District I

REGISTERED

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
Department
Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87505

Form C-144
July 21, 2008

For temporary pits, closed-loop sytems, and below-grade tanks. submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action:
- [X] Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
- [ ] Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
- [ ] Modification to an existing permit
- [ ] Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1

Operator: **Burlington Resources Oil & Gas Company, LP** OGRID#: **14538**

Address: **PO Box 4289, Farmington, NM 87499**

Facility or well name: **LARCHER 1A**

API Number: **3004521886** OCD Permit Number:

U/L or Qtr/Qtr: **C** Section: **7** Township: **31N** Range: **10W** County: **San Juan**

Center of Proposed Design: Latitude: **36.91718°N** Longitude: **-107.92581°W** NAD: [X] 1927 [ ] 1983

Surface Owner: [ ] Federal [ ] State [X] Private [ ] Tribal Trust or Indian Allotment

2

[ ] **Pit:** Subsection F or G of 19.15.17.11 NMAC

Temporary: [ ] Drilling [ ] Workover

[ ] Permanent [ ] Emergency [ ] Cavitation [ ] P&A

[ ] Lined [ ] Unlined Liner type: Thickness _____ mil [ ] LLDPE [ ] HDPE [ ] PVC [ ] Other _____

[ ] String-Reinforced

Liner Seams: [ ] Welded [ ] Factory [ ] Other _____ Volume: _____ bbl Dimensions L ____ x W ____ x D ____

3

[ ] **Closed-loop System:** Subsection H of 19.15.17.11 NMAC

Type of Operation: [ ] P&A [ ] Drilling a new well [ ] Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)

[ ] Drying Pad [ ] Above Ground Steel Tanks [ ] Haul-off Bins [ ] Other _____

[ ] Lined [ ] Unlined Liner type: Thickness _____ mil [ ] LLDPE [ ] HDPE [ ] PVD [ ] Other _____

Liner Seams: [ ] Welded [ ] Factory [ ] Other _____

4

[X] **Below-grade tank:** Subsection I of 19.15.17.11 NMAC

Volume: **120** bbl Type of fluid: **Produced Water**

Tank Construction material: **Metal**

[ ] Secondary containment with leak detection [X] Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off

[ ] Visible sidewalls and liner [ ] Visible sidewalls only [ ] Other _____

Liner Type: Thickness _____ mil [ ] HDPE [ ] PVC [X] Other **Unspecified**

5

[ ] **Alternative Method:**

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6

Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pit, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☒ Alternate. Please specify **4' hog wire fencing topped with two strands barbed wire.**

7

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☒ Screen ☐ Netting ☐ Other _____

☐ Monthly inspections *(If netting or screening is not physically feasible)*

8

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12" X 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19.15.3.103 NMAC

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Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☒ Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for consideration of approval. **(Fencing/BGT Liner)**

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

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Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. **Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.**

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes	☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes	☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ NA	☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applied to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ NA	☐ No
Within 500 horizonal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site.	☐ Yes	☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes	☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes	☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division	☐ Yes	☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes	☒ No
Within a 100-year floodplain - FEMA map	☐ Yes	☒ No

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Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- [X] Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- [ ] Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9
- [X] Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- [X] Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- [X] Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- [X] Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

[ ] Previously Approved Design (attach copy of design) API _____ or Permit _____

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Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- [ ] Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- [ ] Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- [ ] Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- [ ] Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- [ ] Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

[ ] Previously Approved Design (attach copy of design) API _____

[ ] Previously Approved Operating and Maintenance Plan API _____

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Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- [ ] Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- [ ] Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- [ ] Climatological Factors Assessment
- [ ] Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- [ ] Dike Protection and Structural Integrity Design: based upon the appropriate requirements of 19.15.17.11 NMAC
- [ ] Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- [ ] Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- [ ] Quality Control/Quality Assurance Construction and Installation Plan
- [ ] Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- [ ] Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- [ ] Nuisance or Hazardous Odors, including H2S, Prevention Plan
- [ ] Emergency Response Plan
- [ ] Oil Field Waste Stream Characterization
- [ ] Monitoring and Inspection Plan
- [ ] Erosion Control Plan
- [ ] Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

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Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: [ ] Drilling [ ] Workover [ ] Emergency [ ] Cavitation [ ] P&A [ ] Permanent Pit [X] Below-grade Tank [ ] Closed-loop System [ ] Alternative

Proposed Closure Method:
- [X] Waste Excavation and Removal **(Below-Grade Tank)**
- [ ] Waste Removal (Closed-loop systems only)
- [ ] On-site Closure Method (only for temporary pits and closed-loop systems)
  - [ ] In-place Burial [ ] On-site Trench
- [ ] Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

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Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- [X] Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- [X] Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- [X] Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- [X] Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- [X] Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- [X] Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

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Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)
Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit #: _____

Disposal Facility Name: _____ Disposal Facility Permit #: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?
☐ Yes (If yes, please provide the information ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

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Siting Criteria (Regarding on-site closure methods only: 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ N/A
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ N/A
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ N/A
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal fee of any other fresh water well or spring, in existence at the time of the initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confiramtion or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

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On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must bee attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19

Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Crystal Tafoya Title: Regulatory Technician

Signature: Crystal Tafoya Date: 12/22/2008

e-mail address: [redacted] Telephone: 505-326-9837

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OCD Approval: ☐ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** _____

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Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:** _____

22

Closure Method:

☐ Waste Excavation and Removal ☐ On-site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23

Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and opeartions?

☐ Yes (If yes, please demonstrate complilane to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

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Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)

☐ Proof of Deed Notice (required for on-site closure)

☐ Plot Plan (for on-site closures and temporary pits)

☐ Confirmation Sampling Analytical Results (if applicable)

☐ Waste Material Sampling Analytical Results (if applicable)

☐ Disposal Facility Name and Permit Number

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude: _____ Longitude: _____ NAD ☐ 1927 ☐ 1983

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Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is ture, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 31N Range: 10W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○ Non-Domestic ○ Domestic ◉ All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

WATER COLUMN REPORT 08/20/2008

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column (in feet)
SJ 00498	31N	10W	04	1	2					26	8	18
SJ 03062 CLW263578	31N	10W	04	1	2	2				47	40	7
SJ 03062	31N	10W	04	1	2	2				55	46	9
SJ 02844	31N	10W	04	1	2	4				37	21	16
SJ 00573	31N	10W	04	1	4					37	12	25
SJ 00595	31N	10W	04	1	4	2				90	12	78
SJ 00595 S	31N	10W	04	1	4	2				70	10	60
SJ 00175	31N	10W	04	2						28	13	15
SJ 01563	31N	10W	04	2	1					44	28	16
SJ 02089	31N	10W	04	2	1	1				55	40	15
SJ 03033	31N	10W	04	2	1	1				52	30	22
SJ 03034	31N	10W	04	2	1	2				45	23	22
SJ 01564	31N	10W	04	2	2					34	10	24
SJ 00128	31N	10W	04	2	2					70	21	49
SJ 02044	31N	10W	05	1	3					22	12	10
SJ 01370	31N	10W	05	1	3	2				48	28	20
SJ 01967 X	31N	10W	05	1	3	2				25	10	15
SJ 02843	31N	10W	05	1	3	2				25	10	15
SJ 02044 X	31N	10W	05	1	3	4				28	14	14
SJ 02083	31N	10W	05	2	2	1				23	10	13
SJ 02069	31N	10W	05	2	2	1				22	9	13
SJ 03013	31N	10W	05	2	2	3				19	7	12
SJ 03109	31N	10W	05	2	2	3				21	2	19
SJ 03004	31N	10W	05	2	2	4				18	6	12
SJ 02945	31N	10W	05	2	2	4				17	5	12
SJ 03368	31N	10W	05	2	2	4				19	6	13
SJ 03549	31N	10W	05	2	4	4				42	35	7
SJ 02884	31N	10W	05	2	4	4				75		
SJ 00304	31N	10W	05	3	4					18	5	13
SJ 02399	31N	10W	05	3	4	1				40	14	26
SJ 02944	31N	10W	05	3	4	2				100		
SJ 03112	31N	10W	05	3	4	2				45	33	12

