District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

12.661

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

RECEIVED
FEB 25 2015
NMOCD
DISTRICT III

45-30235

Type of action: X Below grade tank registration
☐ Permit of a pit or proposed alternative method
☐ Closure of a pit, below-grade tank, or proposed alternative method
☐ Modification to an existing permit/or registration
☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, 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: Roddy Production Co., Inc. OGRID #: 36845
Address: P O Box 2221, Farmington, NM 87499-2221
Facility or well name: Owen # 2A
API Number: 30-045-30235 OCD Permit Number:
U/L or Qtr/Qtr A Section 19 Township 31N Range 12W County: San Juan
Center of Proposed Design: Latitude 36.88901 Longitude 108.13130 NAD: ☐1927 X 1983
Surface Owner: X Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☐ no
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____bbl Dimensions: L_____ x W_____ x D_____

3.
X **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: 95 bbl Type of fluid: Produced water
Tank Construction material: Single wall steel
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner X Visible sidewalls only X Other BGT installed prior to 06/16/2008 sidewalls to be cleaned out and tank integrity tested
Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☐ Other _____

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, 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
X Alternate. Please specify Four foot high field fence hung on steel tee posts

23

6.

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

☐ Screen X Netting ☐ Other_____

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

7.

Signs: Subsection C of 19.15.17.11 NMAC

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

X Signed in compliance with 19.15.16.8 NMAC

8.

Variances 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:

X Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

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

9.

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. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. ☐ Yes X No ☐ NA
- X NM Office of the State Engineer - iWATERS database search; ☐ USGS; X Data obtained from nearby wells

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . ☐ Yes ☐ No ☐ NA
NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

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. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- Written confirmation or verification from the municipality; Written approval obtained from the municipality

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

Within an unstable area. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

Within a 100-year floodplain. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- FEMA map

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). ☐ Yes X No
- Topographic map; Visual inspection (certification) of the proposed site

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. ☐ Yes X No
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) ☐ Yes ☐ No
- Topographic map; Visual inspection (certification) of the proposed site

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. ☐ Yes ☐ No
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. ☐ Yes ☐ No
NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
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 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, 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 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.

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

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

X Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC

☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC

X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

X Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC

X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC

X Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit 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.

☐ 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

☐ A List of wells with approved application for permit to drill associated with the pit.

☐ 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

☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

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_2S, 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

13.

Proposed Closure: 19.15.17.13 NMAC

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

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit X Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method: X Waste Excavation and Removal
☐ Waste Removal (Closed-loop systems only)
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
☐ In-place Burial ☐ On-site Trench Burial
☐ Alternative Closure Method

14.

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

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

15.

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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 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 ☐ NA
Ground water is between 25-50 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 ☐ NA
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 ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant 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. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; 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 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

16.
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 E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K 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 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
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): Jeremy Divine Title: Foreman

Signature: Jeremy Divine Date: 2/25/15

e-mail address: jdivine@crownquest.com Telephone: (432)557-6778

18.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: [signature] **Approval Date:** 3/9/15

Title: Environmental Spec. **OCD Permit Number:**

19.
Closure Report (required within 60 days of closure completion): 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:**

20.
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.

21.
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 for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ 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

22.

