

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: Burlington Resources Oil & Gas Company, LP OGRID#: 14538
Address: PO Box 4289, Farmington, NM 87499
Facility or well name: Howell A #1B
API Number: 30-045-34737 OCD Permit Number: _____
U/L or Qtr/Qtr: J(NWSE) Section: 8 Township: 30N Range: 8W County: San Juan
Center of Proposed Design: Latitude: 36.823183' N Longitude: 107.696352' W NAD: ☐ 1927 ☒ 1983
Surface Owner: ☒ Federal ☐ State ☐ 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 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other _____

☒ String-Reinforced

Liner Seams: ☒ Welded ☒ Factory ☐ Other _____ Volume: 7000 bbl Dimensions L 120' x W 55' x D 12'

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 _____

7181320212223

4 ☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC

Volume: 120 bbl Type of fluid: Produced Water

Tank Construction material: Metal

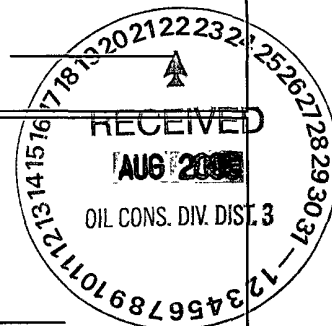
☐ Secondary containment with leak detection ☒ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off

☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other

Liner Type: Thickness 30 mil ☒ HDPE ☐ PVC ☐ Other

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	<p>Fencing: Subsection D of 19.15.17.11 NMAC (<i>Applies to permanent pit, temporary pits, and below-grade tanks</i>)</p> <p><input type="checkbox"/> Chain link, six feet in height, two strands of barbed wire at top (<i>Required if located within 1000 feet of a permanent residence, school, hospital, institution or church</i>)</p> <p><input type="checkbox"/> Four foot height, four strands of barbed wire evenly spaced between one and four feet</p> <p><input checked="" type="checkbox"/> Alternate Please specify <u>Please see Design Plan</u></p>																				
7	<p>Netting: Subsection E of 19.15.17.11 NMAC (<i>Applies to permanent pits and permanent open top tanks</i>)</p> <p><input checked="" type="checkbox"/> Screen <input type="checkbox"/> Netting <input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> Monthly inspections (<i>If netting or screening is not physically feasible</i>)</p>																				
8	<p>Signs: Subsection C of 19.15.17.11 NMAC</p> <p><input type="checkbox"/> 12" X 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers</p> <p><input checked="" type="checkbox"/> Signed in compliance with 19.15.3.103 NMAC</p>																				
9	<p>Administrative Approvals and Exceptions:</p> <p>Justifications and/or demonstrations of equivalency are required Please refer to 19.15.17 NMAC for guidance.</p> <p><i>Please check a box if one or more of the following is requested, if not leave blank:</i></p> <p><input type="checkbox"/> Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for consideration of approval.</p> <p><input type="checkbox"/> Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval</p>																				
10	<p>Siting Criteria (regarding permitting): 19.15.17.10 NMAC</p> <p><i>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.</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; vertical-align: top;"> <p>Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.</p> <p>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</p> </td> <td style="width: 20%; text-align: center; vertical-align: top;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </td> </tr> <tr> <td style="vertical-align: top;"> <p>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).</p> <p>- Topographic map; Visual inspection (certification) of the proposed site</p> </td> <td style="text-align: center; vertical-align: top;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </td> </tr> <tr> <td style="vertical-align: top;"> <p>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <p>(<i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i>)</p> <p>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</p> </td> <td style="text-align: center; vertical-align: top;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA </td> </tr> <tr> <td style="vertical-align: top;"> <p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <p>(<i>Applied to permanent pits</i>)</p> <p>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</p> </td> <td style="text-align: center; vertical-align: top;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA </td> </tr> <tr> <td style="vertical-align: top;"> <p>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.</p> <p>- NM Office of the State Engineer - iWATERS database search; 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vertical-align: top;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </td> </tr> <tr> <td style="vertical-align: top;"> <p>Within an unstable area.</p> <p>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map</p> </td> <td style="text-align: center; vertical-align: top;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </td> </tr> <tr> <td style="vertical-align: top;"> <p>Within a 100-year floodplain</p> <p>- FEMA map</p> </td> <td style="text-align: center; vertical-align: top;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </td> </tr> </table>	<p>Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.</p> <p>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>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).</p> <p>- Topographic map; 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Visual inspection (certification) of the proposed site.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>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</p> <p>- Written confirmation or verification from the municipality; Written approval obtained from the municipality</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>Within 500 feet of a wetland.</p> <p>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>Within the area overlying a subsurface mine.</p> <p>- Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>Within an unstable area.</p> <p>- Engineering measures incorporated into the design; 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<p>Within a 100-year floodplain</p> <p>- FEMA map</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No																				

11

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 (I) 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 ☒ 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 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

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

☐ Yes ☒ No

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/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

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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: 8/21/08
 e-mail address: crystal.tafoya@conocoPhillips.com Telephone: 505-826-9837

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

OCD Representative Signature: Brandon Bell **Approval Date:** 8-27-08

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: _____

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 30N Range: 08W Sections: 4,5,6,7,8,9,18,17,16