SJ 01373 X	31N	10W	05	3 4 3			35	10	25
SJ 02107	31N	10W	05	4 3			35	16	19
SJ 01373	31N	10W	05	4 3			6	3	3
SJ 02037	31N	10W	05	4 3			39	11	28
SJ 03452	31N	10W	05	4 4 2			61	30	31
SJ 03336	31N	10W	05	4 4 3			58	28	30
SJ 03246	31N	10W	05	4 4 3			65	15	50
SJ 01958	31N	10W	06	2			103	83	20
SJ 01977	31N	10W	06	2 3			93	33	60
SJ 03308	31N	10W	06	2 4 3			100	60	40
SJ 02150	31N	10W	07	2 2			41	23	18
SJ 02389	31N	10W	07	2 2 3			48	31	17
SJ 03079	31N	10W	07	2 2 3			50		
SJ 03330	31N	10W	07	3 3 1			400		
SJ 01521	31N	10W	07	4			45	29	16
SJ 03802 POD1	31N	10W	07	4 3 2	269793	2149984	41	24	17
SJ 00585	31N	10W	08				40	23	17
SJ 02304	31N	10W	08	1 2			35	29	6
SJ 03057	31N	10W	08	1 3 4			19	6	13
SJ 03714 POD1	31N	10W	08	3 1 1			21	6	15
SJ 00054	31N	10W	10	2			455		
SJ 00830 -EXPLOR	31N	10W	15	3			550		
SJ 01198	31N	10W	17	3 4			158	97	61
SJ 02624	31N	10W	18	1 1			295	125	170
SJ 01616	31N	10W	18	1 3			18	8	10
SJ 01534	31N	10W	18	1 3 1			34	23	11
SJ 03345	31N	10W	18	1 3 2			21	11	10
SJ 01796	31N	10W	18	1 3 3			32	20	12
SJ 01598	31N	10W	18	1 4			30	5	25
SJ 01587	31N	10W	18	1 4			35	5	30
SJ 03163	31N	10W	18	1 4 3			19	5	14
SJ 01747	31N	10W	18	1 4 3			20	6	14
SJ 01718	31N	10W	18	2 1 4			30	4	26
SJ 03813 POD1	31N	10W	18	2 1 4	269778	2148065	16	6	10
SJ 03070	31N	10W	18	2 3 2			21	1	20
SJ 03324	31N	10W	18	2 3 2			43	20	23
SJ 03474	31N	10W	18	2 4 2			35		
SJ 01625	31N	10W	18	3 1			21	6	15
SJ 01500	31N	10W	18	3 1			26	15	11
SJ 01550	31N	10W	18	3 1			22	7	15
SJ 02821	31N	10W	18	3 1 1			24	8	16
SJ 03119	31N	10W	18	3 1 2			10	8	2
SJ 01552	31N	10W	18	3 1 4			30	22	8
SJ 03114	31N	10W	18	3 2 1			16	8	8
SJ 02749	31N	10W	18	3 2 2			16	10	6
SJ 03722 POD1	31N	10W	18	3 2 3			20	6	14
SJ 03721 POD1	31N	10W	18	3 2 3			25	10	15
SJ 03435	31N	10W	18	3 2 3			10	6	4
SJ 03622	31N	10W	18	3 2 3			20	6	14
SJ 00611 S	31N	10W	18	3 3			65	25	40
SJ 00611	31N	10W	18	3 3 3			58	46	12
SJ 00555 CLW225581	31N	10W	19	1			70	45	25
SJ 02909	31N	10W	19	1 1 1			60	47	13
SJ 02929	31N	10W	19	1 1 1			58	40	18
SJ 02979	31N	10W	19	1 1 1			57	43	14
SJ 03103	31N	10W	19	1 1 1			53	33	20
SJ 03359	31N	10W	19	1 1 1			70		
SJ 03705 POD1	31N	10W	19	1 1 2			69	56	13
SJ 03487	31N	10W	19	1 1 3			65	45	20

SJ 03086	31N	10W	19	1	1	3	61	44	17
SJ 03486	31N	10W	19	1	1	3	65	45	20
SJ 01428	31N	10W	19	1	3		65	45	20
SJ 01349	31N	10W	19	1	3	3	78	67	11
SJ 03285	31N	10W	19	3	1	1	40		
SJ 02084	31N	10W	25	4	4	2	315		
SJ 00967	31N	10W	27	4	3		130	90	40
SJ 00990	31N	10W	27	4	3		162	110	52
SJ 01483	31N	10W	27	4	4	1	195	150	45
SJ 02960	31N	10W	27	4	4	2	200	150	50
SJ 03178	31N	10W	27	4	4	2	235	150	85
SJ 03539	31N	10W	27	4	4	3	205	124	81
SJ 00163	31N	10W	28	1	4	1	1538		
SJ 00163 EXPL	31N	10W	28	1	4	3	1538		
SJ 03459	31N	10W	32	3	3	2	185	175	10
SJ 00981	31N	10W	34	2	1		164	118	46
SJ 01480	31N	10W	34	2	1		245	125	120
SJ 03624	31N	10W	34	2	1	2	165	65	100
SJ 03387	31N	10W	34	2	2	1	250	200	50
SJ 03728 POD1	31N	10W	35	1	3	3	365	230	135
SJ 03545	31N	10W	35	1	4	3	455	317	138
SJ 03544	31N	10W	35	1	4	4	325	220	105
SJ 03571	31N	10W	35	1	4	4	250		
SJ 03576	31N	10W	35	2	3	3	450	137	313
SJ 03570	31N	10W	35	2	4	4	250		
SJ 03554	31N	10W	35	4	2	1	454	317	137

Record Count: 117

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 31N Range: 11W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic Domestic All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

WATER COLUMN REPORT 08/20/2008

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column (in feet)
SJ 02395	31N	11W	13	1	1	3				95	35	60
SJ 01640	31N	11W	13	2	4					32	7	25
SJ 01551	31N	11W	13	2	4					64	42	22
SJ 00560	31N	11W	13	2	4					39	25	14
SJ 01729	31N	11W	13	2	4					48	28	20
SJ 01541	31N	11W	13	3						52	30	22
SJ 01539	31N	11W	13	3						52	30	22
SJ 00946	31N	11W	13	3	3					135	100	35
SJ 01540	31N	11W	13	4						52	30	22
SJ 01879	31N	11W	13	4						26	8	18
SJ 01801	31N	11W	13	4						22	15	7
SJ 03413	31N	11W	13	4	2					60		
SJ 03412	31N	11W	13	4	2					60		
SJ 03736 POD1	31N	11W	13	4	2	1				19	6	13
SJ 02495	31N	11W	13	4	2	1				28	12	16
SJ 03623	31N	11W	13	4	2	1				30	16	14
SJ 03264	31N	11W	13	4	2	2				20	11	9
SJ 03124	31N	11W	13	4	2	4				20	5	15
SJ 03125	31N	11W	13	4	2	4				20	5	15
SJ 03712 POD1	31N	11W	13	4	3	1				19	11	8
SJ 03018	31N	11W	13	4	3	4				20	8	12
SJ 03670	31N	11W	13	4	3	4				26	10	16
SJ 01538	31N	11W	13	4	4					52	30	22
SJ 01683	31N	11W	13	4	4					45	25	20
SJ 01731	31N	11W	13	4	4					43	25	18
SJ 01644	31N	11W	13	4	4					23	6	17
SJ 02149	31N	11W	13	4	4					35		
SJ 01645	31N	11W	13	4	4					22	6	16
SJ 01767	31N	11W	13	4	4					42	18	24
SJ 01730	31N	11W	13	4	4					40	24	16
SJ 01699	31N	11W	13	4	4					42	12	30
SJ 01609	31N	11W	13	4	4					40	18	22

