn, 20 NMAC 6.2.V.5209, 1-15-01; A, 12-1-01]

**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.
- [9-20-82, 12-24-87, 12-1-95; 20.6.2.5210 NMAC - Rn, 20 NMAC 6.2.V.5210, 1-15-01; A, 12-1-01]

**20.6.2.5211 - 20.6.2.5299: [RESERVED]**

[12-1-95; 20.6.2.5211 - 20.6.2.5299 NMAC - Rn, 20 NMAC 6.2.V.5211-5299, 1-15-01]

**HISTORY of 20.6.2. NMAC:**

**Pre-NMAC History:**

Material in this Part was derived from that previously filed with the commission of public records - state records center and archives:

WQC 67-2, Regulations Governing Water Pollution Control in New Mexico, filed 12-5-67, effective 1-4-68

WQC 72-1, Water Quality Control Commission Regulations, filed 8-4-72, effective 9-3-72

WQC 77-1, Amended Water Quality Control Commission Regulations, filed 1-18-77, effective 2-18-77

WQC 81-2, Water Quality Control Commission Regulations, filed 6-2-81, effective 7-2-81

WQC 82-1, Water Quality Control Commission Regulations, filed 8-19-82, effective 9-20-82

**History of Repealed Material: [Reserved]**

**Other History:**

20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 10-27-95, effective 12-1-95

20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 10-15-96, effective 11-15-96

20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 11-30-00, effective 1-15-01

20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 9-16-01, effective 12-1-01

20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 8-1-02, effective 9-15-02

**20.6.2.3114 FEES:**

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

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

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

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

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

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

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

Permit Fee



**20.6.2.3114 TABLE 1** (gpd=gallons per day)

Agriculture <10,000 gpd	\$ 1,150
Agriculture 10,000 to 49,999 gpd	\$ 2,300
Agriculture 50,000 to 99,999 gpd	\$ 3,450
Agriculture 100,000 gpd or greater	\$ 4,600
Domestic Waste <10,000 gpd	\$ 1,150
Domestic Waste 10,000 to 49,999 gpd	\$ 2,300
Domestic Waste 50,000 to 99,999 gpd	\$ 3,450
Domestic Waste 100,000 to 999,999 gpd	\$ 4,600
Domestic Waste 1,000,000 to 9,999,999 gpd	\$ 7,000
Domestic Waste 10,000,000 gpd or greater	\$ 9,200
Food Processing <10,000 gpd	\$ 1,150
Food Processing 10,000 to 49,999 gpd	\$ 2,300
Food Processing 50,000 to 99,999 gpd	\$ 3,450
Food Processing 100,000 to 999,999 gpd	\$ 4,600
Food Processing 1,000,000 or greater	\$ 7,000
Grease/Septage surface disposal <10,000 gpd	\$ 1,725
Grease/Septage surface disposal 10,000 gpd or greater	\$ 3,450
Industrial <10,000 gpd; or <10,000 yd <sup>3</sup> of contaminated solids	\$ 1,725
Industrial 10,000 to 99,999 gpd; or 10,000 to 99,999 yd <sup>3</sup> of contaminated solids	\$ 3,450
Industrial 100,000 to 999,999 gpd; or 100,000 to 999,999 yd <sup>3</sup> of contaminated solids or greater	\$ 6,900
Industrial 1,000,000 gpd or greater; or 1,000,000 yd <sup>3</sup> of contaminated solids or greater	\$10,350
Discharge of remediation system effluent - remediation plan approved under separate regulatory authority	\$ 1,600
Mining dewatering	\$ 3,250
Mining leach dump	\$13,000
Mining tailings	\$13,000
Mining waste rock	\$13,000
Mining in-situ leach (except salt) and old stope leaching	\$13,000
Mining other (mines with minimal environmental impact, post closure operation and maintenance, evaporation lagoons and land application at uranium mines)	\$ 4,750
Gas Compressor Stations 0 to 1000 Horsepower	\$ 400
Gas Compressor Stations >1001 Horsepower	\$ 1,700
Gas Processing Plants	\$ 4,000
Injection Wells: Class I	\$ 4,500
Injection Wells: Class III and Geothermal	\$ 1,700
Oil and Gas Service Companies	\$ 1,700
Refineries	\$ 8,400
Crude Pump Station	\$ 1,200
Underground Gas Storage	\$ 1,700
Abatement of ground water and vadose zone contamination at oil and gas Sites	\$ 2,600
General permit	\$ 600

**20.6.2.3114 Table 2**

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



**20.6.2.3108 PUBLIC NOTICE AND PARTICIPATION:**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) posting on the department's website;

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

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

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

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

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

- (1) a brief description of the procedures to be followed by the secretary in making a final determination;
- (2) a statement of the comment period and description of the procedures for a person to request a hearing on the application; and
- (3) the address and telephone number at which interested persons may obtain a copy of the proposed approval or disapproval of an application for a discharge permit, modification or renewal.