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

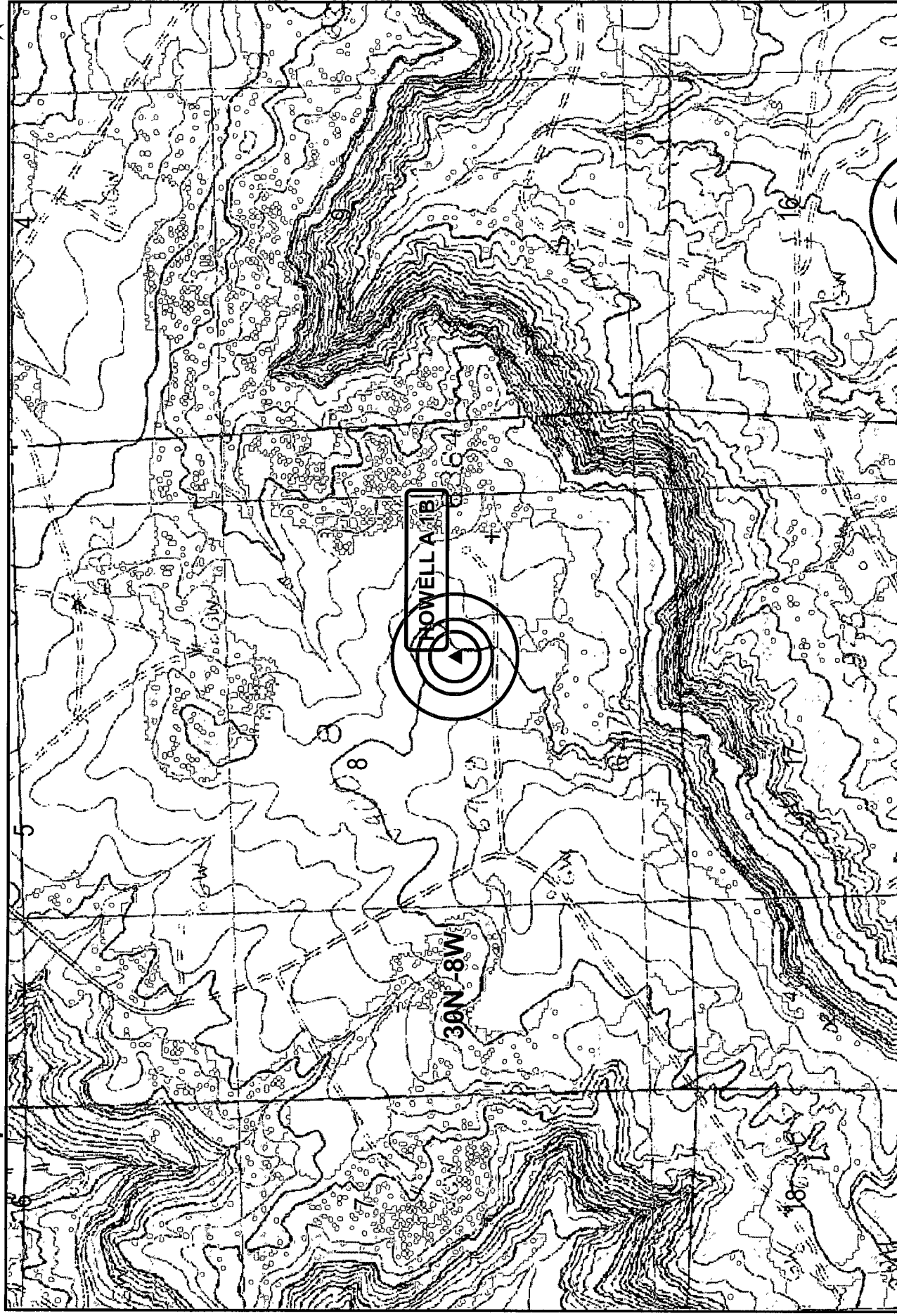
WATER COLUMN REPORT 07/16/2008

(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
SJ 01858	30N	08W	17							25	10	15
SJ 00556	30N	08W	17	4	1	4				20	5	15
SJ 03603	30N	08W	17	4	3	1				18	10	8
SJ 00090	30N	08W	17	4	3	1				23	12	11
SJ 01209	30N	08W	17	4	4					25	14	11
SJ 01307	30N	08W	17	4	4					29	19	10
SJ 02807	30N	08W	17	4	4	1				28	15	13