SJ 01537	31N	11W	13	4	4				52	28	24
SJ 01542	31N	11W	13	4	4				45	25	20
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SJ 02093	31N	11W	13	4	4	W	470700	2143800	20	6	14
SJ 03440	31N	11W	13	4	4	1			19	11	8
SJ 03084	31N	11W	13	4	4	2			18	8	10
SJ 03085	31N	11W	13	4	4	2			36	5	31
SJ 02801	31N	11W	13	4	4	3			45		
SJ 03064	31N	11W	13	4	4	3			30	8	22
SJ 01142	31N	11W	13	4	4	4			38	10	28
SJ 02838	31N	11W	13	4	4	4			31		
SJ 02855	31N	11W	13	4	4	4			46	28	18
SJ 01173	31N	11W	13	4	4	4			45	16	29
SJ 02289	31N	11W	13	4	4	4			140		
SJ 03458	31N	11W	19	3	3	4			800		
SJ 02978	31N	11W	23	2	1	3			65	20	45
SJ 01817	31N	11W	23	2	4				72	35	37
SJ 02129	31N	11W	23	2	4				40	25	15
SJ 02161	31N	11W	23	3	4				30	6	24
SJ 01600	31N	11W	24	1					55	40	15
SJ 02124	31N	11W	24	1	1				27	7	20
SJ 03755 POD1	31N	11W	24	1	4		269112	2142037	25	13	12
SJ 03695 POD1	31N	11W	24	1	4	2			25	13	12
SJ 03695 POD	31N	11W	24	1	4	2			24	12	12
SJ 03696	31N	11W	24	1	4	2			25	13	12
SJ 03695	31N	11W	24	1	4	2			24	12	12
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SJ 01559	31N	11W	24	2					44	20	24
SJ 01744	31N	11W	24	2	2				30	11	19
SJ 01375	31N	11W	24	2	2				45	30	15
SJ 01986 S	31N	11W	24	2	2	2			38	21	17
SJ 01986	31N	11W	24	2	2	2			60	19	41
SJ 00555	31N	11W	24	2	2	4			26	11	15
SJ 03408	31N	11W	24	2	3	1			70		
SJ 02928	31N	11W	24	2	3	2			33	15	18
SJ 02924	31N	11W	24	2	3	2			45	18	27
SJ 02846	31N	11W	24	2	3	3			65		
SJ 02888	31N	11W	24	2	3	3			32	15	17
SJ 03650	31N	11W	24	2	3	3			58	39	19
SJ 00555 X	31N	11W	24	2	4				55	19	36
SJ 02839	31N	11W	24	2	4	1			60	40	20
SJ 03707 POD1	31N	11W	24	2	4	1			69	51	18
SJ 02758	31N	11W	24	2	4	2			74	54	20
SJ 02791	31N	11W	24	2	4	2			65	40	25
SJ 00379	31N	11W	24	2	4	4			71	40	31
SJ 00365	31N	11W	24	2	4	4			45	27	18
SJ 01670	31N	11W	24	3					38	6	32
SJ 00287	31N	11W	24	3	2	4			44	35	9
SJ 01553	31N	11W	24	3	4				45	25	20
SJ 02171	31N	11W	24	3	4	3			30	11	19
SJ 01366	31N	11W	24	4	1				45	18	27
SJ 02644	31N	11W	24	4	1	4			81	55	26
SJ 00913	31N	11W	24	4	3				30	9	21
SJ 01405	31N	11W	24	4	3				101	66	35
SJ 01455	31N	11W	24	4	3	4			205	70	135
SJ 01047	31N	11W	24	4	3	4			69	42	27
SJ 00405	31N	11W	24	4	3	4			40		
SJ 03438	31N	11W	24	4	4	4			200		
SJ 03045	31N	11W	25	1	4	4					

SJ 02499		31N	11W	25	2	1	1		66	45	21
SJ 03198		31N	11W	25	3	3	1		600	100	500
SJ 02834		31N	11W	25	3	3	3		200	160	40
SJ 03450		31N	11W	25	3	3	3		144	95	49
SJ 03126		31N	11W	26	1	1	1		41	21	20
SJ 01233		31N	11W	26	1	4			49	27	22
SJ 03158		31N	11W	26	1	4	2		280	25	255
SJ 00675		31N	11W	26	1	4	3		36	22	14
SJ 02887		31N	11W	26	1	4	4		51	28	23
SJ 02898		31N	11W	26	2	1	4		50		
SJ 01789		31N	11W	26	3	1			29	12	17
SJ 00705		31N	11W	26	3	1	1		18	8	10
SJ 00371		31N	11W	26	3	1	2		29	9	20
SJ 03323		31N	11W	26	3	1	4		30	6	24
SJ 00363		31N	11W	26	3	1	4		25	5	20
SJ 01545 X		31N	11W	26	3	3			27	10	17
SJ 00926		31N	11W	26	4	1			62	32	30
SJ 01519		31N	11W	26	4	2			69	47	22
SJ 01620		31N	11W	26	4	2			67	26	41
SJ 00610		31N	11W	26	4	2			80	50	30
SJ 02011		31N	11W	26	4	2			55	38	17
SJ 01628		31N	11W	26	4	2			66	25	41
SJ 03697	POD1	31N	11W	26	4	2	3		80	50	30
SJ 00562		31N	11W	26	4	3			40	20	20
SJ 00561		31N	11W	26	4	3			38	20	18
SJ 01042		31N	11W	26	4	4			100	30	70
SJ 00494		31N	11W	26	4	4			88	60	28
SJ 02482		31N	11W	27	4	1	2		75	55	20
SJ 03600		31N	11W	27	4	2	1		51	39	12
SJ 03540		31N	11W	27	4	2	1		40	21	19
SJ 03772	POD1	31N	11W	27	4	2	1	268239 2135717	41	30	11
SJ 02914		31N	11W	27	4	2	3		25	15	10
SJ 02468		31N	11W	27	4	2	3		49	30	19
SJ 02656		31N	11W	27	4	2	4		21	9	12
SJ 02871		31N	11W	27	4	2	4		22	11	11
SJ 02215		31N	11W	27	4	3			54	23	31
SJ 02676		31N	11W	27	4	3			19	7	12
SJ 03247		31N	11W	27	4	3	1		70		
SJ 03505		31N	11W	27	4	3	3		50	14	36
SJ 02549		31N	11W	27	4	3	3		49	30	19
SJ 02853		31N	11W	27	4	3	4		22	6	16
SJ 02984		31N	11W	27	4	4	1		20		
SJ 03181		31N	11W	27	4	4	1		19	10	9
SJ 01884		31N	11W	30	4	2	3		71	30	41
SJ 01739		31N	11W	30	4	2	4		98	30	68
SJ 01154		31N	11W	30	4	2	4		190	150	40
SJ 01834		31N	11W	30	4	2	4		103	30	73
SJ 01797		31N	11W	30	4	4			100	40	60
SJ 01396		31N	11W	30	4	4	1		80	57	23
SJ 00970		31N	11W	30	4	4	4		110	80	30
SJ 01811		31N	11W	31	2	2			89	50	39
SJ 02994		31N	11W	33	4	3	2		300	200	100
SJ 02993		31N	11W	33	4	3	2		280	160	120
SJ 01137		31N	11W	33	4	4	4		37	19	18
SJ 02277		31N	11W	34	1	2			16	7	9
SJ 02167		31N	11W	34	1	4			83	69	14
SJ 01533		31N	11W	34	1	4			58	40	18
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SJ 00660	31N	11W	34	2	1	1					
SJ 01768	31N	11W	34	2	2						
SJ 01721	31N	11W	34	2	2						
SJ 03172	31N	11W	34	2	2	2					
SJ 03047	31N	11W	34	2	2	4					
SJ 02119	31N	11W	34	2	3						
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SJ 00659	31N	11W	34	2	3						
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SJ 02972	31N	11W	34	2	3	4					
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SJ 03106	31N	11W	34	2	4	1					
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SJ 02856	31N	11W	34	3	2	3			25	7	18
SJ 02852	31N	11W	34	3	2	3			20	6	14
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SJ 03025	31N	11W	34	3	2	3			30	11	19
SJ 03014	31N	11W	34	3	2	4			41	21	20
SJ 03002	31N	11W	34	3	2	4			65	45	20
SJ 02861	31N	11W	34	3	3	1			28	8	20
SJ 03220	31N	11W	34	3	3	1			65	25	40
SJ 03042	31N	11W	34	3	3	2			30	10	20
SJ 03710 POD1	31N	11W	34	3	3	2			50	30	20
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SJ 02857	31N	11W	34	3	4	1			22	10	12
SJ 03492	31N	11W	34	3	4	2			19	7	12
SJ 03631	31N	11W	34	3	4	2			19	6	13
SJ 03493	31N	11W	34	3	4	2			11	3	8
SJ 03357	31N	11W	34	3	4	2			12	4	8
SJ 03260	31N	11W	34	3	4	4			33	11	22
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SJ 03720 POD1	31N	11W	34	4	1	3			18	8	10
SJ 03497	31N	11W	34	4	1	4			25		
SJ 03402	31N	11W	34	4	1	4			19	6	13
SJ 03377	31N	11W	34	4	2	4			28	12	16
SJ 03016	31N	11W	34	4	3	1			22	6	16
SJ 03739 POD1	31N	11W	34	4	3	1			20	5	15
SJ 02966	31N	11W	34	4	3	3			24	6	18
SJ 00985	31N	11W	34	4	4				23	7	16
SJ 02827	31N	11W	35	1	1	2			22	7	15
SJ 03371	31N	11W	35	1	1	3			22	5	17
SJ 02902	31N	11W	35	1	1	3			30	5	25
SJ 02897	31N	11W	35	1	3	1			22		
									21	7	14
									20	6	14
									23	6	17
									20	4	16
									21	4	17
									23	6	17
									30		
									27	6	21
									25	15	10
									22	6	16
									41	3	38
									27	6	21
									48	17	31
									21	6	15
									30	10	20
									25		
									20	2	18
									35		
									25	3	22
									48	20	28
									40	16	24
									60		
									21	5	16
									19	5	14
									17	6	11

