

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 ResourcesDepartment  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-144

July 21, 2008

For temporary pits, closed-loop systems, 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: ☒ 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: <b>Burlington Resources Oil &amp; Gas Company, LP</b>	OGRID#: <b>14538</b>
Address: <b>PO Box 4289, Farmington, NM 87499</b>	<b>RCVD JUL 25 '08</b> <b>OIL CONSV. DIV.</b>
Facility or well name: <b>Frost #501S</b>	<b>DIST. 3</b>
API Number: <b>30-045-34341</b>	OCD Permit Number: _____
U/L or Qtr/Qtr: <b>P(SESE)</b> Section: <b>25</b> Township: <b>27N</b> Range: <b>10W</b> County: <b>San Juan</b>	
Center of Proposed Design: Latitude: <b>36.541897' N</b> Longitude: <b>107.541771' W</b> NAD: <input type="checkbox"/> 1927 <input checked="" type="checkbox"/> 1983	
Surface Owner: <input checked="" type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Tribal Trust or Indian Allotment	

2	
<input checked="" type="checkbox"/> <b>Pit:</b> Subsection F or G of 19.15.17.11 NMAC	
Temporary: <input checked="" type="checkbox"/> Drilling <input type="checkbox"/> Workover	
<input type="checkbox"/> Permanent <input type="checkbox"/> Emergency <input type="checkbox"/> Cavitation <input type="checkbox"/> P&A	
<input checked="" type="checkbox"/> Lined <input type="checkbox"/> Unlined Liner type: Thickness <b>20</b> mil <input checked="" type="checkbox"/> LLDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____	
<input type="checkbox"/> String-Reinforced	
Liner Seams: <input checked="" type="checkbox"/> Welded <input checked="" type="checkbox"/> Factory <input type="checkbox"/> Other _____	Volume: <b>7000</b> bbl Dimensions L <b>120'</b> x W <b>55'</b> x D <b>12'</b>

3	
<input type="checkbox"/> <b>Closed-loop System:</b> Subsection H of 19.15.17.11 NMAC	
Type of Operation: <input type="checkbox"/> P&A <input type="checkbox"/> Drilling a new well <input type="checkbox"/> Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)	
<input type="checkbox"/> Drying Pad <input type="checkbox"/> Above Ground Steel Tanks <input type="checkbox"/> Haul-off Bins <input type="checkbox"/> Other _____	
<input type="checkbox"/> Lined <input type="checkbox"/> Unlined Liner type: Thickness _____ mil <input type="checkbox"/> LLDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVD <input type="checkbox"/> Other _____	
Liner Seams: <input type="checkbox"/> Welded <input type="checkbox"/> Factory <input type="checkbox"/> Other _____	

4	
<input checked="" type="checkbox"/> <b>Below-grade tank:</b> Subsection I of 19.15.17.11 NMAC	
Volume: <b>120</b> bbl Type of fluid: <b>Produced Water</b>	
Tank Construction material: <b>Metal</b>	
<input type="checkbox"/> Secondary containment with leak detection <input checked="" type="checkbox"/> Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off	
<input type="checkbox"/> Visible sidewalls and liner <input type="checkbox"/> Visible sidewalls only <input type="checkbox"/> Other _____	
Liner Type: Thickness <b>30</b> mil <input checked="" type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____	

5	
<input type="checkbox"/> <b>Alternative Method:</b>	
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	

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**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 **Please See Design Plan**

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
- ☐ 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 ☒ No

☐ NA

**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 ☐ No

☒ NA

**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 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*

- ☒ 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 NMAC  
☒ Siting Criteria Compliance Demonstrations - 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 \_\_\_\_\_ 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 NMAC  
☐ 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 H<sub>2</sub>S, 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 ☒ Below-grade Tank ☐ Closed-loop System  
☐ Alternative

Proposed Closure Method: ☒ 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.*

- ☒ 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  
☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)  
☒ Soil Backfill and Cover Design Specifications - 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

**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

☐ 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

**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

☐ 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 feet 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 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

**On-Site 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.*

☒ 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 and Design of Burial Trench (if applicable) 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

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**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: 7/25/2008  
 e-mail address: crystal.tafoya@conocophillips.com 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:** *Brad Roff* **Approval Date:** 8-4-08

**Title:** Enviro Spec **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:** \_\_\_\_\_

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**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.

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**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 operations?

☐ Yes (If yes, please demonstrate compliance 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 true, 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: \_\_\_\_\_

Township: 27N    Range: 10W    Sections: 24,23,25,26,35,36

NAD27 X: Y: Zone:  Search Radius:

County:  Basin:  Number:  Suffix: 

## POD / Surface Data Report

## Avg Depth to Water Report

## Water Column Report

Clear Form

## iWATERS Menu

Help

## WATER COLUMN REPORT 07/25/2008


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

(quarters are biggest to smallest)

POD Number	(quarters are biggest to smallest)							X	Y	Depth Well	Depth Water	Water Column
	Tws	Rng	Sec	q	q	q	Zone					

No Records found, try again

Township: 27N      Range: 09W      Sections: 19,30,31

NAD27 X: Y: Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

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

## Avg Depth to Water Report

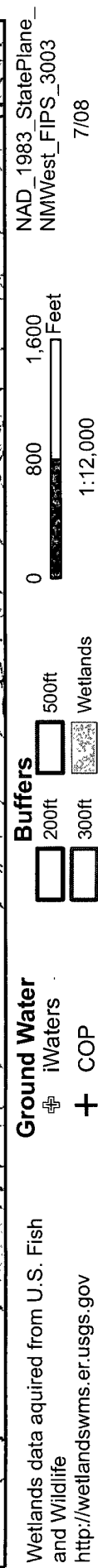
## Water Column Report

Help

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

POD Number	(quarters are biggest to smallest)							Depth	Depth	Water		
	Tws	Rng	Sec	q	q	q	Zone	X	Y	Well	Water	Colun

7/25/2008





Data Source  
Aerial flown locally Sedgewick in 2005.