Record Count: 7



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

Ground Water
 + iWaters
 + COP

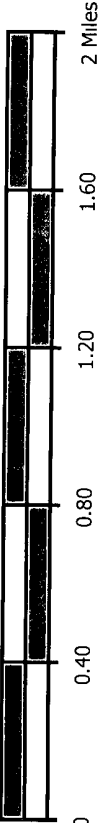
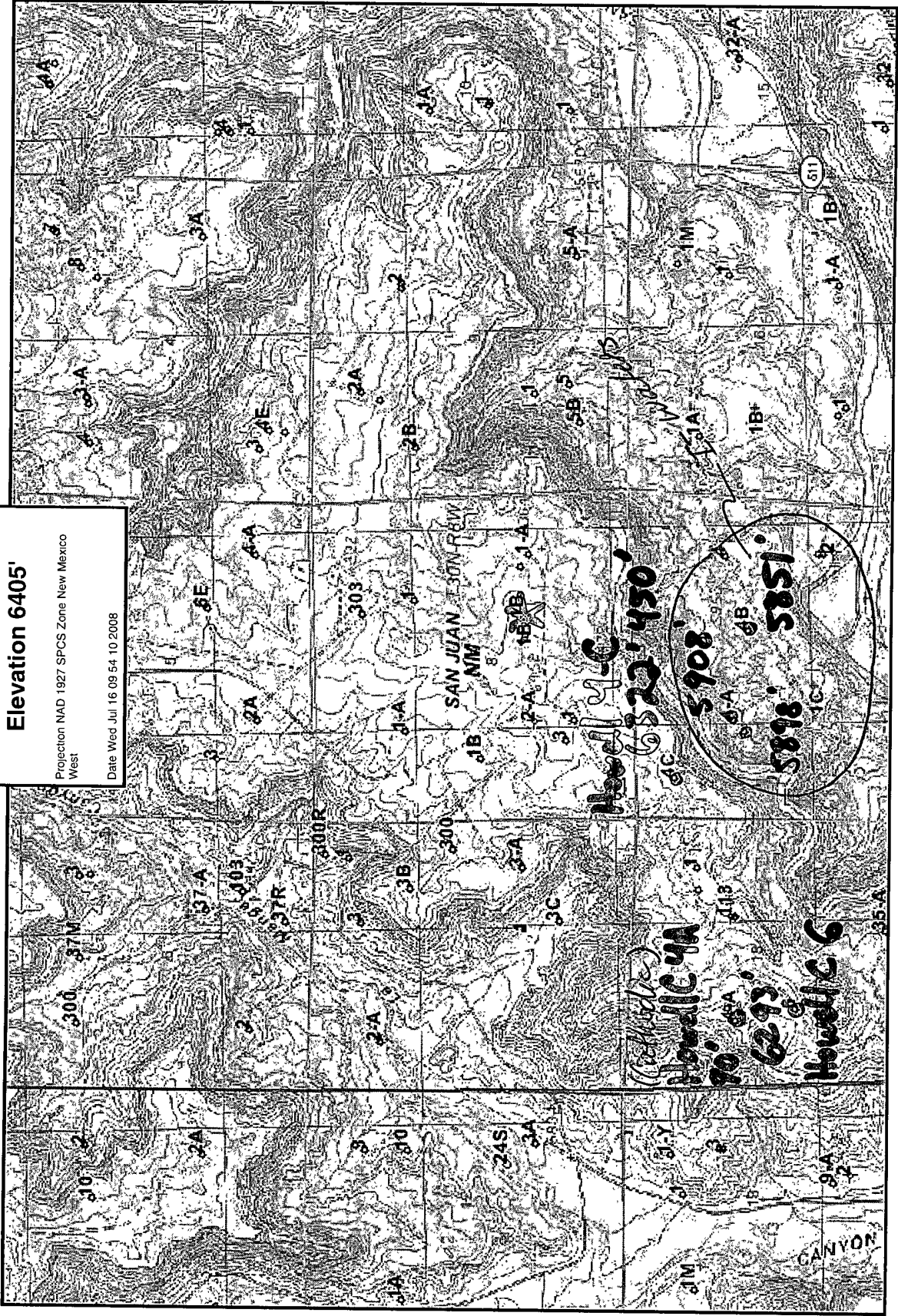
Buffers
 200ft 500ft
 300ft Wetlands

0 800 1,600 Feet
 1:12,000

NAD_1983_StatePlane_ NMWest_FIPS_3003
 7/08

HOWELL A 1B T-30N
R-08W Sec 08 J
Elevation 6405'

Projection NAD 1927 SPCS Zone New Mexico
West
Date Wed Jul 16 09 54 10 2008



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN D-10C

Instructions on
reverse sideForm approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other _____

b. TYPE OF COMPLETION:

NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other _____

2. NAME OF OPERATOR

El Paso Natural Gas Company

3. ADDRESS OF OPERATOR

P.O. Box 289, Farmington, New Mexico 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface 1810'N, 1095'W

At top prod. interval reported below

At total depth

14. PERMIT NO.

DATE ISSUED

5. LEASE DESIGNATION AND SERIAL NO.

SF 078596

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Howell C

9. WELL NO.

4A

10. FIELD AND POOL, OR WILDCAT

Blanco M.V.

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

Sec. 18, T-30-N, R-8-W
N.M.P.M.

12. COUNTY OR PARISH

San Juan

13. STATE

New Mexico

15. DATE SPUDDED

12-16-78

16. DATE T.D. REACHED

12-30-78

17. DATE COMPL. (Ready to prod.)

3-29-79

18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*

6293' GL

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD

5720'

21. PLUG, BACK T.D., MD & TVD

5703'

22. IF MULTIPLE COMPL., HOW MANY*

23. INTERVALS DRILLED BY

ROTARY TOOLS

0-5720'

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*

4576-5668' (MV)

25. WAS DIRECTIONAL SURVEY MADE

No

26. TYPE ELECTRIC AND OTHER LOGS RUN

Ind.-GR; CDL-GR; Temp. Survey

27. WAS WELL CORED

No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8"	36#	336'	13 3/4"	300 cf	
7"	20#	3491'	8 3/4"	376 cf	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
4 1/2"	3327'	5720'	415 cf		2 3/8"	5664'	

31. PERFORATION RECORD (Interval, size and number)

4576, 4654, 4698, 4724, 4790, 4796, 4802, 4808, 4816, 4829, 4848, 4862, 4867, 4873, 4940, 4950, 4955, 4966, 4972, 4978, 4994, 5011' w/1 SPZ. 5084, 5120, 5128, 5134, 5239, 5245, 5284, 5291, 5298, 5305, 5312, 5319, 5326, 5334, 5343, 5350, 5372, 5402, 5414, 5506, 5534, 5553, 5610

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
4576-5011'	72,000# sd; 144,000 gal. wtr.
5084-5668'	81,000# sd; 162,000 gal. wtr.

33.* 5638, 5644, 5650, 5668' w/1 SPZ.