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: _____

Hydrogeologic Report
Roddy Production Co., Inc.
Owen No. 2A

Regional Hydrology

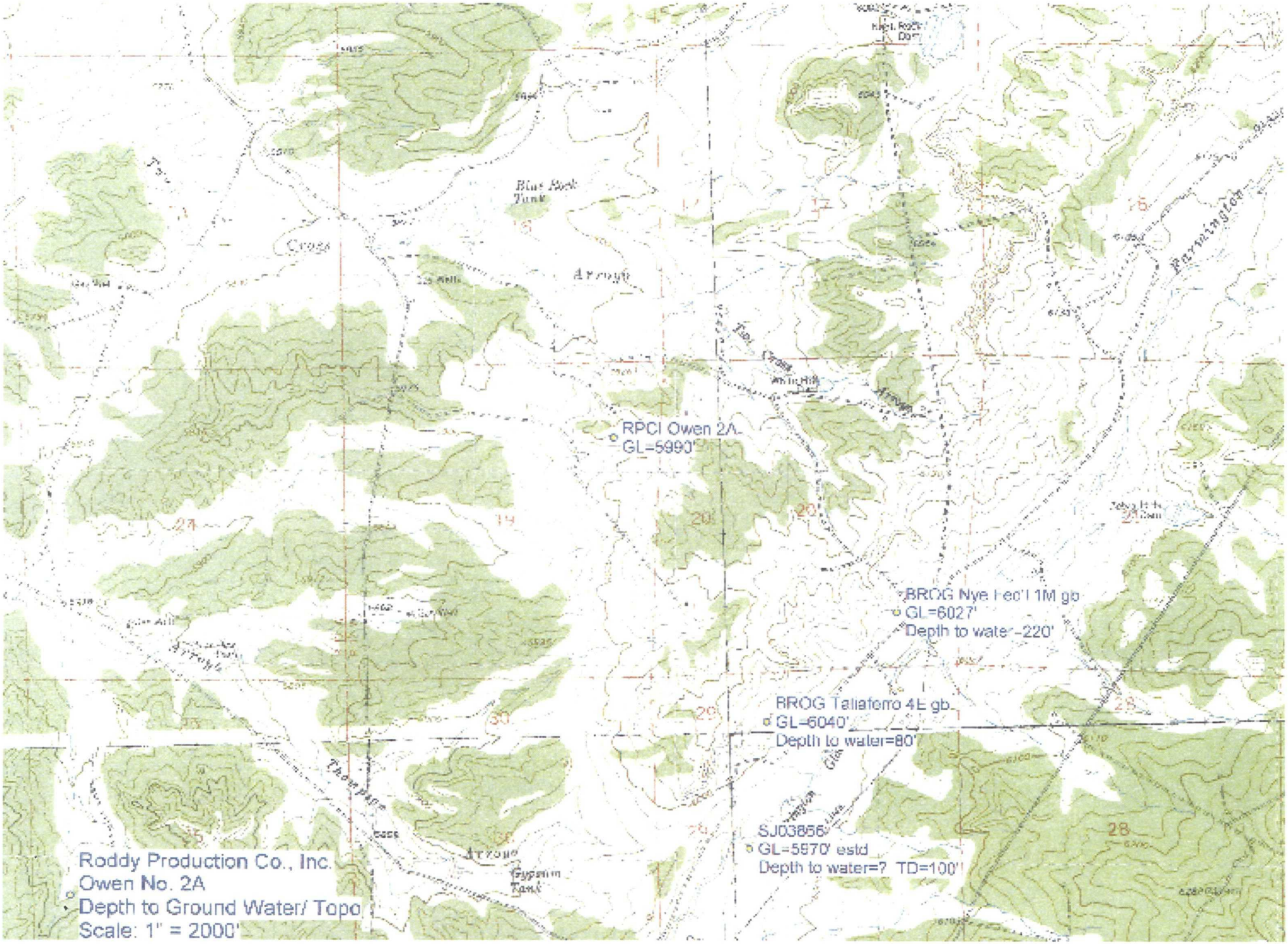
This pit is located on Federal surface within the San Juan Basin a large structural depression covering approximately 30,000 acres in northwest New Mexico and southwestern Colorado. The basin is bounded on the west by the Hogback monocline, on the north by the San Juan Mountains, on the east by the Nacimiento uplift and on the south by the Zuni uplift. The basin contains sediments ranging in age from the Tertiary Eocene to Upper Jurassic with some Quaternary deposits in the major valleys and their tributaries. The Continental Divide cuts across the southwestern part of the basin which divides the basin into the surface water drainage basins of the Colorado River in the northwestern portion and the Rio Grande in the southwest. The San Juan and Animas rivers are the major drainages feeding the Colorado River drainage and the Rio Puerco is the main drainage feeding the Rio Grande drainage. These surface water flows account for much of the irrigation, municipal and industrial water uses in the San Juan Basin.
Ground water resources in the basin are primarily contained in the confined sandstones of the Tertiary and Cretaceous age and Quaternary surficial valley fills in the northern basin. Sandstones of the Jurassic and Triassic age are added to the above as possible ground water resource rocks in the southern part of the basin. In the northern part of the basin where this pit is located, the major ground water resource rocks are the Quaternary valley fills and the Tertiary sandstones in the San Jose, Nacimiento and Ojo Alamo. There is some contribution from the Cretaceous Mesa Verde sandstones in the far northwest part of the area. Generally the regional ground water flow in the Quaternary valley fills is from the topographically high outcrop areas to the west and north to the Animas, La Plata and San Juan River. The regional water flow for the Tertiary sandstones is from the topographically high surface outcrop areas into the central basin. General ground water quality range for Quaternary and Tertiary sediments is 350 – 70,000 ppm TDS. Ground water resources are primarily used for irrigation of individual owned farms, household water supply and industrial supply.