1000ft 300ft

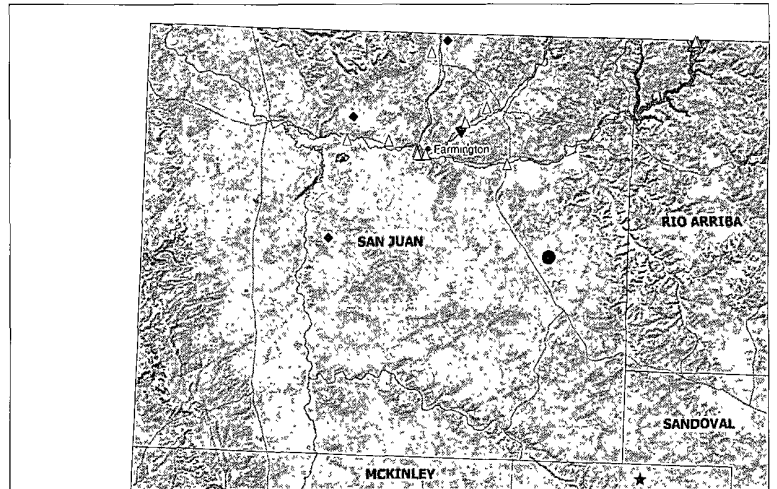
0 500 1,000 Feet  
1:6,000

NAD\_1983\_SP  
NM West\_FIPS\_3003  
7/08

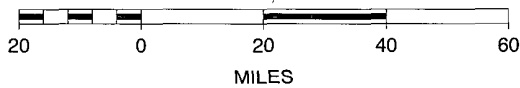
# Frost #501S Mines, Mills and Quarries Web Map

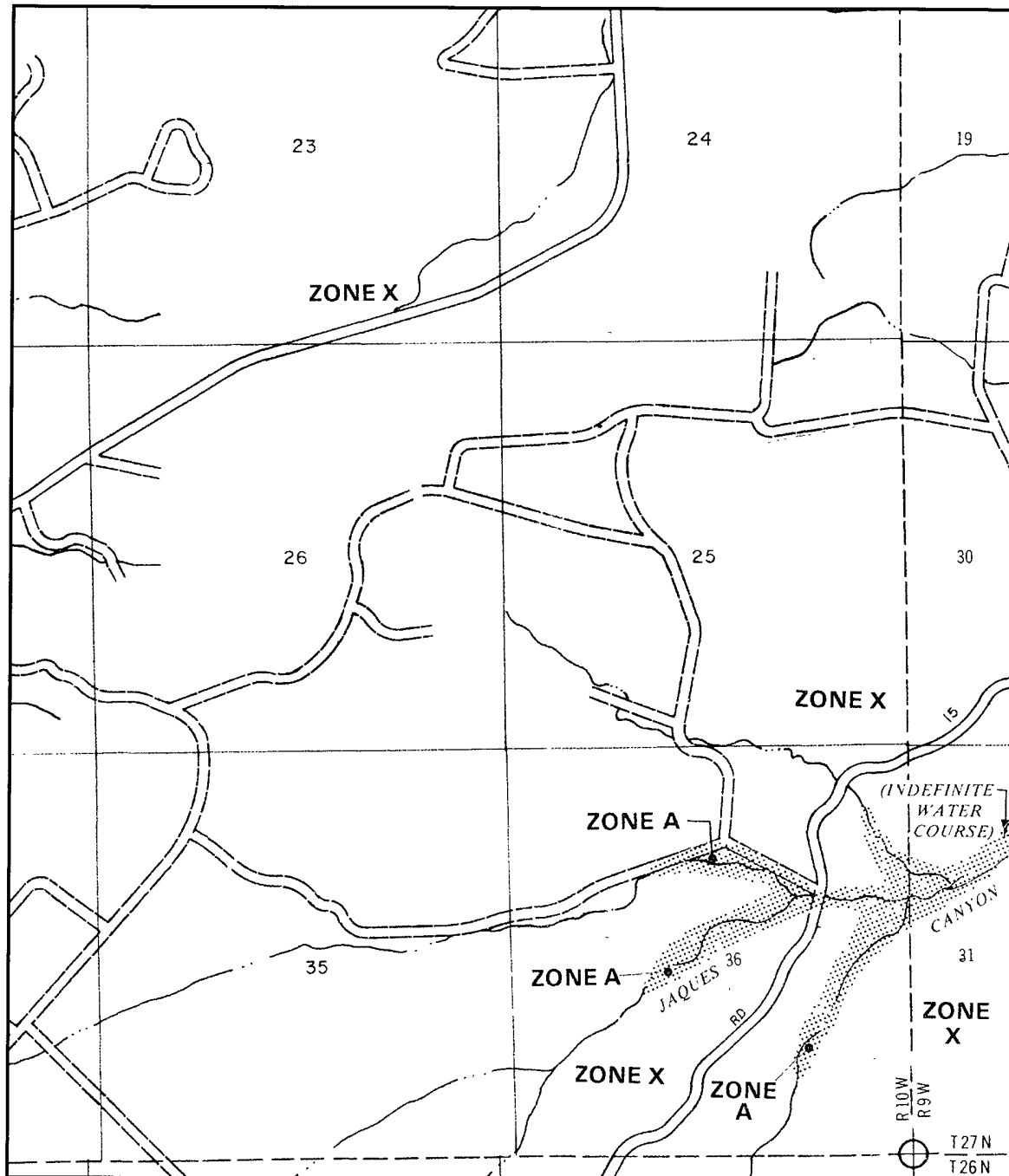
## Mines, Mills & Quarries Commodity Groups

-  **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**

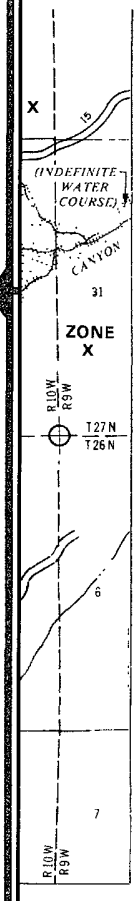
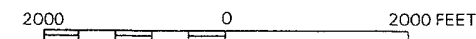


SCALE 1 : 1,913,945





APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

# **FIRM** FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY,  
NEW MEXICO  
UNINCORPORATED AREAS

PANEL 725 OF 1450  
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER  
350064 0725 B

EFFECTIVE DATE:  
AUGUST 4, 1988



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

### **Siting Criteria Compliance Demonstrations**

The Frost #501S is not located in an unstable area. The location is not over a mine and is not on the side of a hill. The location of the excavated pit material will not be located within 300' of any continuously flowing watercourse or 200' from any other watercourse.

# Hydrogeological Report for Frost #501S

## **Regional Geological context:**

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.

Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone et al., 1983, p. 30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones. Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3,500 feet.

## **Hydraulic Properties:**

**Reported well yields for** 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).

The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conducive to runoff than retention of precipitation.

## **References:**

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east-central San Juan Basin, New Mexico: USGS Professional Paper

552, 101 p.

Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.

Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.

Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.

Levings, G.W., Craig, S.d., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona, and Utah: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

## Tafoya, Crystal

---

**From:** Tafoya, Crystal  
**Sent:** Friday, July 25, 2008 10:33 AM  
**To:** 'mark\_kelly@nm.blm.gov'  
**Subject:** Surface Owner Notification

The following temporary pits will be closed on-site. The new OCD Pit Rule 17 requires the surface owner be notified. Please feel free to contact me at any time if you have any questions. Thanks!