SJ 00333		31N	11W	35	1	3	4				
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SJ 03543		31N	11W	35	1	4	4			43	12	31
SJ 01144		31N	11W	35	1	4	4			61	30	31
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SJ 00185		31N	11W	35	2	3					155	
SJ 03676		31N	11W	35	2	3	1			54		
SJ 03560		31N	11W	35	2	3	2			52	19	33
SJ 03165		31N	11W	35	2	4	4			62	32	30
SJ 03166		31N	11W	35	2	4	4			20		
SJ 00983		31N	11W	35	3					20		
SJ 00939		31N	11W	35	3					110	70	40
SJ 00940		31N	11W	35	3	1				60	30	30
SJ 01580		31N	11W	35	3	1	1			64	15	49
SJ 02932		31N	11W	35	3	1	2			65	30	35
SJ 02933		31N	11W	35	3	1	2			27	14	13
SJ 03574		31N	11W	35	3	1	4			37	24	13
SJ 00591		31N	11W	35	3	1	4			100		
SJ 00939 1		31N	11W	35	3	2				83	54	29
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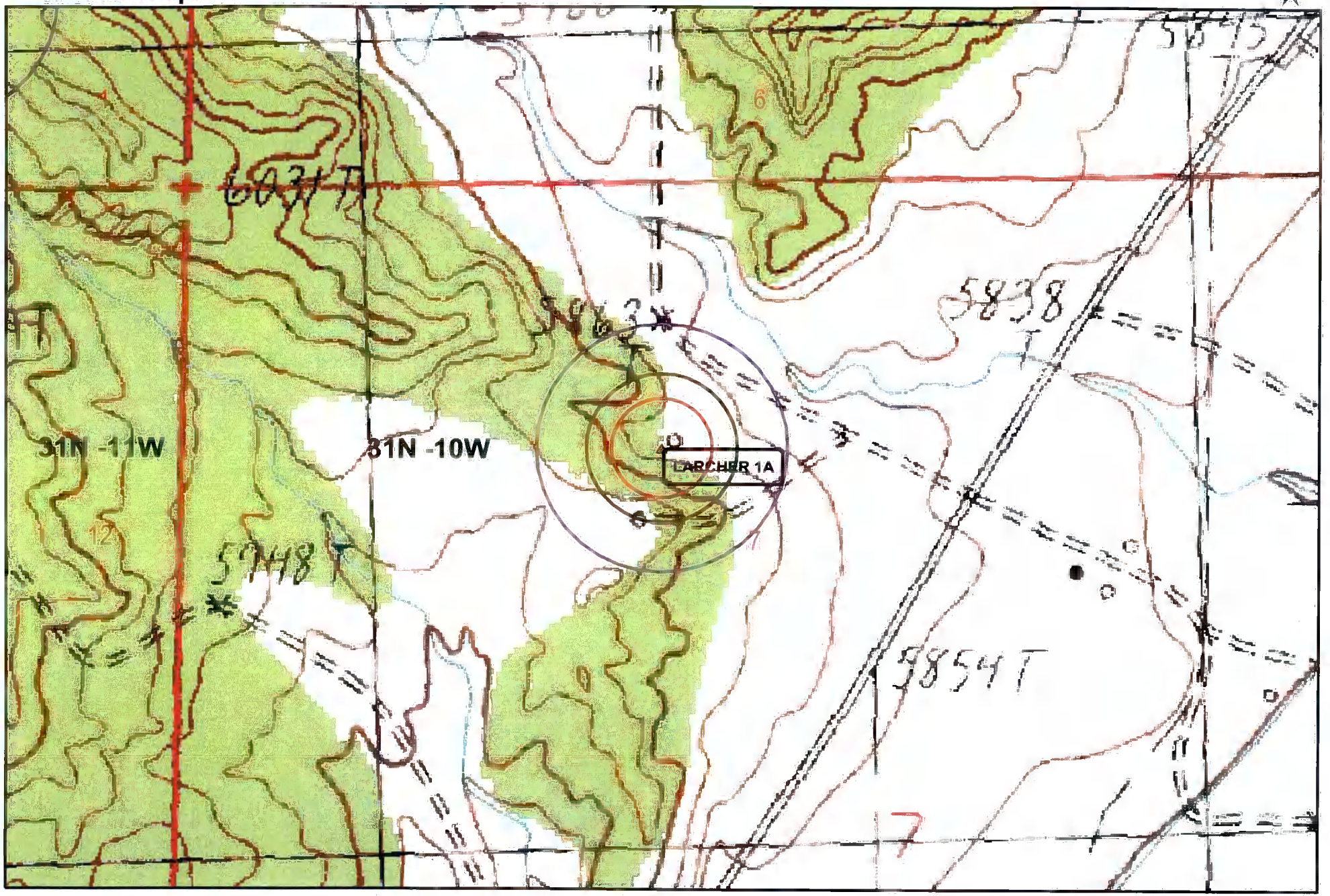
										37	19	18

Record Count: 229

ConocoPhillips

USGS TOPO MAP LARCHER 1A



Wetlands data aquired from U.S. Fish and Wildlife
http://wetlandswms.er.usgs.gov

Ground Water
iWaters
COP

Buffers
200ft
300ft
500ft
Wetlands

0 500 1,000 Feet
1:6,000

NAD_1983_StatePlane_NMWest_FIPS_3003

8/08

ConocoPhillips

AERIAL MAP LARCHER 1A

Data Source
Aerial flown locally Sedgewick in 2005.