PRODUCTION

DATE FIRST PRODUCTION

PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)

After Frac Gauge - 4533-MCF/D

WELL STATUS (Producing or shut-in)

Shut-in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-29-79							

FLOW TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
SI 282	SI 906					

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

J. P. Guasco

TITLE

Drilling Clerk

U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

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

OPERATOR

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

CONTRACT 2

Drilling Log (Attach Hereto). ☐

Completion Date 10-1-79

Well Name Howell C #4A & #6		Location NW 18-30-8		CPS No. 1378 W						
Type & Size Bit Used 6 3/4"		2" X 60" DUKIRON		Work Order No. 57297.21 + 57379.21						
Anode Hole Depth 410 - 410 TD	Total Drilling Rig Time	Total Lbs. Coke Used 4500	Lost Circulation Mat'l Used	No. Sacks Mud Used						
Anode Depth	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
	375	325	315	305	295	285	275	265	255	245
Anode Output (Amps)	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
	2.0	2.0	2.2	2.0	3.0	2.9	2.9	2.4	3.3	2.2
Anode Depth	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Total Circuit Resistance	Volts 12.0		Amps 10.2		Ohms 1.2		No. 8 C.P. Cable Used		No. 2 C.P. Cable Used	

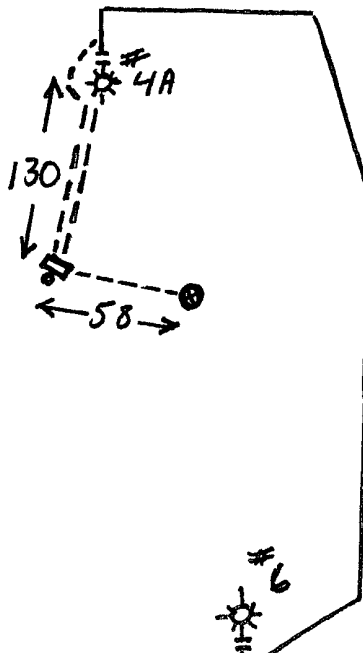
Remarks: ST % #4A = .78 #6 = NONE (CP) Water at 90 FT
Approx. 3 GPM. Drilled 410' Logged 410' INSTALLED
400 FT OF vent pipe with 320 FT OF PERFORATIONS
SLURRIED 45 SACKS OF COKE.

Hole depth = -90
meter pole
40V 16A Rect
Ditch + cable = 188
EXTRA cable = 155

All Construction Completed

Rahad J. Bahar
(Signature)

GROUND BED LAYOUT SKETCH



DISTRIBUTION:

WHITE - Division Corrosion Office
YELLOW - Area Corrosion Office
PINK - Originator File

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

(Submit 3 copies to OCD Aztec Office)

CP-1378W

Operator MERIDIAN OIL Location: Unit NW Sec. 18 Twp 30 Rng 8

Name of Well/Wells or Pipeline Serviced HOWELL C #4A, #6, BAKER (ORRI) #1-12

cps 1378w

Elevation 6328' Completion Date 10/1/79 Total Depth 410' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

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

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 90' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 4500 lbs.

Depths anodes placed: 375', 325', 315', 305', 295', 285', 275', 265', 255', 245'

Depths vent pipes placed: 400'

Vent pipe perforations: 320'

Remarks: gb #1

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.

EL PASO NATURAL GAS COMPANY

WELL COMPLETION LOG

Well Howell 4-C
Name No.Land Office Santa FeLease Number 078596Leasor El Paso Natural Gas Co. Area Blanco County San Juan State New MexicoSec. 18 Twp. 30N Rge. 8W North 933 South East 931 West N.M.P.M.Elevation Gr. 6322 DF 6 332

CASING RECORD

Date	Size	Depth	Cement
9-29-57	10 3/4"	173'	150
12-5-57	7 5/8"	3348'	250
12-11-57	5 1/2"	3256-5360	

Total Depth 5366'Clean Out Depth 5350'
P.B.

TUBING RECORD

Date	Size	Depth
12-17-57	2"	5301'

PACKER

Date
Type
Depth

FORMATION

TOPS

Ojo Alamo	1832
Kirtland	2021
Fruitland	2740
Pictured Cliffs	3080
Lewis	3168
Cliff House	4781
Menefee	4889
Point Lookout	5263
Mancos	5363
1st Dakota	
2nd Dakota	
Morrison	
Shinarump	
Coconino	
Rico	
Pennsylvanian	
Hermosa	
Paradox	
Molas	
Mississippian	
Devonian	

DRILL STEM TESTS:

From _____ To _____ Time _____ Gage _____ Recovery _____
 From _____ To _____ Time _____ Gage _____ Recovery _____
 From _____ To _____ Time _____ Gage _____ Recovery _____
 From _____ To _____ Time _____ Gage _____ Recovery _____

CORE:

From _____ To _____ Recovery _____
 From _____ To _____
 From _____ To _____

SHOOTING OR ACIDIZING:

From See To _____ Quantity or Type Shot _____ Gage Before _____
 From Remarks To _____ Quantity or Type Shot _____ Gage Before _____

PERFORATIONS:

From 4788 To 4802; From 4806 To 4818; From 4830 To 4840

SURVEYS: 4870-4880; 5262-5276; 5286-5310; 5330-5340

ELECTRIC LOGS ES - 175 - 3348; GRL-3100-5368; IND-3351-5369; ML-175-3347; TS-3500-5372

TEMPERATURE SURVEYS B & R @ 1725'; B & R @ 3415'

INITIAL POTENTIAL: Ch. Volume = 5081 MCF/D

Gage 15,319 MCF/D Hours Tested Three Type Test Calculated A. O. F.
 FPC 896 FPT _____ SIPC 1023 SIPT 1005

SEE BACK FOR REMARKS.

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

(Submit 3 copies to OCD Aztec Office)

CP

Operator MERIDIAN OIL Location: Unit SW Sec. 18 Twp 30 Rng 8

Name of Well/Wells or Pipeline Serviced HOWELL C #4

cps 10w

Elevation 6322' Completion Date 10/29/73 Total Depth 660' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

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

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 450'

Depths gas encountered: N/A

Type & amount of coke breeze used: 7400 lbs.