Riddle B #222S  
San Juan 28-5 Unit #80M  
San Juan 29-7 Unit #153N  
Frost #501S  
Allison Unit #101

Thanks,

Crystal L. Tafoya  
Regulatory Technician  
**ConocoPhillips Company**  
San Juan Business Unit  
Phone: (505) 326-9837  
Email: Crystal.Tafoya@conocophillips.com

DISTRICT I:  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II:  
1301 West Grand Avenue, Artesia, N.M. 88210

DISTRICT III:  
1000 N. Franco Rd., Aztec, N.M. 87410

DISTRICT IV:  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

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

2007 MAY 31 PM Form C-102  
Revised October 18, 2006  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

*API Number 30-045-34341		*Pool Code 71629/ 72354	*Pool Name Basin Fruitland Coal/ Fulcher Kutz Pictured Cliffs
*Property Code 7034	*Property Name FROST		*Well Number 5018
*OURED No. 14538	*Operator Name BURLINGTON REBOURCES OIL AND GAS COMPANY LP		*Elevation 6806'

**10 Surface Location**

UL or lot no.	Section	Township	Range	Lot No.	Feet from the	North/South line	Feet from the	East/West line	County
P	25	27-N	10-W	4	1070'	SOUTH	945'	EAST	SAN JUAN

**11 Bottom Hole Location if Different From Surface**

UL or lot no.	Section	Township	Range	Lot No.	Feet from the	North/South line	Feet from the	East/West line	County
*Dedicated Acres 302.16 FTC E/2 150.66 PC SE/4					*Joint or Infill		*Consolidation Code		*Order No.

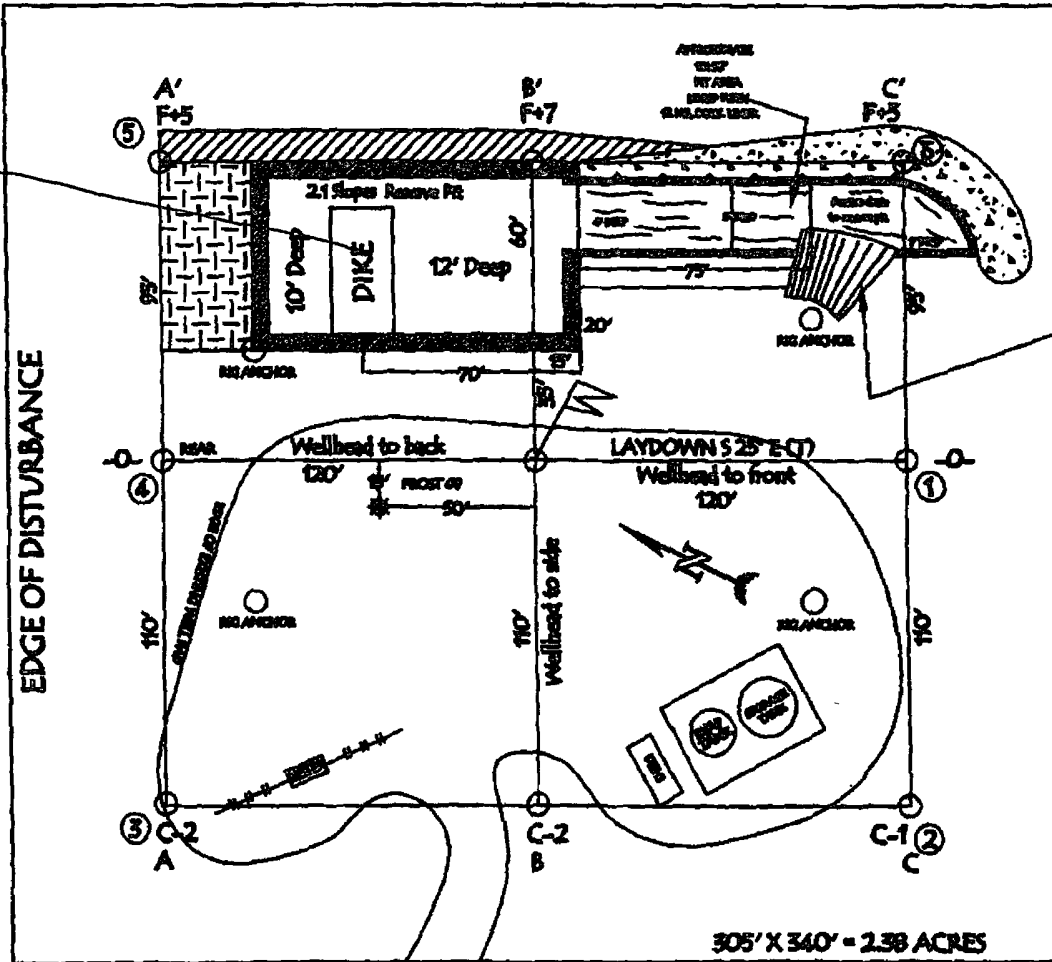
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

				<b>17 OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this certification either was a working interest or a non-working interest in the land including the proposed bottom hole location or has a right to drill the well at this location pursuant to a contract with an owner of such a interest or a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  Signature: <u>Juanita Farrell</u> Printed Name: <u>Juanita Farrell</u>	
				<b>18 SURVEYOR CERTIFICATION</b> I hereby certify that the well location shown on this plat was plotted from field notes of correct survey made by me or under my supervision, and that the same is true and correct to the best of my belief.  Date of Survey: <u>12-14-06</u> Signature: <u>[Signature]</u> Printed Name: <u>QUEEN, M. J.</u> License Number: <u>15703</u> Certificate Number: <u>15703</u>	

**BURLINGTON RESOURCES OIL & GAS COMPANY LP**  
**FROST 501S, 1070' FSL & 945' FEL**  
**SECTION 25, T-27-N, R-10-W, NMPM, SAN JUAN COUNTY, NM**  
**GROUND ELEVATION: 6508', DATE: NOVEMBER 21, 2006**

Pit location  
36.54217°N  
107.84172°W  
NAD 83

RESERVE PIT DUG TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).