1000FT

300FT

0 500 1,000 Feet

1:6,000

NAD_1983_SP_
NM West_FIPS_3003

8/08

Mines, Mills and Quarries Web Map

LARCHER 1A

Unit Letter: C, Section: 07, Town: 031N, Range: 010W

lines, Mills & Quarries Commodity Groups

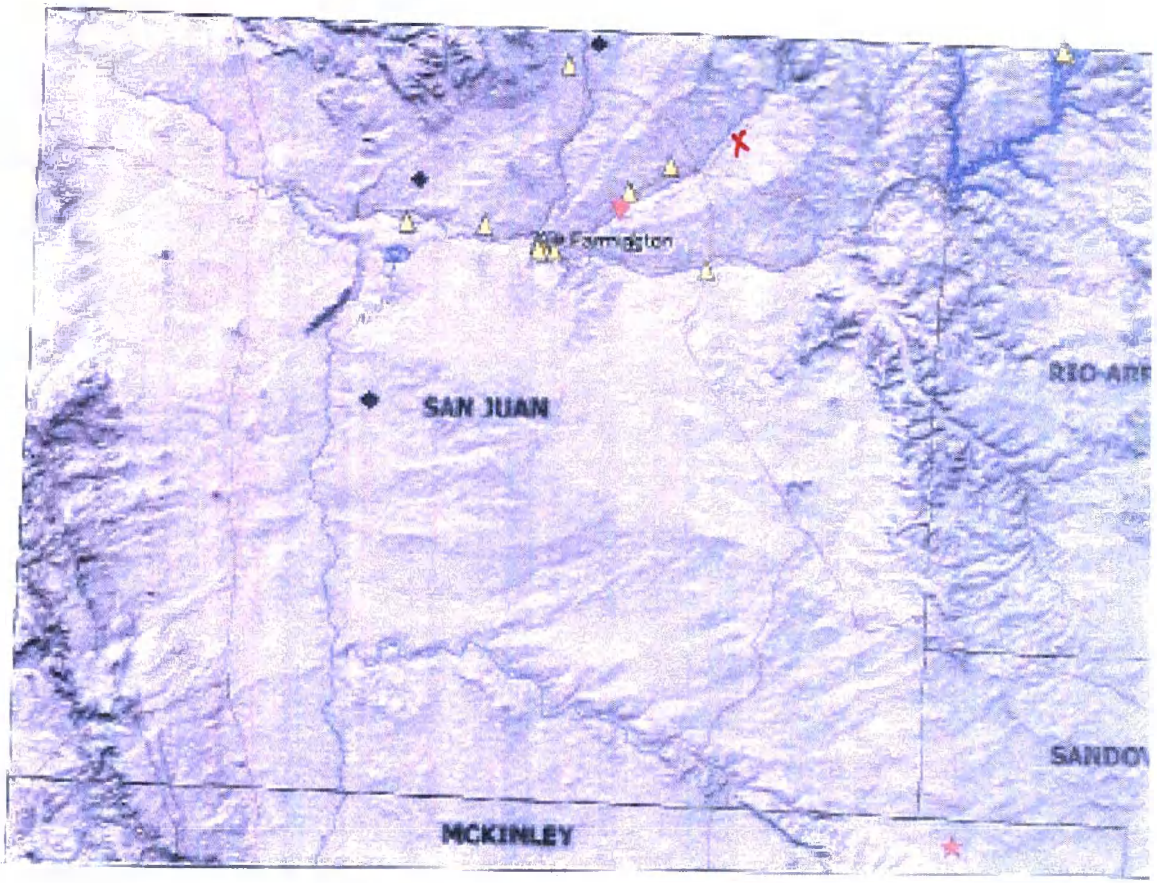
- Aggregate & Stone Mines
- Coal Mines
- Industrial Minerals Mines
- Industrial Minerals Mills
- Metal Mines and Mill Concentrate
- Potash Mines & Refineries
- Smelters & Refinery Ops.
- Uranium Mines
- Uranium Mills

opulation

- Cities - major

ransportation

- Railways
- Interstate Highways
- Major Roads

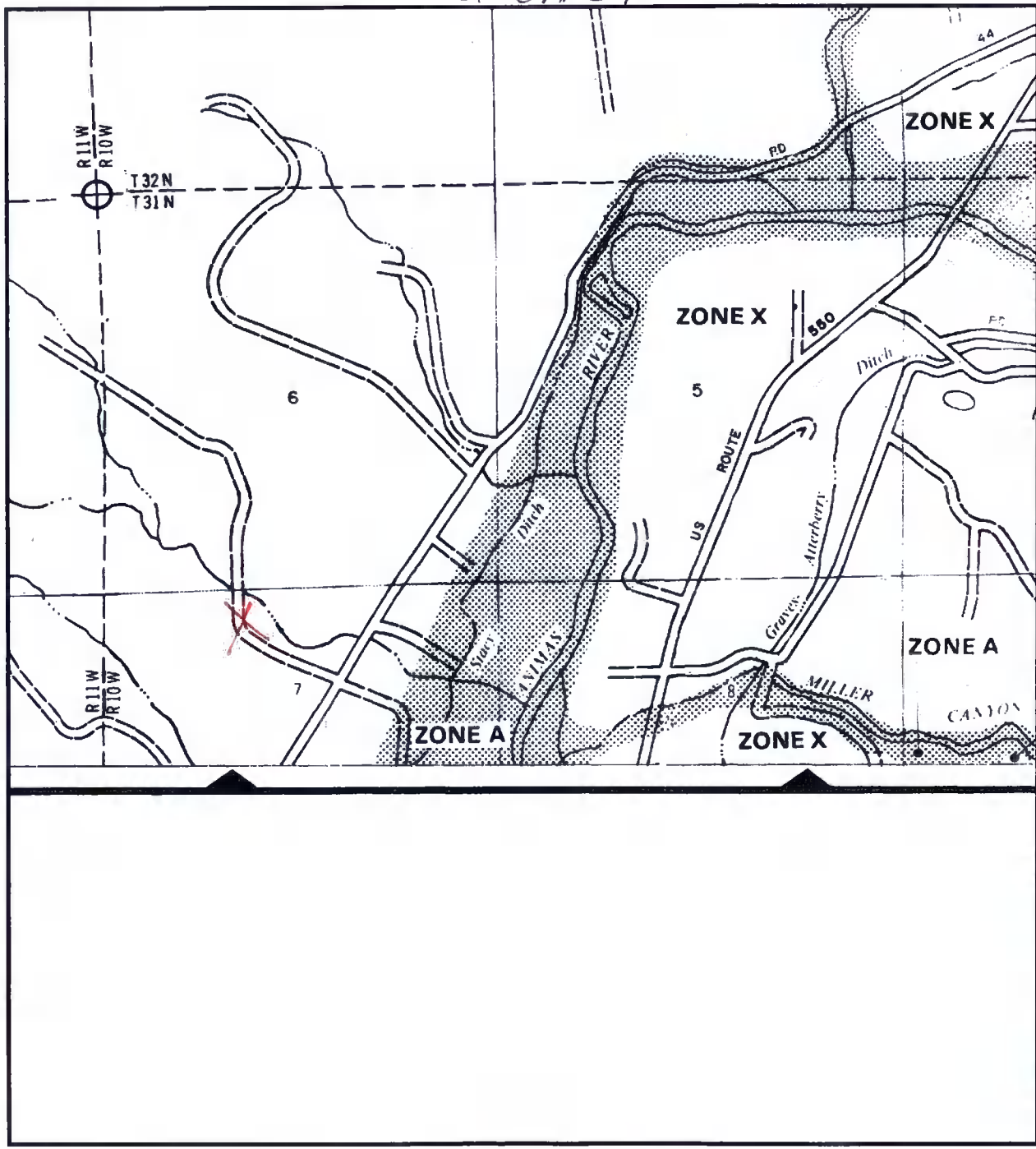


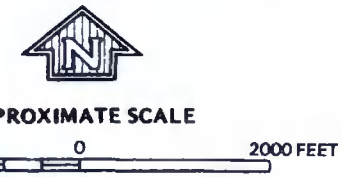
SCALE 1 : 1,180,363

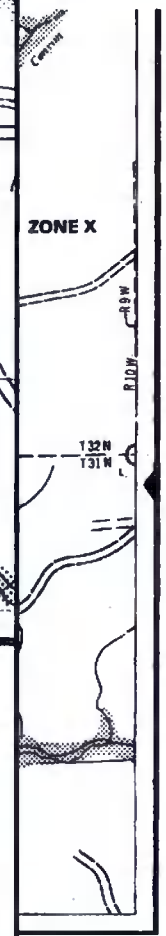
20 0 20 40 60

MILES

Larcher 1A







NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY, NEW MEXICO
UNINCORPORATED AREAS