Depths anodes placed: 606', 600', 594', 588', 582', 576', 570', 550', 544', 538'

Depths vent pipes placed: N/A

Vent pipe perforations: 197'

Remarks: gb #3

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.

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Red Hub file CP
Completion Date 10/29/73

Drilling Log (Attach Hereto). ☐

Well Name Howell C #4		Location SW 18-30N - 8W		CPS No. 10W																																																													
Type & Size Bit Used 6 3/4"				Work Order No. 53210																																																													
Anode Hole Depth 660		Total Drilling Rig Time		Total Lbs. Coke Used 7,400																																																													
		Lost Circulation Mat'l Used		No. Sacks Mud Used																																																													
<table border="1"> <tr> <td colspan="2">Anode Depth</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td># 1 606</td> <td># 2 600</td> <td># 3 594</td> <td># 4 588</td> <td># 5 582</td> <td># 6 576</td> </tr> <tr> <td colspan="2">Anode Output (Amps)</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td># 1 2.1</td> <td># 2 4.0</td> <td># 3 4.0</td> <td># 4 4.4</td> <td># 5 4.3</td> <td># 6 4.0</td> </tr> <tr> <td colspan="2">Anode Depth</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td># 11</td> <td># 12</td> <td># 13</td> <td># 14</td> <td># 15</td> <td># 16</td> </tr> <tr> <td colspan="2">Anode Output (Amps)</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td># 11</td> <td># 12</td> <td># 13</td> <td># 14</td> <td># 15</td> <td># 16</td> </tr> <tr> <td colspan="2">Total Circuit Resistance</td> <td colspan="2"></td> <td colspan="2">No. 8 C.P. Cable Used</td> </tr> <tr> <td>Volts 11.8</td> <td>Amps 9.0</td> <td>Ohms 1.31 Ω</td> <td colspan="2">112'</td> <td>No. 2 C.P. Cable Used</td> </tr> </table>						Anode Depth						# 1 606	# 2 600	# 3 594	# 4 588	# 5 582	# 6 576	Anode Output (Amps)						# 1 2.1	# 2 4.0	# 3 4.0	# 4 4.4	# 5 4.3	# 6 4.0	Anode Depth						# 11	# 12	# 13	# 14	# 15	# 16	Anode Output (Amps)						# 11	# 12	# 13	# 14	# 15	# 16	Total Circuit Resistance				No. 8 C.P. Cable Used		Volts 11.8	Amps 9.0	Ohms 1.31 Ω	112'		No. 2 C.P. Cable Used
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Volts 11.8	Amps 9.0	Ohms 1.31 Ω	112'		No. 2 C.P. Cable Used																																																												

Remarks: Driller said water @ 450' water standing @ 540
VENT HOSE PERFORATED 197' PUMPED 18 SACKS
Slurry 56 SACKS. Void Guarantee NOT ENOUGH LOW
RESISTANCE soil, spaced less than 5'

All Construction Completed

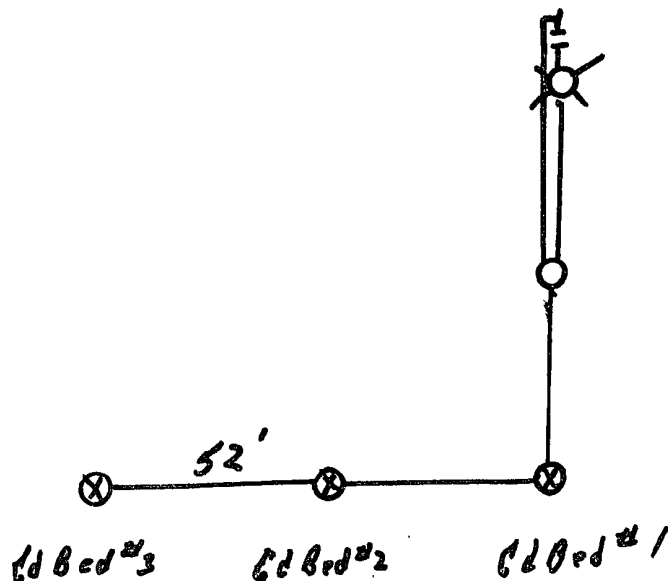
2,230.00
 562.40 COKE
 11.40 CABLE
 640.00 Depth