**LEAD INTO THE  
CONCRETE  
FROM INSIDE  
—ATTACH  
TO PLASTER**

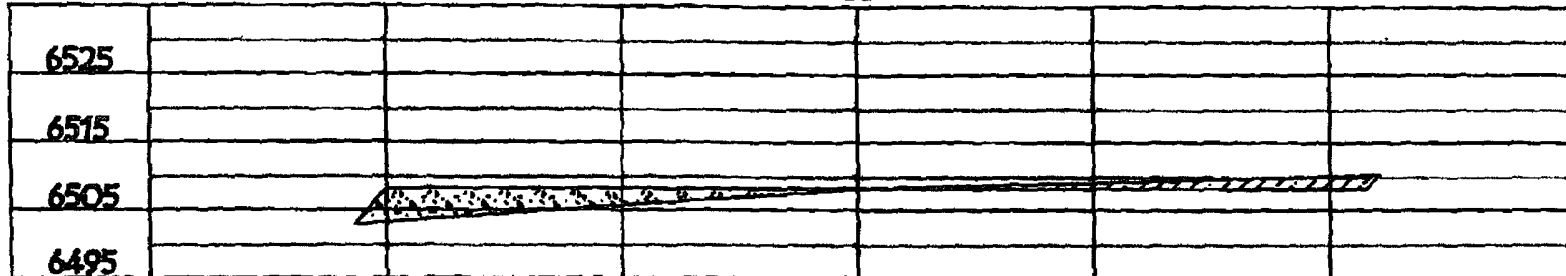
**NOTE: VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.  
CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED  
PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.**

LATITUDE: 36° 32.5127'N LONGITUDE: 107° 50.4692'W NAD27

**BURLINGTON RESOURCES OIL & GAS COMPANY LP**  
**FROST 501S, 1070' FSL & 945' FEL**  
**SECTION 25, T-27- N, R-10-W, NMPM, SAN JUAN COUNTY, NM**  
**GROUND ELEVATION: 6508', DATE: NOVEMBER 21, 2006**