Site Specific Hydrology

This pit is located in the basal remnant of the Tertiary Nacimiento that has not been eroded. The Tertiary Ojo Alamo begins at a depth of 447'. It is geographically located near the crest of a ridge separating Thompson Arroyo and Two Cross Arroyo that dips westward toward the La Plata River valley. Surface water runoff drainage is west to southwest into Thompson Arroyo. Depth to ground water investigation included review of the New State Engineer iWater database and NMOCD Well search review of all wells in a nine section area surrounding section 19 where the pit is located. This review yielded one recorded water well and two cathodic ground bed drilling records in the 5400 feet to 7250 feet range from the pit. No depth to water was recorded for the water well. The subsea elevation for depth to groundwater, +5870', shown in the attached Table 1 was calculated based on total depth. If you assume depth to water is closer to 80 feet recorded in the shallow zone on the Taliaferro 4E ground bed to the north you calculate +5890'. It is possible that this water well and the shallow water zone in the Taliaferro 4E ground bed are both in Quaternary alluvium since these formations can be as thick as 200 feet and both are located in Farmington Glade. No drilling log was available for either well. Table 1 shows calculated depth to groundwater based on subsea elevations for the average of all wells and the nearest well for the pit bottom location at three feet below ground level. This yielded a minimum of 27 feet (nearest) and a maximum of 108 feet (average). Based on the probability that the shallow water in the nearest well is likely in alluvium that is not present under the proposed pit the depth to groundwater is likely 50' to 100 feet. Distance to surface water was calculated by measurement from Google Earth at 264 feet by measurement from pit center to the center of the arroyo to the south. The nearest fresh water well is 7250 feet as shown in Table 1.

References

Hydrogeology and Water Resources of San Juan Basin, Hydrologic Report 6 – NM Bureau of Mines and Mineral Resources – 1983
I Waters database-NM State Engineers office-researched in September, 2014
Well Search- NMOCD – researched in September, 2014


RPCI Owen 2A
GL=5990'
BROG Nye Fed 1M gb
GL=6027'
Depth to water=220'
BROG Taliaferro 4E gb
GL=6040'
Depth to water=80'
SJ03856
GL=5970' estd
Depth to water=? TD=100'
Roddy Production Co., Inc.
Owen No. 2A
Depth to Ground Water/ Topo
Scale: 1" = 2000'

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

Basin/County Search:

Basin: San Juan

PLSS Search:

Section(s): 17-20 **Township:** 31N **Range:** 12W

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 03866		SJ	1	2	3	29	31N	12W	221482	4084952	100		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

Basin/County Search:

Basin: San Juan

PLSS Search:

Section(s): 29-30 Township: 31N Range: 12W

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

Basin/County Search:

Basin: San Juan

PLSS Search:

Section(s): 13 **Township:** 31N **Range:** 13W

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

Basin/County Search:

Basin: San Juan

PLSS Search:

Section(s): 24 **Township:** 31N **Range:** 13W

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

Basin/County Search:

Basin: San Juan

PLSS Search:

Section(s): 25 **Township:** 31N **Range:** 13W

1503

E

30-045-24452

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit C Sec. 29 Twp. 31 Rng. 12

Name of Well/Wells or Pipeline Serviced TALIAFERRO #4E

cps 6297w

Elevation N/A Completion Date 12/22/86 Total Depth 390' 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. 80' & 190'

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

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

Depths vent pipes placed: 380'

Vent pipe perforations: 180'

Remarks: Cmtd Nipple

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 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: P-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

4138

30-045-23536

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit P Sec. 20 Twp 31 Rng 12

Name of Well/Wells or Pipeline Serviced Nye Federal 1-M

cps 6216w

Elevation N/A Completion Date 12/23/86 Total Depth 360' 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. 220' 15 gallons per minute

Depths gas encountered: N/A

Type & amount of coke breeze used: 16000#

Depths anodes placed: 340, 330, 320, 310, 300, 290, 280, 270, 260, 250

Depths vent pipes placed: 360' of 1" vent pipe

Vent pipe perforations: 160'

Remarks: gb #1

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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.