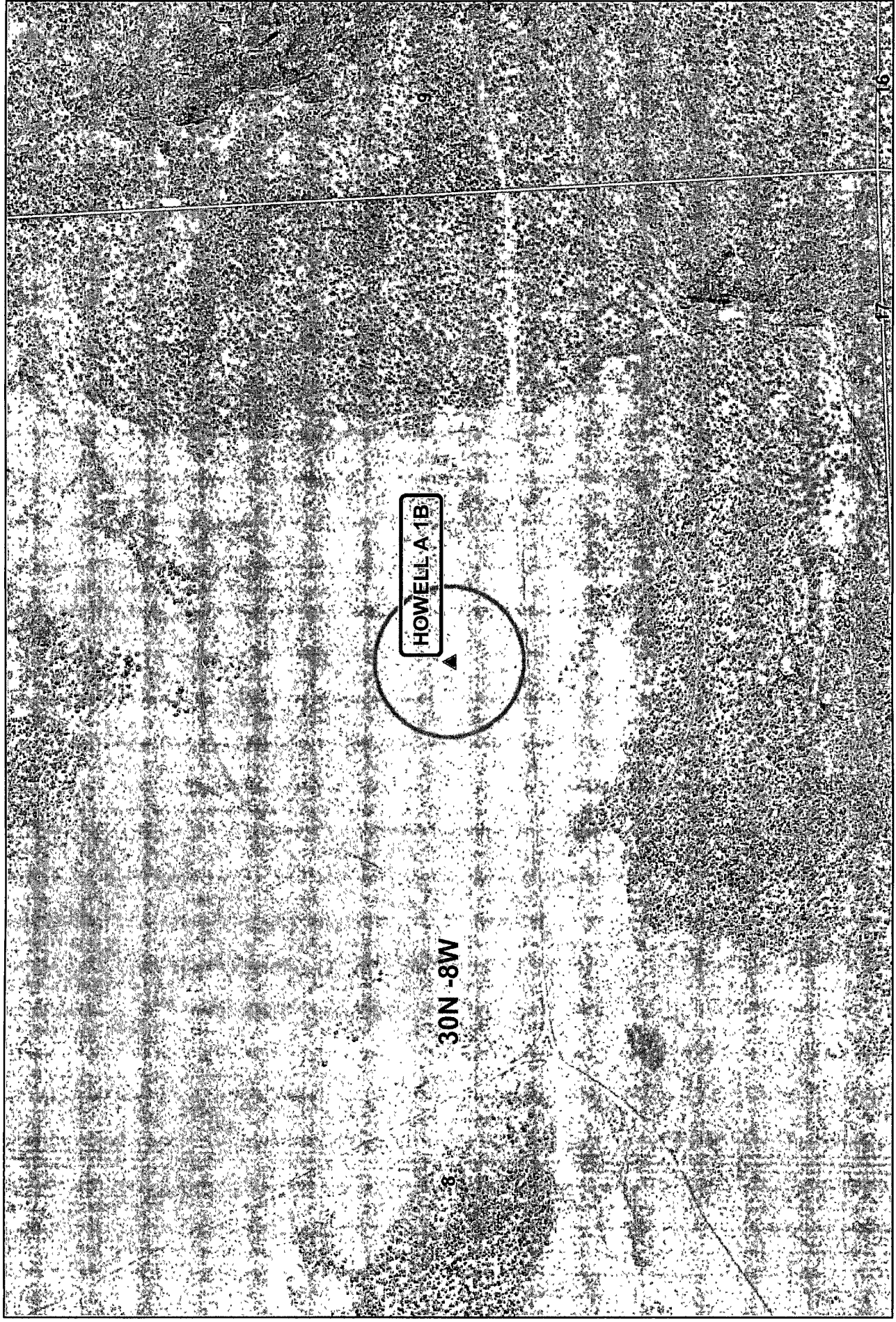
 3,443.80
 137.75 TAX

 3,581.55 TOTAL

Edward R. Paulch
(Signature)

GROUND BED LAYOUT SKETCH





Data Source

Aerial flown locally Sedgewick in 2005.

1000ft 300ft

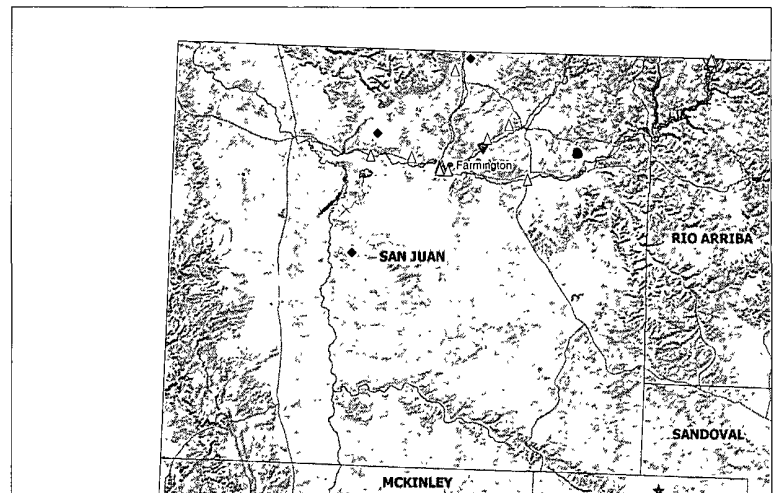
0 500 1,000 Feet
1:6,000

NAD_1983_SP
NM_West_FIPS_3003
7/08

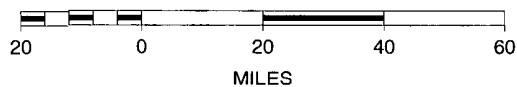
Howell A #1B Mines, Mills and Quarries Web Map

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 : 1,955,552



Siting Criteria Compliance Demonstrations

The Howell A #1B 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 Howell A #1B

Regional Hydrogeological context:

The San Jose Formation of Eocene age occurs in New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central basin. It overlies the Nacimiento Formation in the area generally south of the Colorado-New Mexico State line and overlies the Animas Formation in the area generally north of the State line.

The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and variegated shale. Thickness of the San Jose Formation generally increases from west to east (200 feet in the west and south to almost 2,700 feet in the center of the structural basin).

Ground water is associated with alluvial and fluvial sandstone aquifers. Thus, the occurrence of ground water is mainly controlled by the distribution of sandstone in the formation. The distribution of such sandstone is the result of original depositional extent plus any post-depositional modifications, namely erosion and structural deformation.

Transmissivity data for San Jose Formation are minimal. Values of 40 and 120 feet squared per day were determined from two aquifer tests (Stone et al, 1983, table 5). The reported or measured discharge from 46 water wells completed in San Jose Formation ranges from 0.15 to 61 gallons per minute and the median is 5 gallons per minute. Most of the wells provide water for livestock and domestic use.