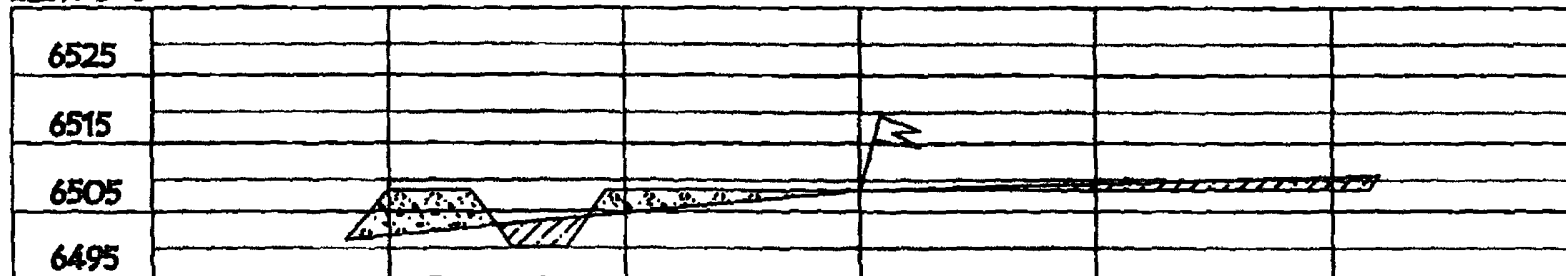
**ELEV. A'-A**

**CL**



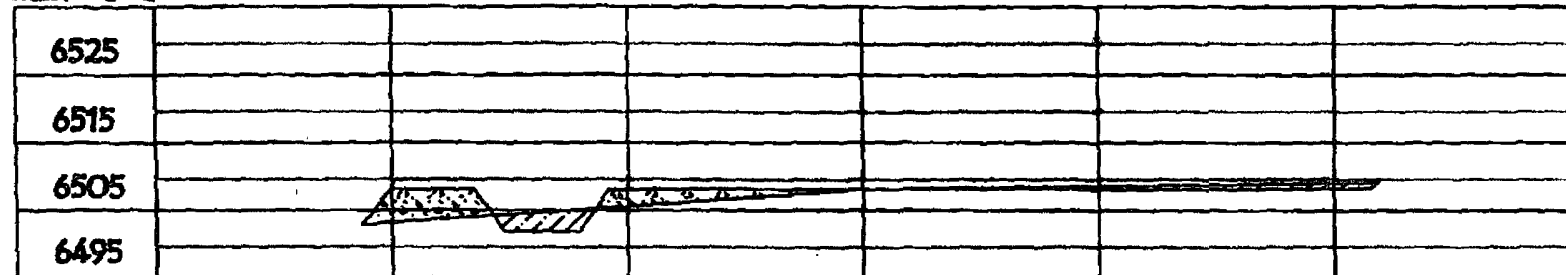
**ELEV. B'-B**

**CL**

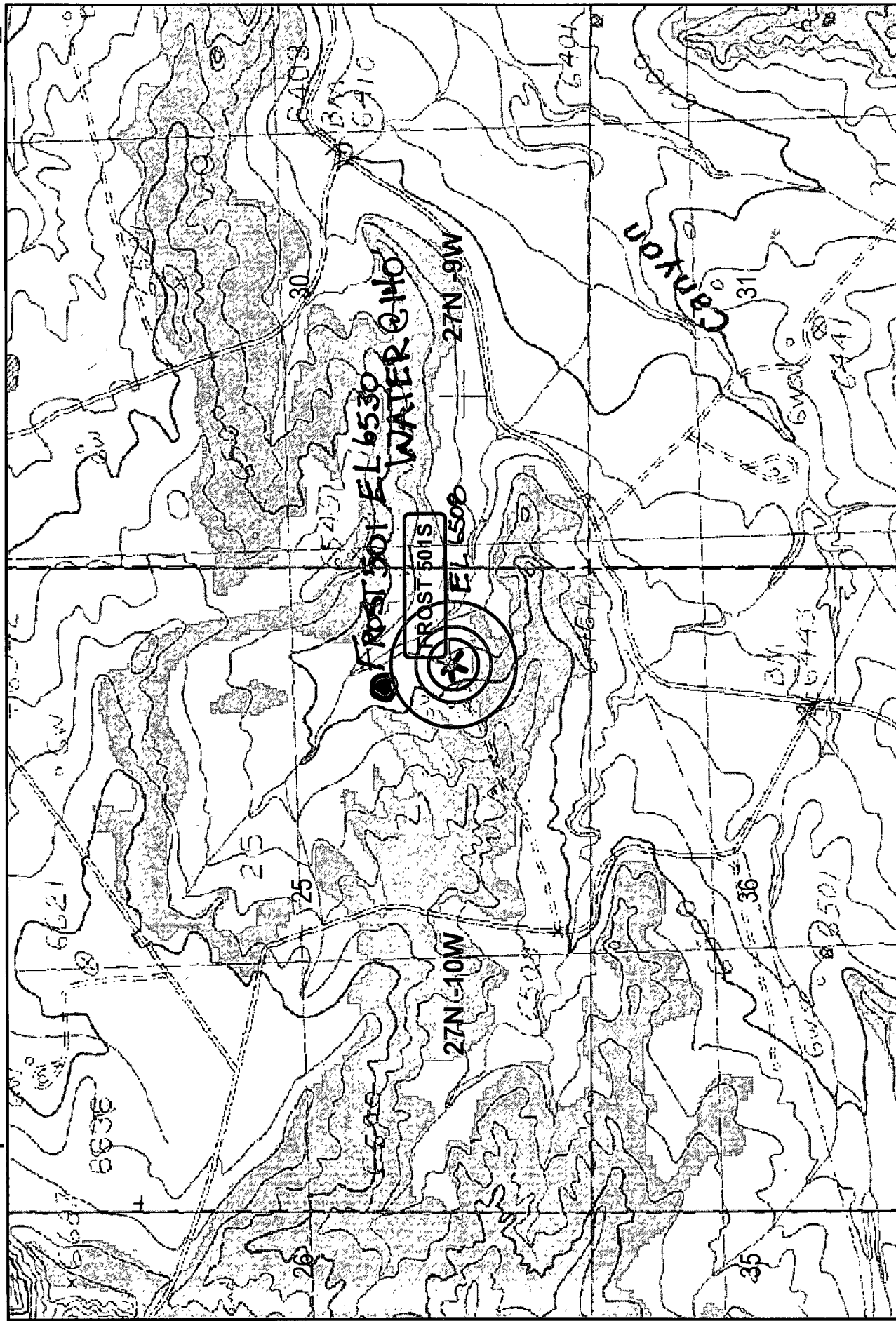


**ELEV. C'-C**

**CL**



**NOTE: VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.**  
**CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED**  
**PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.**



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

Form approved.  
Budget Bureau No. 1004-0137  
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL. OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> Other <u>010 FARMINGTON, N.M.</u>		5. LEASE DESIGNATION AND SERIAL NO. NM-03198																			
b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESER. <input type="checkbox"/> Other _____		8. IF INDIAN, ALLOTTEE OR TRIBE NAME																			
2. NAME OF OPERATOR Meridian Oil Inc.		7. UNIT AGREEMENT NAME																			
3. ADDRESS OF OPERATOR PO Box 4289, Farmington, NM 87499		9. FARM OR LEASE NAME Frost																			
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1145'N, 1565'E At top prod. interval reported below At total depth		10. FIELD AND POOL, OR WILDCAT Basin Fruitland Coal																			
14. PERMIT NO. 30-045-28216		11. SEC. T. R. M., OR BLOCK AND SURVEY OR AREA Sec. 25, T-27-N, R-10-W NMPM																			
15. DATE SPUNDED 11-28-90		12. COUNTY OR PARISH San Juan																			
16. DATE T.D. REACHED 11-30-90		13. STATE NM																			
17. DATE COMPL. (Ready to prod.) 12-20-90		19. ELEV. CASINGHEAD 6530'																			
18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* 6530'		20. TOTAL DEPTH, MD & TVD 2433'																			
21. PLUG. BACK T.D., MD & TVD		22. IF MULTIPLE COMPL., HOW MANY*																			
23. INTERVALS DRILLED BY yes		24. ROTARY TOOLS yes																			
25. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* Fruitland Coal (2271-2397')		26. WAS DIRECTIONAL SURVEY MADE no																			
27. TYPE ELECTRIC AND OTHER LOGS RUN IES, LDT, CNL-LDT, NGT, ML		28. WAS WELL CORRED no																			
29. CASING RECORD (Report all strings set in well)																					
<table border="1"><thead><tr><th>CASING SIZE</th><th>WEIGHT, LB./FT.</th><th>DEPTH SET (MD)</th><th>HOLE SIZE</th><th>CEMENTING RECORD</th><th>AMOUNT PULLED</th></tr></thead><tbody><tr><td>8 5/8"</td><td>24.0#</td><td>227'</td><td>12 1/4"</td><td>248 cu.ft.</td><td></td></tr><tr><td>5 1/2" 4 1/2"</td><td>15.5# 10.5</td><td>2433'</td><td>7 7/8"</td><td>1123 cu.ft.</td><td></td></tr></tbody></table>				CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED	8 5/8"	24.0#	227'	12 1/4"	248 cu.ft.		5 1/2" 4 1/2"	15.5# 10.5	2433'	7 7/8"	1123 cu.ft.	
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30. LINER RECORD																					
<table border="1"><thead><tr><th>SIZE</th><th>TOP (MD)</th><th>BOTTOM (MD)</th><th>SACKS CEMENT*</th><th>SCREEN (MD)</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>				SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)													
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)																	
31. TUBING RECORD																					
<table border="1"><thead><tr><th>SIZE</th><th>DEPTH SET (MD)</th><th>PACKER SET (MD)</th></tr></thead><tbody><tr><td>2 3/8"</td><td>2355'</td><td>ECP @ 2088'</td></tr></tbody></table>				SIZE	DEPTH SET (MD)	PACKER SET (MD)	2 3/8"	2355'	ECP @ 2088'												
SIZE	DEPTH SET (MD)	PACKER SET (MD)																			
2 3/8"	2355'	ECP @ 2088'																			
32. PERFORATION RECORD (Interval, size and number)																					
2271-75', 2278-86', 2288-89', 2295-97', 2300-03', 2318-20', 2348-50', 2366-77', 2388-97'																					
33. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.																					
<table border="1"><thead><tr><th>DEPTH INTERVAL (MD)</th><th>AMOUNT AND KIND OF MATERIAL USED</th></tr></thead><tbody><tr><td>2271-2397'</td><td>40,000# 40/70 sand</td></tr><tr><td>2 to 115'</td><td>156,260# 20/40 sand</td></tr><tr><td>812'</td><td>167,689 gal. fluid</td></tr></tbody></table>				DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED	2271-2397'	40,000# 40/70 sand	2 to 115'	156,260# 20/40 sand	812'	167,689 gal. fluid										
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2271-2397'	40,000# 40/70 sand																				
2 to 115'	156,260# 20/40 sand																				
812'	167,689 gal. fluid																				
34. PRODUCTION																					
DATE FIRST PRODUCTION shut in, waiting on pipeline; capable of commercial hydrocarbon production																					
PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) 300 MCF - pitot gge																					
WELL STATUS (Producing or shut-in)																					
DATE OF TEST SI 326																					
HOURS TESTED SI 326																					
CHOKE SIZE BHP @ 2350' 348																					
PROD'N. FOR TEST PERIOD to be sold																					
OIL—BBL. GAS—MCF. WATER—BBL. GAS-OIL RATIO																					
FLOW, TUBING PRESS. SI 326																					
CASING PRESSURE SI 326																					
CALCULATED 24-HOUR RATE BHP @ 2350' 348																					
OIL—BBL. GAS—MCF. WATER—BBL. OIL GRAVITY-API (CORR.)																					
35. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) to be sold																					
36. LIST OF ATTACHMENTS none																					
37. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records																					
SIGNED <u>Paul D. Braswell</u> TITLE <u>Regulatory Affairs</u> BY <u>MA</u> DATE <u>1-9-91</u>																					