PANEL 150 OF 1450
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
350064 0150

EFFECTIVE DATE:
AUGUST 4, 1988

Federal Emergency Management Agency

LARCHER 1A

Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'LARCHER 1A', which is located at 36.91718 degrees North latitude and 107.92581 degrees West longitude. This location is located on the Cedar Hill 7.5' USGS topographic quadrangle. This location is in section 7 of Township 31 North Range 10 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is Cedar Hill, located 2.6 miles to the northeast. The nearest large town (population greater than 10,000) is Farmington, located 20.0 miles to the southwest (National Atlas). The nearest highway is US Highway 550, located 1.0 miles to the east. The location is on Private land and is 735 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Animas. Colorado, New Mexico, Sub-basin. This location is located 1797 meters or 5894 feet above sea level and receives 12 inches of rain each year. The vegetation at this location is classified as Colorado Plateau Pinon-Juniper Woodland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 69 feet. This estimation is based on the data published on the New Mexico Engineer's iWaters Database website and water depth data from ConocoPhillips' cathodic wells. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. The nearest stream is 467 feet to the northeast and is classified by the USGS as a perennial stream. The nearest perennial stream is 467 feet to the northeast. The nearest water body is 3,990 feet to the northwest. It is classified by the USGS as an intermittent lake and is 0.4 acres in size. The nearest spring is 11,439 feet to the west. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 1,511 feet to the southeast. The nearest wetland is a 0.7 acre Freshwater Pond located 2,789 feet to the east. The slope at this location is 5 degrees to the east as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is MODERN ALLUVIUM--Includes Piney Creek Alluvium and younger deposits with a Quaternary age younger alluvium and surficial deposits substrate. The soil at this location is 'Blancot-Fruitland association, gently sloping' and is well drained and not hydric with moderate erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 3.7 miles to the northeast as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

Regional Geological context:

Quaternary and recent deposits in the San Juan Basin include stream-deposited alluvium and older terrace deposits, landslide deposits, and Aeolian sand. Most Quaternary and younger deposits area unconsolidated and form a thin covering over older bedrock sediments.
Stream-deposited alluvium and older terrace deposits are associated with major streams and rivers in the San Juan Basin. The alluvium consists of unconsolidated sediments that range from silt to cobbles in size but predominantly are sand and gravel. Along major streams the alluvium is varied in composition, depending on the mix of material from the various erosion source areas and fluvialy-driven sorting. Alluvial deposits also occur as a thin veneer of fine-grained sediments in the valleys of intermittent streams.
Landslide deposits are mapped on the northeastern flank of the Chuska Mountains and locally in the San Juan Mountains. These colluvial deposits consist of material derived from the topographically higher source areas. The landslide material on the flank of Chuska Mountains consists of reworked sand from the Chuska Sandstone; the deposits in the San Juan Mountains primarily are derived from volcanic or volcaniclastic sources.

Unconsolidated wind-blown deposits are common in the central part of the basin, although they generally are not mapped on small scale geologic maps. Typically, these deposits are very thin, but local dunes near dry washes, which are excellent sources of fine-grained material, may reach heights of 20 feet. These recent Aeolian deposits are not known to yield water to wells.

Hydraulic Properties:

In the absence of other sources of water, alluvial deposits, where present, are commonly relied upon as a source of water for domestic and livestock use. Along the major rivers and streams, wells are of conventional vertical design, whereas in the valleys of intermittent streams, where the hydraulic conductivities and saturated thickness are generally small, most wells are constructed as galleries of horizontal drains feeding to a central collector. Reported well yields range from less than 1 gallon per minute to as much as 1,100 gallons per minute. The median yield of 48 wells is 15 gallons per minute. Hydraulic conductivities of sand and gravel can vary from 10 to 1,000,000 gallons per day per foot squared (roughly 1 to 100,000 feet per day) (Freeze and Cherry, 1979, table 2.2.) but a more typical range is from 15 feet per day for fine sand to about 1,000 feet per day for coarse gravel (Lohman, 1972, table 17). Tests along the San Juan River upstream from Farmington indicate that the hydraulic conductivity of alluvium ranges from 0.006 to 220 feet per day (Peter et al, 1987, p. 29). The thickness of alluvium at this site was reported to range from about 14 to 61 feet, and the saturated thickness was less than 25 feet in all 13 test holes. Water occurs in the alluvium under unconfined conditions. No tests have been made where the storage coefficient of the alluvium was determined. However, a typical specific yield for moderate to well-sorted unconsolidated sediments would be in the range of 0.1 to 0.25.
No known hydraulic data exists for the landslide and recent Aeolian deposits in the basin. No instances are known where these deposits are used as a source of water.

References:
Freeze, R.A., and Cherry, J.A., 1979, Groundwater: Englewood cliffs, N.J., Prentice-Hall, Inc., 604 p.
Lohman, S.W., 1972, Ground-water hydraulics: U.S.G.S. Professional Paper 708, 70 p.
Peter, K.D., Williams, R.A., and King, K.W., 1987, Hydrogeologic characteristics of the Lee Acres landfill area, San Juan County, New Mexico: U.S.G.S. Water Resources Investigations Report 87-4246, 69 p.

Burlington Resources Oil & Gas Company, LP
San Juan Basin
Below Grade Tank Design and Construction

In accordance with NMAC 19.15.17 the following information describes the design and construction of below grade tanks on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all below grade tanks (BGT). A separate plan will be submitted for any BGT which does not conform to this plan.

General Plan:

1. BR will design and construct a properly sized and approved BGT which will contain liquids and should prevent contamination of fresh water to protect the public health and environment.

2. BR signage will comply with 19.15.3.103 NMAC when BR is the operator. If BR is not the operator it will comply with 19.15.17.11NMAC. BR includes Emergency Contact information on all signage.

3. BR has approval to use alternative fencing that provides better protection. BR constructs fencing around the BGT using 4 foot hog wire fencing topped with two strands of barbed wire, or with a pipe top rail. A six foot chain link fence topped with three strands of barbed wire will be use if the well location is within 1000 feet of permanent residence, school, hospital, institution or church. BR ensures that all gates associated with the fence are closed and locked when responsible personnel are not onsite.

4. BR will construct a screened, expanded metal covering, on the top of the BGT.

5. BR shall ensure that a below-grade tank is constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight as shown on design drawing and specification sheet.

6. The BR below-grade tank system shall have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom as shown on design drawing.

7. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.

8. BR will construct and use a below-grade tank that does not have double walls. The below-grade tank's side walls will be open for visual inspection for leaks, the below-grade tank's bottom is elevated a minimum of six inches above the underlying ground surface and the below-grade tank is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.

9. BR has equipped the below-grade tanks with the ability to detect high level in the tank and provide alarm notification and shutdown process streams into the tank. Once high level is detected RTU logic closes the inlet separator sales valve and does not permit vent valve to open. This shutdown of the sales valve and gagging of the vent valves prevents any hydrocarbon process streams from entering the pit tank once a high level is detected. Furthermore, an electronic page is sent to the BR MSO for that well site and to the designated contract "Water-Hauling" Company indicating a high level and that action must be taken to address this alarm. The environmental drain line from BR's compressor skid under normal operating conditions is in the open position. The environmental drain line is in place to capture any collected rain water or spilled lubricants from our compressor skids. The swab drain line is a manually operated drain and by normal operating procedures is in the closed position. The tank drain line is also a manually operated drain and during normal operations it is in the closed position.

10. The geomembrane liner consists of a 45-mil flexible LLDPE material manufactured by Raven Industries as J45BB. This product is a four layer reinforced laminated containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. The J45BB is reinforced with 1300 denier (minimum) tri-directional scrim reinforcement. It exceeds ASTMD3083 standard by 10%. J45BB has a warranty for 20 years from Raven Industries and is attached. It is typically used in Brine Pond, Oilfield Pit liner and other industrial applications. The manufacture specific sheet is attached and the design attached displays the proper installation of the liner.