The San Jose Formation is a very suitable unit for recharge from precipitation because soils that form on the unit are sandy and highly permeable and therefore readily adsorb precipitation. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the San Jose Formation by the San Juan River and its tributaries all tend to reduce the effective recharge to the unit.

Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico: Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

Tafoya, Crystal

From: Tafoya, Crystal
Sent: Wednesday, August 20, 2008 2:25 PM
To: 'mark_kelly@nm.blm.gov'
Subject: Surface Owner Notification

The following well locations temporary pit will be closed on-site. Please feel free to contact me at any time if you have any questions.

Howell A #1B
Huerfano Unit #556
Lackey #100S
Morris A #11R
Heaton Com LS 8 #100

Thanks & Have a great day,

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, NM 88240
District II
1301 W Grand Avenue, 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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505
Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 7 Copies
Fee Lease - 3 Copies
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-34737		² Pool Code 72319		³ Pool Name BLANCO MESAVERDE	
⁴ Property Code 7119		⁵ Property Name HOWELL A			⁶ Well Number 1B
⁷ OGRID No. 14538		⁸ Operator Name BURLINGTON RESOURCES OIL AND GAS COMPANY LP			⁹ Elevation 6405

¹⁰ SURFACE LOCATION

UL or lot no. J	Section 8	Township 30-N	Range 8-W	Lot Idn	Feet from the 1770	North/South line SOUTH	Feet from the 2020	East/West line EAST	County SAN JUAN
--------------------	--------------	------------------	--------------	---------	-----------------------	---------------------------	-----------------------	------------------------	--------------------

¹¹ Bottom Hole Location If Different From Surface

UL or lot no. J	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
--------------------	---------	----------	-------	---------	---------------	------------------	---------------	----------------	--------

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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

¹⁶				¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or in a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Crystal Walker</i> 3/10/08 Signature Crystal Walker Printed Name Regulatory Technician Title and E-mail Address March 10th, 2008 Date	
				¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey: 1/21/08 Signature and Seal of Professional Surveyor: 	

PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

BURLINGTON RESOURCES OIL AND GAS COMPANY LP

HOWELL A 1B

1770' FSL, 2020' FEL

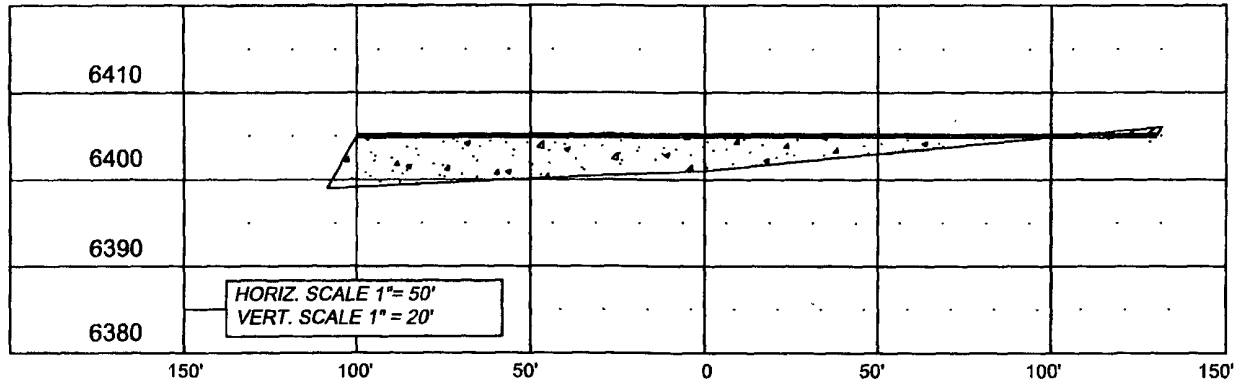
SECTION 8, T-30-N, R-8-W, N.M.P.M.,

SAN JUAN COUNTY, NEW MEXICO

ELEV.: 6405 NAVD88

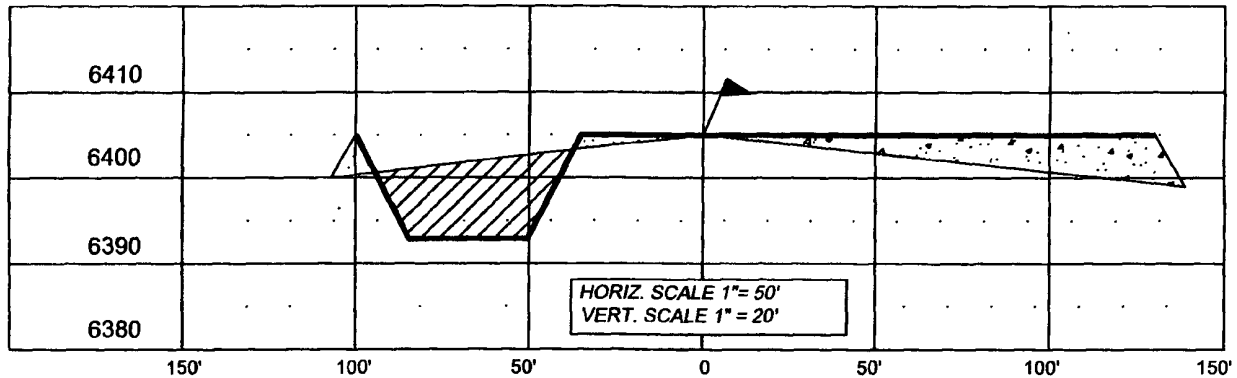
A - A'