\*(See Instructions and Spaces for Additional Data on Reverse Side)

# WELL CASING CATHODIC PROTECTION CONSTRUCTION REPORT DAILY LOG

 FF 337  
 Drilling Log (Attach Hereto) ☐ SW 353
Completion Date 12/5/91

CPS # <u>2265W</u>	Well Name, Line or Plant: <u>5403A</u>	Work Order # <u>M685</u>	Static <u>#501 - .68 500' N</u>	Ins Union Check <input type="checkbox"/> Good <input checked="" type="checkbox"/> Bad
	<u>Frost #501 + #4 - 508 99A</u>		<u>#4 - .63 500' N</u>	
Location <u>B-25-27-10</u>	Anode Size <u>2" x 60"</u>	Anode Type <u>ANOTEC</u>	Size Bit <u>7 7/8"</u>	
Depth Drilled <u>420'</u>	Depth Logged <u>420'</u>	Drilling Rig Time	Total Lbs. Coke Used <u>6100#</u>	Lost Circulation Mat'l Used
No. Sacks Mud Used				
Anode Depth				
# 1 <u>380</u>	# 2 <u>360</u>	# 3 <u>350</u>	# 4 <u>340</u>	# 5 <u>330</u>
# 6 <u>320</u>	# 7 <u>310</u>	# 8 <u>300</u>	# 9 <u>290</u>	# 10 <u>280</u>
Anode Output (Amps)				
# 1 <u>3.1</u>	# 2 <u>5.6</u>	# 3 <u>5.2</u>	# 4 <u>4.8</u>	# 5 <u>4.1</u>
# 6 <u>4.1</u>	# 7 <u>4.3</u>	# 8 <u>6.1</u>	# 9 <u>6.0</u>	# 10 <u>4.5</u>
Anode Depth				
# 11 <u>270</u>	# 12 <u>260</u>	# 13	# 14	# 15
# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)				
# 11 <u>3.6</u>	# 12 <u>3.2</u>	# 13	# 14	# 15
# 16	# 17	# 18	# 19	# 20
Total Circuit Resistance				
Volts <u>12.2</u>	Amps <u>19.4</u>	Ohms <u>.63</u>	No. 8 C.P. Cable Used	No. 2 C.P. Cable Used

Remarks: SET 100' OF 8" PVC CASING, AND CEMENTED WITH 24 SACKS.  
DRILLER REPORTED WATER AT 140'. WATER SAMPLE WAS  
TAKEN. VENT PIPE WAS INSTALLED, WITH THE BOTTOM  
300' PERFORATED. THE INSULATED UNION ON THE #4 IS GOOD.  
THE INSULATED UNION AT THE WELL HEAD ON THE #501 IS BAD.

 Rectifier Size: \_\_\_\_\_ V \_\_\_\_\_ A  
 Addn'l Depth \_\_\_\_\_  
 Depth Credit: 80'  
 Extra Cable: 244'  
 Ditch & 1 Cable: 622'  
 25' Meter Pole: \_\_\_\_\_  
 20' Meter Pole: \_\_\_\_\_  
 10' Stub Pole: \_\_\_\_\_

TEG CP5120N

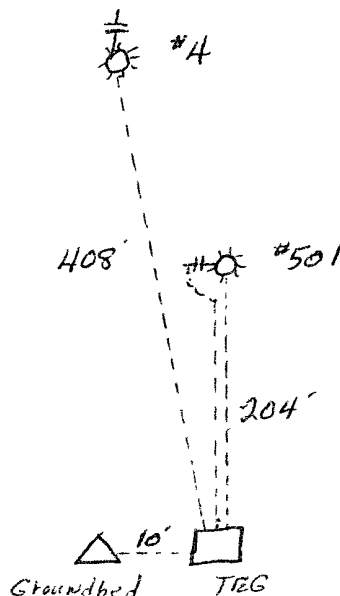
NOTE:

THE SEPARATOR ON THE #501  
 IS 86' NNW, OF WELL HEAD

All Construction Completed

John L. Moore  
 (Signature)

## GROUND BED LAYOUT SKETCH



**CPS GROUND BED CONSTRUCTION WORKSHEET**

CPS#	P/L NAME (S), NUMBER (S)					
2265W	Frost #501 + #4					
WO #	TOTAL	VOLTS	AMPS	- OHMS	DATE	NAME
M685		12.2	194	.63	12/5/91	John L. Moss
REMARKS (notes for construction log)						
Drilled To 420'. Hit Water						
AT 140'. HAS 100' OF 8" PVC CASING, CEMENTED WITH 24 SACKS.						
VENT PIPE WAS INSTALLED WITH THE BOTTOM 300' PERFORATED.						

DEPTH	LOG	ANODE	DEPTH	LOG	ANODE	DEPTH	LOG	ANODE	DEPTH	LOG	ANODE	
	ANODE	*		ANODE	*		ANODE	*		ANODE	*	
100			295	2.2		490			685			
105			300	2.3	8	495			690			
110			305	2.3		500			695			
115			310	2.2	7	505			700			
120			315	2.7		510			ANODE	DEPTH	NO	FULLY
125	1.2		320	3.5	6	515			*		COKE	COK'D
130	1.1		325	3.5		520			1	380	2.4	3.1
135	1.1		330	3.7	5	525			2	360	3.6	5.6
140	1.2		335	3.6		530			3	350	3.5	5.2
145	1.4		340	3.1	4	535			4	340	2.9	4.8
150	1.8		345	2.3		540			5	330	2.4	4.1
155	2.8		350	2.3	3	545			6	320	2.2	4.1
160	2.9		355	3.4		550			7	310	2.5	4.3
165	2.2		360	3.2	2	555			8	300	3.9	6.1
170	1.6		365	2.2		560			9	290	3.5	6.0
175	1.0		370	2.0		565			10	280	2.6	4.5
180	1.0		375	1.6		570			11	270	2.7	3.6
185	1.1		380	2.3	1	575			12	260	2.0	3.2
190	1.9		385	1.4		580			13			
195	2.7		390	1.5		585			14			
200	2.6		395	1.7		590			15			
205	2.0		400	1.2		595			16			
210	1.5		405	1.1		600			17			
215	1.5		410	1.1		605			18			
220	1.8		415	1.3		610			19			
225	1.8		420			615			20			
230	1.4		425			620			21			
235	1.2		430			625			22			
240	1.5		435			630			23			
245	1.9		440			635			24			
250	2.4		445			640			25			
255	2.8		450			645			26			
260	2.3	12	455			650			27			
265	4.0		460			655			28			
270	3.6	11	465			660			29			
275	4.0		470			665			30			
280	3.1	10	475			670						
285	2.6		480			675						
290	2.2	9	485			680						