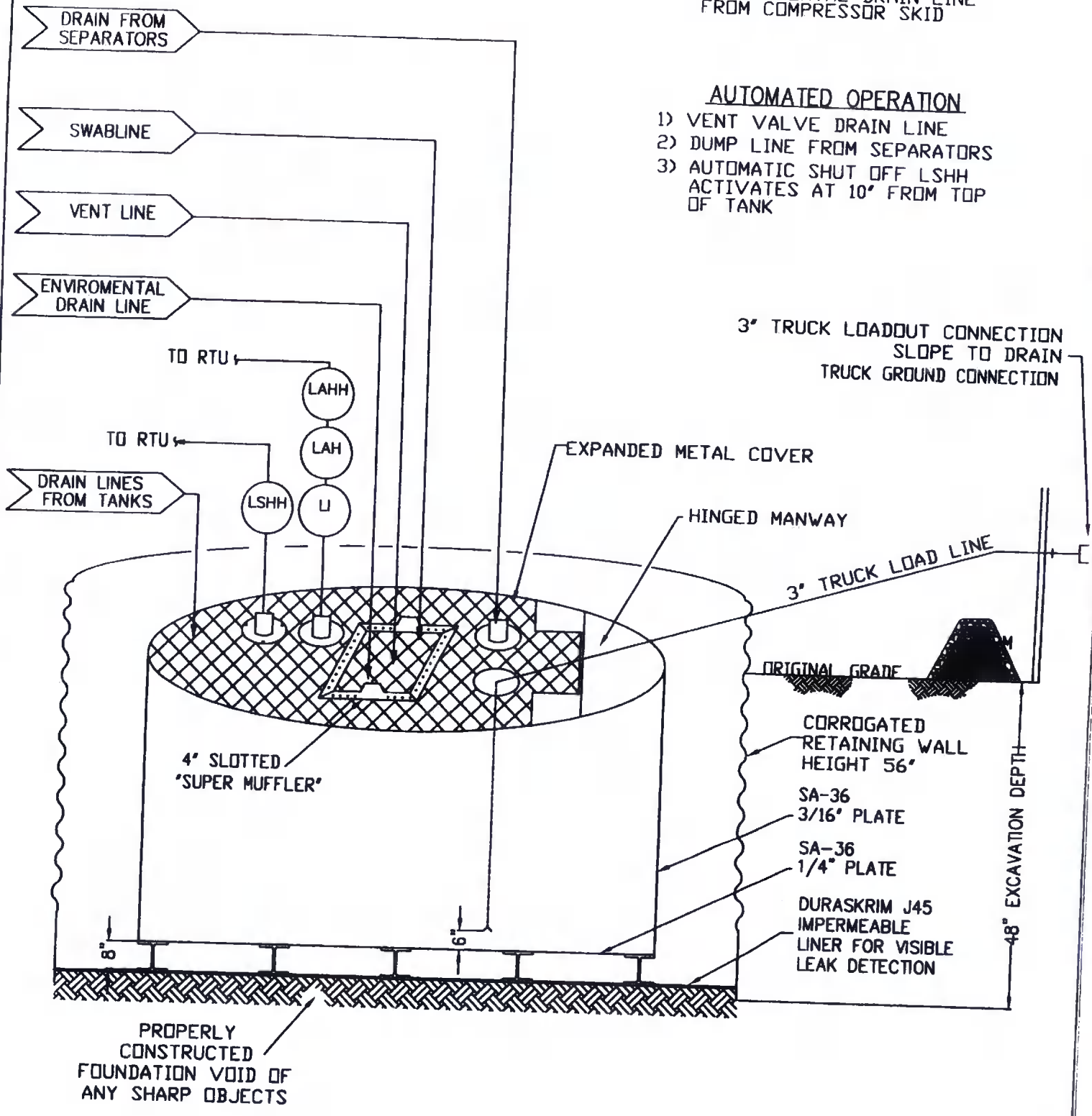
11. The general specification for design and construction are attached in the BR document.

MANUAL OPERATION

1) PRODUCTION TANKS DRAINLINE
2) SWABLINE DRAIN LINE
3) ENVIROMENTAL DRAIN LINE FROM COMPRESSOR SKID

AUTOMATED OPERATION

1) VENT VALVE DRAIN LINE
2) DUMP LINE FROM SEPARATORS
3) AUTOMATIC SHUT OFF LSHH ACTIVATES AT 10' FROM TOP OF TANK



ConocoPhillips

San Juan Business Unit

PRODUCED WATER PIT TANK

OPEN TOP GRAVITY FLOW TANK
INTERNALLY COATED WITH
12-14 MILS AMERON AMERCOAT 385

DURA-SKRIM® J30, J36 & J45

PROPERTIES	TEST METHOD	J30BB		J36BB		J45BB	
		Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages
Appearance		Black/Black		Black/Black		Black/Black	
Thickness	ASTM D 5199	27 mil	30 mil	32 mil	36 mil	40 mil	45 mil
Weight Lbs Per MSF (oz/yd²)	ASTM D 5261	126 lbs (18.14)	140 lbs (20.16)	151 lbs (21.74)	168 lbs (24.19)	189 lbs (27.21)	210 lbs (30.24)
Construction		**Extrusion laminated with encapsulated tri-directional scrim reinforcement					
Ply Adhesion	ASTM D 413	16 lbs	20 lbs	19 lbs	24 lbs	25 lbs	31 lbs
1" Tensile Strength	ASTM D 7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	138 lbf MD 105 lbf DD
1" Tensile Elongation @ Break % (Film Break)	ASTM D 7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD
1" Tensile Elongation @ Peak % (Scrim Break)	ASTM D 7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31DD	20 MD 20 DD	36 MD 36 DD
Tongue Tear Strength	ASTM D 5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	104 lbf MD 92 lbf DD	100 lbf MD 100 lbf DD	117 lbf MD 118 lbf DD
Grab Tensile	ASTM D 7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	222 lbf MD 223 lbf DD	220 lbf MD 220 lbf DD	257 lbf MD 258 lbf DD
Trapezoid Tear	ASTM D 4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD
* Dimensional Stability	ASTM D 1204	<1	<0.5	<1	<0.5	<1	<0.5
Puncture Resistance	ASTM D 4833	50 lbf	64 lbf	65 lbf	83 lbf	80 lbf	99 lbf
Maximum Use Temperature		180° F	180° F	180° F	180° F	180° F	180° F
Minimum Use Temperature		-70° F	-70° F	-70° F	-70° F	-70° F	-70° F

MD = Machine Direction
DD = Diagonal Directions

Note: Minimum Roll Averages are set to take into account product variability in addition to testing variability between laboratories.

*Dimensional Stability Maximum Value

**DURA-SKRIM J30BB, J36BB & J45BB are a four layer reinforced laminate containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. DURA-SKRIM J30BB, J36BB & J45BB are reinforced with a 1300 denier (minimum) tri-directional scrim reinforcement.

RAVEN INDUSTRIES

PLANT LOCATION
Sioux Falls, South Dakota

SALES OFFICE
P.O. Box 5107
Sioux Falls, SD 57117-5107
(605) 335-0174
(605) 331-0333 FAX
800-635-3456

08/06

RAVEN INDUSTRIES INC.
EXPOSED GEOMEMBRANE LIMITED WARRANTY

Raven Industries Inc. warrants Dura-Skrim J30BB, J36BB, and J45BB to be free from manufacturing defects and to be able to withstand normal exposure to sunlight for a period of 20 years from the date of sale for normal use in approved applications in the U.S and Canada, excluding Hawaii. This warranty is effective for products sold and shipped from January 1, 2008 to December 31, 2008. These dates will be updated prior to December 31, 2008.