C/L



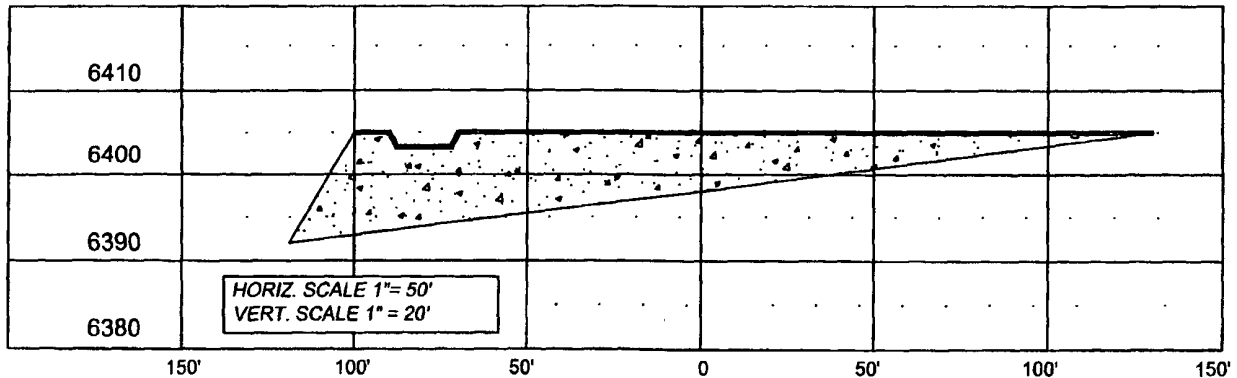
B - B'

C/L



C - C'

C/L



NOTE: CCI 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 PRIOR TO CONSTRUCTION.

REVISIONS

NO.	DESCRIPTION	REVISED BY	DATE
1	ISSUED FOR REVIEW	L.H	11/26/07
2	WELL MOVE	TJR	1/21/08

CCI

P.O BOX 328
BLOOMFIELD, NM, 87413
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CHENAULT CONSULTING INC.

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.

Components	Tests Method	Limit (mg/Kg)
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 Squirreltail	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
5 lb. bulk seed required to make		2 lb. bulk seed required to make	
1 lb. PLS		1 lb. PLS	

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:

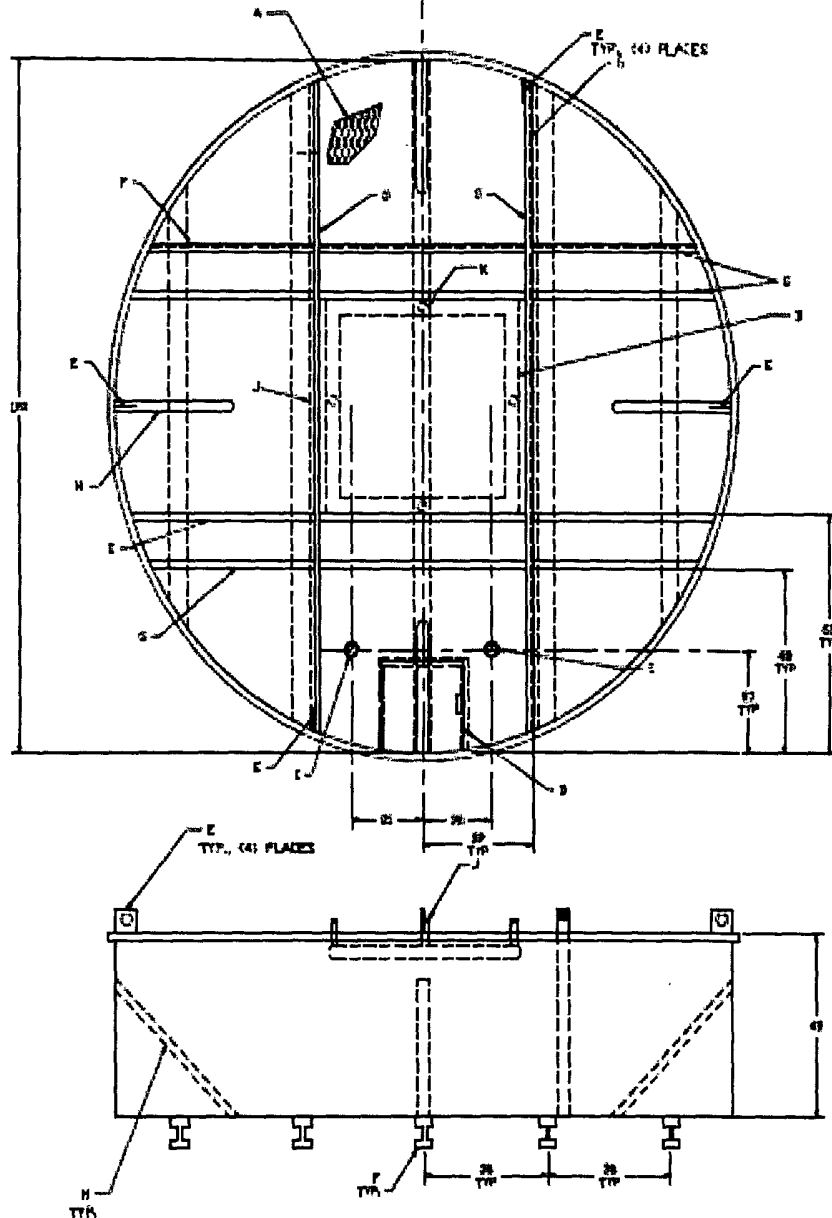
1. BR will design and construct a BGT to contain liquids and to prevent contamination of fresh water and protect public health and environment.
2. BR will use the general location sign posted on location. If no general sign is posted a separate sign at the location of the BGT will be provided.
3. BR 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 1×10^{-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

8/20/2008

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



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.
 - 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.