DISTRIBUTION - original - permanent CPS FILE  
 copy - Division Corrosion Supervisor  
 copy - Region Corrosion Specialist

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS  
NORTHWESTERN NEW MEXICO

Operator Meridian Location: Unit B Sec. 25 Twp 27 Rng 10

Name of Well/Wells or Pipeline Serviced Frost #501 + #4

Elevation \_\_\_\_\_ Completion Date 12/5/91 Total Depth 420' Land Type F

Casing Strings, Sizes, Types & Depths 100' of 8" PVC CASING

If Casing Strings are cemented, show amounts & types used 24 SACKS

If Cement or Bentonite Plugs have been placed, show depths & amounts used

NONE

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. FRESH WATER WAS ENCOUNTERED AT 140'

Depths gas encountered: NONE

Ground bed depth with type & amount of coke breeze used: Drilled To 420'

Used 26 SACKS OF Lotesco AND 70 SACKS OF Asbury (6100#)

Depths anodes placed: 380', 360', 350', 340', 330', 320', 310', 300', 290', 280', 270' + 260'

Depths vent pipes placed: SURFACE TO 420'

Vent pipe perforations: BOTTOM 300'

Remarks: \_\_\_\_\_

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.  
If Federal or Indian, add Lease Number.

**Burlington Resources Oil & Gas Company, LP**  
**San Juan Basin**  
**Pit Design and Construction Plan**

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

**General Plan:**

1. BR will design and construct a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
2. Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.
3. BR will post a well sign, not less than 12" by 24", on the well site prior to construction of the temporary pit. The sign will list the operator on record as the operator; the location of the well site by unit letter, section, township range; and emergency telephone numbers.
4. BR shall construct all new fences utilizing 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.
5. BR shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure.
6. BR shall construct the pit so that the slopes are no steeper than two horizontal feet to 1 vertical foot.
7. Pit walls will be walked down by a crawler type tractor following construction
8. All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.
9. Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided.
10. All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep.
11. BR will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used whenever possible. BR will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. BR will minimize the number of field seams in corners and irregularly shaped areas.
12. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
13. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
14. The volume of the pit shall not exceed 10 acre-feet, including freeboard.
15. Temporary blow pits will be constructed to allow gravity flow to discharge into lined drill pit.
16. The lower half of the blow pit (nearest lined pit) will be lined with the same 20 mil liner. The upper half of the blow pit will remain unlined as allowed in Rule 19.15.17.11 F.11.
17. BR will not allow freestanding liquids to remain on the unlined portion of a temporary blow pit.

**Burlington Resources Oil & Gas Company, LP**  
**San Juan Basin**  
**Maintenance and Operating Plan**

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

**General Plan:**

1. BR will operate and maintain a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
2. BR will conserve drilling fluids by transferring liquids to pits ahead of the rigs whenever possible. All other drilling fluids will be disposed at Basin Disposal Inc., permit # NM-01-005.
3. BR will not discharge or store any hazardous waste in any temporary pit.
4. If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then BR shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner.
5. If a leak develops below the liquid's level, BR shall remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner. BR shall notify the Aztec Division office by phone or email within 48 hours of the discovery for leaks less than 25 barrels BR shall notify the Aztec Division office 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.
6. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
7. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
8. BR shall immediately remove any visible layer of oil from the surface of the temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from the pit's surface. An oil absorbent boom will stored on-site until closure of pit.
9. Only fluids generated during the drilling or workover process may be discharged into a temporary pit.
10. BR will maintain the temporary pit free of miscellaneous solid waste or debris.
11. During drilling or workover operations, BR will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspections will be logged in the IADC reports. BR will file this log with the Aztec Division office upon closure of the pit.
12. After drilling or workover operations, BR will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at BR's office electronically and will be filed with the Aztec Division office upon closure of the pit.
13. BR shall maintain at least two feet of freeboard for a temporary pit.
14. BR shall remove all free liquids from a temporary pit within 30 days from the date the operator releases the drilling rig.
15. BR shall remove all free liquids from a cavitation pit within 48 hours after completing cavitation. BR may request additional time to remove liquids from the Aztec Division office if it is not feasible to remove liquids within 48 hours.

# **Burlington Resources Oil & Gas Company, LP**

## **San Juan Basin**

### **Closure Plan**

In accordance with Rule 19.15.17.12 NMAC the following information describes the closure requirements of temporary pits on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

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 pit closure. Closure report will be filed on C-144 and incorporate the following:

- Details on Capping and Covering, where applicable.
- Plot Plan (Pit Diagram)
- Inspection Reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk

#### **General Plan:**

1. All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves.
2. The preferred method of closure for all temporary pits will be on-site burial, assuming that all the criteria listed in sub-section (B) of 19.15.17.13 are met.
3. The surface owner shall be notified of BR's closing of the temporary pit as per the approved closure plan using certified mail, return receipt requested.
4. Within 6 months of the Rig Off status occurring BR will ensure that temporary pits are closed, re-contoured, and reseeded.
5. Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure 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.
6. Liner of temporary pit shall be removed above "mud level" after stabilization. Removal of liner will consist of manually or mechanically cutting liner at mud level and removing all remaining liner. Care will be taken to remove "All" of the liner i.e., edges of liner entrenched or buried. All excessive liner will be disposed of at a licensed disposal facility.
7. Pit contents shall be mixed with non-waste containing, earthen material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed a safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents.
8. A five point composite sample will be taken of the pit using sampling tools and all samples tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul.

<b>Components</b>	<b>Tests Method</b>	<b>Limit (mg/Kg)</b>
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	1000/500

9. Upon completion of solidification and testing standards being passed, the pit area will be backfilled with compacted, non-waste containing, earthen material. 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. If standard testing fails BR will dig and haul all contents pursuant to 19.15.17.13.i.a. After doing such, confirmation sampling will be conducted to ensure a release has not occurred.
10. During the stabilization process if the liner is ripped by equipment the Aztec OCD office will be notified within 48 hours and the liner will be repaired if possible. If the liner can not be repaired then all contents will be excavated and removed.
11. Dig and Haul Material will be transported to the Envirotech Land Farm located 16 miles south of Bloomfield on Angel Peak Road, CR 7175. Permit # NM010011
12. 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.
13. Notification will be sent to OCD when the reclaimed area is seeded.
14. 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 or Forest Service stipulated seed mixes will used on federal 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. Repeat seeding or planting will be continued until successful vegetative growth occurs.