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

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

**L.** If a hearing is held, pursuant to Subsection K of 20.6.2.3108 NMAC, notice of the hearing shall be given by the department at least 30 days prior to the hearing in accordance with Subsection H of 20.6.2.3108 NMAC. The notice shall include the information identified in Subsection F of 20.6.2.3108 NMAC in addition to the time and place of the hearing and a brief description of the hearing procedures. The hearing shall be held pursuant to 20.6.2.3110 NMAC.

[2-18-77, 12-24-87, 12-1-95, 11-15-96; 20.6.2.3108 NMAC - Rn, 20 NMAC 6.2.III.3108, 1-15-01; A, 12-1-01; A, 9-15-02; A, 7-16-06]



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**  
Governor  
**Joanna Prukop**  
Cabinet Secretary

**Mark E. Fesmire, P.E.**  
Director  
Oil Conservation Division

February 09, 2007

Mack Chase-President  
Mack Energy Corporation  
11352 Lovington Highway  
Artesia, NM 88210

Dear Mr. Chase:

It has been reported that Mack Energy Corporation (MEC) is operating an EPA type Class III brine well located 1775 FNL @ 930 FWL in Section 20-Ts 17S-R 30E Eddy County, New Mexico. This information was obtained from a sign at the location.

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, all class III brine wells must have an approved discharge permit issued by the Oil Conservation Division Environmental Bureau. OCD cannot find any record or permit for this facility. Therefore, you are hereby ordered to cease and desist all operations at this site until MEC has obtained an approved discharge permit pursuant to 20.6.2 NMAC New Mexico Water Quality Control Commission Regulations.

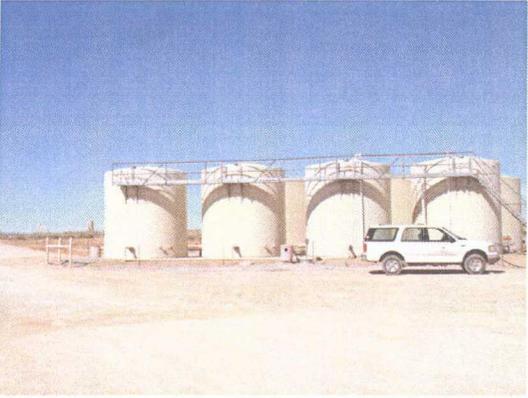
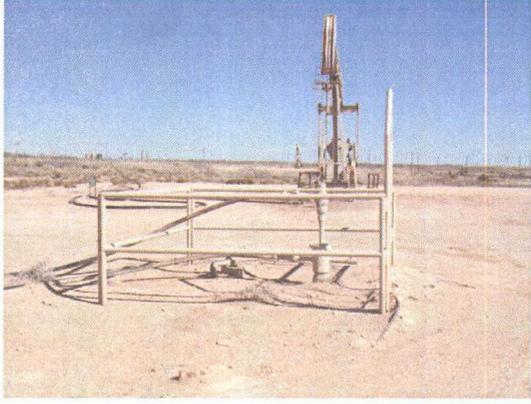
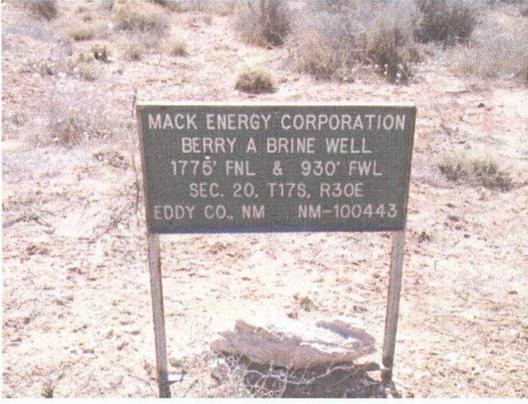
Please make arrangements within 10 days to set up an inquiry meeting to be held in Santa Fe, New Mexico concerning this issue. If you have any questions please do not hesitate to call me at 505-476-3493 or E-mail [daniel.sanchez@state.nm.us](mailto:daniel.sanchez@state.nm.us).

Sincerely,

Daniel Sanchez -Compliance and Enforcement Manager

Cc: Wayne Price-Environmental Chief  
Tim Gum- OCD District Supervisor  
Attachments- photos

Mack Energy Berry A Brine Well  
February 06, 2007  
Taken by Carl Chavez-OCD



**Price, Wayne, EMNRD**

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**From:** rharrisnm@aim.com  
**Sent:** Friday, January 26, 2007 9:45 AM  
**To:** Price, Wayne, EMNRD  
**Subject:** Mack Energy Brine Well

Wayne-

I am preparing all of the information on our upcoming brine well #2 application, and want to review the other applications in the area. I cannot find any information on this well.

The Well Sign Says:

Mack Energy  
Berry A Brine Well  
1775 FNL & 990 FWL  
Sec 20, T17S-R30E  
NM 100443

On the OCD web site, I can find no well file, logs, hearing orders, admin orders or API#  
Am I looking in the wrong place?

Regards,  
Randall Harris  
Geologist  
Ray Westall Operating

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**Check Out the new free AIM(R) Mail** -- 2 GB of storage and industry-leading spam and email virus protection.