Table 1

Roddy Production Co., Inc.
Depth to GW estimate
Owen lease
Section 19, T31N, R12W

Well #	Location	Elevation	Deth to water	Depth to water-SS	Distance from pit-ft.	Comments
SJ03986	NW/NE/SW/4, 29-31-12	5970	100	5870	7250	iWaters data. Elev est'd from topo plot
BROG-Taliaferro 4E	830'FNL-1850'FWL, 29-31-12	6040	80	5960	5400	Data from gb drlg record, 30-045-24452. This zone could be Quaternary alluvium. An additional water zone was recorded at 190' which yields a SS elev of +5850'.
BROG-Nye Fed 1M	870'FSL-1015'FEL, 20-31-12	6027	220	5807	5500	Data from gb drlg record, 30-045-28538
			Average All	5879		
			Nearest	5960		
RPO Owen 2A	1230' FNL-740' FEL, 19-31-12	5990	111	5879		DTW est using avg and btm of pit 3' below GL = 108'
		5990	30	5960		DTW est using nearest and btm of pit 3' below GL=27'

Requested variances
Roddy Production Co., Inc.
Owen No. 2A

1. A four foot 12 gauge metal hog wire fence attached to braced steel "T" posts with 1" pipe top rail around the perimeter of the berm enclosing the condensate storage tank and this pit will be used in lieu of the four strand barbed wire fence required in NMAC 19.15.17.11 D(3). This alternative will provide equal to or better deterrence of unauthorized access and exclusion of livestock.

2. If the surface owner is of public entity (i.e. BLM) Roddy Production Co. Inc. will notify by email the intent to close the BGT in place of a certified mail letter. Roddy Production will request a read receipt of the email which will be equal and/or equivalent notification as certified mail.

Design Plan
Roddy Production Co., Inc.
Owen No. 2A

1. This BGT is designed and constructed to contain the liquids and solids associated with this wells production, prevent contamination of fresh water and protect the public health and the environment.
2. The fence around the BGT has a sign in compliance with NMAC 19.15.16.8.
3. As a requested variance Roddy Production Co., Inc. has installed a four foot metal hog wire fence attached to braced steel "T" posts with 1" pipe top rail around the perimeter of the berm enclosing the condensate storage tank and this BGT.
4. This BGT is covered with steel grate across the open top.
5. This BGT is single wall steel construction with coal tar epoxy coating on the interior and paint on the exterior. This material is resistant to damage from the contents and UV light.
6. This BGT foundation is level and free of rocks or debris that could dent the bottom.
7. The sidewalls of this BGT are open for inspection for leakage down to the bottom of the tank.
8. This BGT has a dirt berm around the perimeter of the excavation enclosing it to prevent surface water run on from entering the tank or the excavation.
9. This BGT is checked by a lease operator at least every other day and trucks are scheduled to pull liquid from this BGT as needed to prevent overflow.
10. This BGT is equipped with a riser for the trucks to pull water from to prevent damage to the grating.
11. **This BGT was installed prior to 06/16/2008**. It will be integrity tested immediately by filling with produced water to within one inch of the top and level will be monitored for 24 hours. The well will be taken out of production during test period to prevent overflow. Tank will be tested annually or at any sign of possible leakage.

Operation and Maintenance Plan
Roddy Production Co., Inc.
Owen No. 2A

1. Roddy Production Co., Inc. will operate and maintain this BGT to prevent contamination of fresh water, protect public health and the environment.
2. Roddy Production Co., Inc. will not discharge into or store any hazardous waste in this BGT.
3. Roddy Production Co., Inc. will inspect this BGT for leaks at least monthly and record the results of this inspection on their lease operator's records. The BGT will be tested for mechanical integrity at least annually or any time the integrity is in question and the results of these tests will be recorded on the lease operations report. These records will be maintained for five years and will be available for inspection at their Farmington office by the NMOCD. If a leak is noted during this inspection or an interim inspection, the NMOCD will be notified immediately, the fluid will be removed from the pit within 48 hours and the leak repaired or the BGT replaced in conformance with the regulations contained in NMAC 19.15.17.
4. The injection and withdrawal of liquids from this BGT will be accomplished through appropriately designed header/riser systems to prevent damage to the BGT by the installation or removal of hoses.
5. The BGT and surrounding inspection excavation will be surrounded by a berm to prevent surface water run on from entering the pit or excavation.
6. All measurable accumulations of oil on the surface of the water inside the BGT will be removed immediately upon notice. All treatable oil will be returned to the condensate storage tank for sale. Any non-treatable oil/emulsion will be recycled with a waste oil recycler.
7. Roddy Production Co., Inc. will keep an oil absorbent boom at their Farmington office that can be dispatched to this site within one hour in the event of an accidental surface discharge.
8. The lease operator will inspect this tank at least every other day and arrange for the removal of contained water as needed to prevent overflow.
9. Produced water contained in this BGT will be disposed of by evaporation or hauling to disposal at Agua Moss Sunco SWD#1(Permit #-CL1-005) Agua Moss Pretty Lady #1 SWD (Permit #11034-A) or Basin Disposal (Permit #-NM-01-005)
10. The fence around the perimeter of the berm enclosing the condensate storage tank and this BGT will be maintained in good condition to prevent unauthorized access and entry by livestock or wildlife.
11. The surrounding excavation sidewalls will be maintained so there is visibility to the bottom of the tank for inspection/monitoring.