Type	Variety or Cultivator	PLS/A
Western wheatgrass	Arriba	3.0
Indian ricegrass	Paloma or Rimrock	3.0
Slender wheatgrass	San Luis	2.0
Crested wheatgrass	Hy-crest	3.0
Bottlebrush Squirreiltail	Unknown	2.0
Four-wing Saltbrush	Delar	.25

**Species shall be planted in pounds of pure live seed per acre:**

**Present Pure Live Seed (PLS) = Purity X Germination/100**

**Two lots of seed can be compared on the basis of PLS as follows:**

Source No. One (poor quality)	Source No. two (better quality)
Purity 50 percent	Purity 80 percent
Germination 40 percent	Germination 63 percent
Percent PLS 20 percent	Percent PLS 50 percent
<b>5 lb. bulk seed required to make 1 lb. PLS</b>	<b>2 lb. bulk seed required to make 1 lb. PLS</b>

15. The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be flush with the ground to allow access of the active well pad and for safety concerns. The marker will include a threaded collar to be used for future abandonment. The top of the marker will contain a welded steel 12" square plate that indicates the onsite burial of the temporary pit. The plate will be easily removable and a four foot tall riser will be threaded into the top of the collar marker and welded around the base with the operator's information at the time of all wells on the pad are abandoned. The operator's information will include the following: Operator Name, Lease Name, Well Name and number, Unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location.

**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:

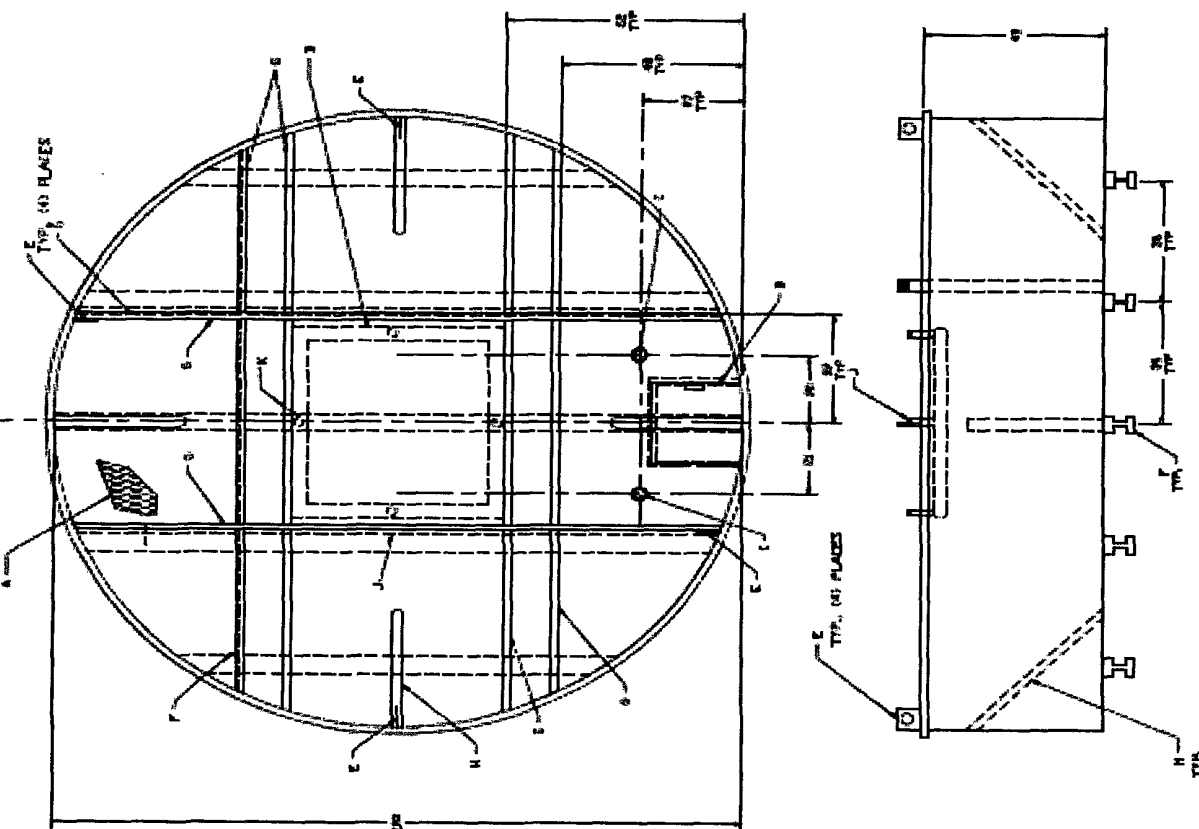
1. BR will design and construct a BGT to contain liquids and to prevent contamination of fresh water and protect public health and environment.
2. BR will use the general location sign posted on location. If no general sign is posted a separate sign at the location of the BGT will be provided.
3. BR shall construct 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.
4. BR will construct a 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.
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.
7. BR shall construct a below-grade tank to prevent overflow and the collection of surface water run-on.
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 shall equip below-grade tanks designed in this manner with a properly operating automatic high-level shut-off control device and manual controls to prevent overflows.
10. The geomembrane liner shall consist of 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner material that the appropriate division district office approves. The geomembrane liner shall have a hydraulic conductivity no greater than  $1 \times 10^{-9}$  cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to

ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.

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

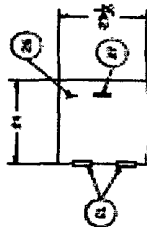
120 BBL PIT TANKS

AUTOCAD DRAWING - ELEMENTS



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**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 Pit (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 prevent contamination of fresh water and protect public health and environment.
2. BR shall not allow a below-grade tank to overflow or allow surface water run-on to enter the below-grade tank.
3. BR shall continuously 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.
4. BR shall inspect the below-grade tank at least monthly and maintain a written record of each inspection for five years.
5. BR shall maintain adequate freeboard to prevent overtopping of the below-grade tank.

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

In accordance with Rule 19.15.17.12 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 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.
2. BR shall close an existing below-grade tank that does 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 of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC.
3. BR shall close a permitted below-grade tank within 60 days of cessation of the below-grade tank's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on C-144
4. 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.
5. BR shall 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.
6. 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.
7. 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.

8. 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.
9. If contamination is confirmed by field sampling. BR will follow the Guidelines For Remediation Of Leaks, Spills, and Releases NMOCD August 1993 when remediating contaminants identified
10. 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.
11. Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure 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.
12. 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:
  - Details on Capping and Covering, where applicable.
  - Inspection Reports
  - Sampling Results
13. 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.
14. 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 or Forest Service stipulated seed mixes will used on federal 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. Repeat seeding or planting will be continued until successful vegetative growth occurs.

15. 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.
16. The surface owner shall be notified of BR's closing of the below-grade tank as per the approved closure plan using certified mail, return receipt requested.