This Limited Warranty does not include damages or defects in the Raven geomembrane resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, or tornadoes. The term "normal use" as used herein does not include, among other things improper handling during transportation, unloading, storage or installation, the exposure of Raven geomembranes to harmful chemicals, atypical atmospheric conditions, abuse of Raven geomembranes by machinery, equipment or people; improper site preparation or covering materials, excessive pressures or stresses from any source or improper application or installation. Raven geomembrane material warranty is intended for commercial use only and is not in effect for the consumer as defined in the Magnuson Moss Warranty or any similar federal, state, or local statues. The parties expressly agree that the sale hereunder is for commercial or industrial use only.

Should defects or premature loss of use within the scope of the above Limited Warranty occur, Raven Industries Inc. will, at its option, repair or replace the Raven geomembrane on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. Raven Industries Inc. will have the right to inspect and determine the cause of any alleged defect in the Raven geomembrane and to take appropriate steps to repair or replace the Raven geomembrane if a defect exists which is covered under this warranty. This Limited Warranty extends only to Raven's geomembrane, and does not extend to the installation service of third parties nor does it extend to materials furnished or installed by others in connection with the intended use of the Raven geomembranes.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail, to the General Manager of Engineered Films Division of Raven Industries Inc. within ten (10) days of becoming aware of the alleged defect. Should the required notice not be given, the defect and all warranties are waived by the Purchaser, and Purchaser shall not have any rights under this warranty. Raven Industries Inc. shall not be obligated to perform repairs or replacements under this warranty unless and until the area to be repaired or replaced is clean, dry, and unencumbered. This includes, but is not limited to, the area made available for repair and/or replacement of Raven geomembrane to be free from all water, dirt, sludge, residuals and liquids of any kind. If after inspection it is determined that there is no claim under this Limited Warranty, Purchaser shall reimburse Raven Industries Inc. for its costs associated with the site inspection.

In the event the exclusive remedy provided herein fails in its essential purpose, and in that event only, the Purchaser shall be entitled to a return of the purchase price for so much of the material as Raven Industries Inc. determines to have violated the warranty provided herein. Raven Industries Inc. shall not be liable for direct, indirect, special, consequential or incidental damages resulting from a breach of this warranty including, but not limited to, damages for loss of production, lost profits, personal injury or property damage. Raven Industries Inc. shall not be obligated to reimburse Purchaser for any repairs, replacement, modifications or alterations made by Purchaser unless Raven Industries Inc. specifically authorized, in writing, said repairs, replacements, modifications or alteration in advance of them having been made. Raven Industry's liability under this warranty shall in no event exceed the replacement cost of the material sold to the Purchaser for the particular installation in which it failed.

Raven Industries Inc. neither assumes nor authorizes any person other than the undersigned of Raven Industries Inc. to assume for it any other or additional liability in connection with the Raven geomembrane made on the basis of the Limited Warranty. The Limited Warranty on the Raven geomembrane herein is given in lieu of all other possible material warranties, either expressed or implied, and by accepting delivery of the material; Purchaser waives all other possible warranties, except those specifically given. This Limited Warranty may only be modified by written document mutually executed by Owner and Raven Industries Inc.

Limited Warranty is extended to the purchaser/owner and is non-transferable and non-assignable; i.e., there are no third-party beneficiaries to this warranty.

Purchaser acknowledges by acceptance that the Limited Warranty given herein is accepted in preference to any and other possible materials warranties.

THIS LIMITED WARRANTY SHALL BE GOVERNED BY SOUTH DAKOTA LAW AND VENUE FOR ALL LEGAL PROCEEDINGS IN CONNECTION WITH THIS LIMITED WARRANTY SHALL BE IN MINNEHAHA COUNTY, SOUTH DAKOTA. RAVEN INDUSTRIES INC. MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESSED OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS IS THE ONLY WARRANTY THAT APPLIES TO THE MATERIALS REFERRED TO HEREIN AND RAVEN INDUSTRIES INC. DISCLAIMS ANY LIABILITY FOR ANY WARRANTIES GIVEN BY ANY OTHER PERSON OR ENTITY, EITHER WRITTEN OR ORAL.

RAVEN INDUSTRIES' WARRANTY BECOMES AN OBLIGATION OF RAVEN INDUSTRIES INC. TO PERFORM UNDER THE WARRANTY ONLY UPON RECEIPT OF FINAL PAYMENT AND EXECUTION BY A DULY AUTHORIZED OFFICER OF RAVEN INDUSTRIES INC.

Burlington Resources Oil & Gas Company, LP
San Juan Basin
Below Grade Tank Maintenance and Operating Plan

In accordance with Rule 19.15.17 the following information describes the operation and maintenance of Below Grade Tank (BGT) on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all BGT. A separate plan will be submitted for any BGT which does not conform to this plan.

General Plan:

1. BR will operate and maintain a BGT to contain liquids and solids and maintain the integrity of the liner, liner system and secondary containment system to prevent contamination of fresh water and protect public health and environment. BR will accomplish this by performing an inspection on a monthly basis, installing cathodic protection, and automatic overflow shutoff devices as seen on the design plan.

2. BR will not discharge into or store any hazardous waste in the BGT.

3. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.

4. As per 19.17.15.12 Subsection D, Paragraph 3, BR will inspect the below-grade tank at least monthly reviewing several items which include 1) containment berms adequate and no oil present, 2) tanks had no visible leaks or sign of corrosion, 3) tank valves, flanges, and hatches had no visible leaks and 4) no evidence of significant spillage of produced liquids. In addition, BR's multi-skilled operators (MSOs) are required to visit each well location once per week. If detected on either inspection, BR shall remove any visible or measurable layer of oil from the fluid surface of a below-grade tank in an effort to prevent significant accumulation of oil overtime. The written record of the monthly inspections will include the items listed above and will be maintained for five years.

5. BR shall require and maintain a 10" adequate freeboard to prevent overtopping of the below-grade tank.

6. If the below grade tank develops a leak, or if any penetration of the pit liner or below grade tank, occurs below the liquid's surface, then BR shall remove all liquid above the damage or leak line within 48 hours. BR shall notify the appropriate district office. BR shall repair or replace the pit liner or below grade tank, within 48 hours of discovery. If the below grade tank or pit liner does not demonstrate integrity, BR shall promptly remove and install a below grade tank or pit liner that complies with Subsection I of 19.15.17.11 NMAC. BR shall notify the appropriate district office of a discovery of leaks less than 25 barrels as required pursuant to Subsection B of 19.15.3.116 NMAC shall be reported within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19.15.3.116 NMAC shall be reported to the division's Environmental Bureau Chief.

Burlington Resources Oil & Gas Company, LP
San Juan Basin
Below Grade Tank Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of Below Grade Tanks (BGTs) on Burlington Resources Oil & Gas Company, LP locations hereinafter known as BR locations. This is BR's standard procedure for all BGTs. A separate plan will be submitted for any BGT which does not conform to this plan.

General Requirements:

1. BR shall close a below-grade tank within the time periods provided in Subsection A of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I o f19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) permitted below-grade tanks within 60 days of cessation of the below-grade tank's operation., or c) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.

2. BR shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.

3. BR will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves. Documentation of how the below-grade tank was disposed of or recycled will be provided in the closure report.

4. If there is any on-site equipment associated with a below-grade tank, then BR shall remove the equipment, unless the equipment is required for some other purpose.

5. BR shall test the soils beneath the below-grade tank to determine whether a release has occurred. BR shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 100 mg/kg; and the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. BR shall notify the division of its results on form C-141.

6. If BR or the division determines that a release has occurred, then BR shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

7. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.

8. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
    i. Operator's name
    ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.

9. The surface owner shall be notified of BR's closing of the below-grade tank prior to closure as per the approved closure plan via certified mail, return receipt requested.

10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.

11. BR shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM stipulated seed mixes will used on federally jurisdicted lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. If alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. BR will repeat seeding or planting will be continued until successful vegetative growth occurs.

12. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.

13. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the below-grade tank. Closure report will be filed on C-144 and incorporate the following:
    - Soil Backfilling and Cover Installation
    - Re-vegetation application rates and seeding techniques
    - Photo documentation of the site reclamation
    - Confirmation Sampling Results
    - Proof of closure notice