Closure and Reclamation Plan
Roddy Production Co., Inc.
Owen No. 2A Production Single Wall BGT

In Accordance with Rule 19.15.17.13 NMAC, the following plan describes the general closure requirements of below grade tanks on Roddy Production Co. locations in the San Juan Basin of New Mexico. This is Roddy Production's standard closure plan for all BGT's under Rule 19.15.17 NMAC and operated by Roddy Production Co. For closures that do not conform to this standard closure plan, a separate BGT specific closure plan will be developed and utilized.

Closure Conditions and Timing for BGT:

- Within 60 days of cessation of operation Roddy Production will:
  - Remove all Liquids/ sludge and dispose of in a division approved manner
- Within 72 hrs or 1 week prior to closure Roddy Production will:
  - Give notice to surface owners by certified mail. For public entities by email as specified on variance page.
  - Give notice to District Division verbally and in writing/email
- Within 6 months of cessation of operation Roddy Production will:
  - Remove BGT and dispose, recycle, reuse or reclaim in a division approved manner
  - Remove unused onsite equipment associated with the BGT
- Within 60 Days of closure Roddy Production will:
  - Send the District Division a closure report per 19.15.17.13.F

General Plan Requirements:

1. Prior to initiating any BGT closure except in case of emergency, Roddy Production will notify the surface owner of the intent to close the BGT by certified mail no later than 72 hrs or 1 week before closure and a copy of this notification will be included in the closure report. In case of emergency, the surface owner of record will be notified as soon as practical.

2. Notice of the closure will be given to the Aztec District office between 72 hrs and 1 week of the scheduled closure via email or phone. The notification of closure will include the following.

   a. Operators Name (Roddy Production)
   b. Well name and API number
   c. Location (USTR)

3. All liquids will be removed from the BGT following cessation of operation. Produced water will be disposed of at one of the following NMOCD approved facilities depending on the proximity to the BGT site: Agua Moss Pretty Lady SWD #1 (Permit#1034-A), Agua Moss Sunco SWD #1 (Permit# CL1-005) or Basin Disposal (Permit #-NM 01-005).

4. Solids and sludge's will be shoveled or vacuumed out for disposal at Envirotech (Permit # - NM01-0011) or JFJ Land Farm/ Industrial Ecosystems Inc. (Permit # NM 01-0010B)

5. Roddy Production will obtain prior approval from NMOCD to dispose, recycle, reuse or reclaim the BGT and provide documentation of the disposition of the BGT in the closure report. Steel materials will be recycled or reused as approved by the Division. Fiberglass tanks will be empty, cut up or shredded and EPA cleaned without soils or contaminated material for disposal as solid waste. Fiberglass and liner materials will meet the conditions of 19.15.35 NMAC. Disposal will be at a licensed disposal facility, presently San Juan Regional Landfill operated by Waste Management under NMED Permit SWM-052426

6. Any Equipment associated with the BGT that is no longer required for some other purpose, following the closure will be removed from location.

7. Following the removal of the tank and any liner material, Roddy Production will test the soils beneath the BGT as follows:

TABLE I

Closure criteria for soils beneath Below Grade Tanks, Drying pads associated with Closed Loop systems and pits where contents are removed

Depth below bottom of pit to groundwater less than 10,000 mg/L TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride	EPA 300.0	600 mg/kg
	TPH	EPA SW-846 Method 418.1	100 mg/kg
	BTEX	EPA SW-846 Method 801B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
51 feet-100 feet	Chloride	EPA 300.0	10,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 801B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
> 100 feet	Chloride	EPA 300.0	20,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 801B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

* Or test method approved by the division

** Numerical limits or natural background, whichever is greater

a) At a minimum, a five point composite sample will be taken to include any obvious stained or wet soils or any other evidence of contamination.

b) The laboratory sample shall be analyzed for the constituents listed in Table I of 19.15.17.13

(1) Or other test methods approved by the Division

(2) Numerical limits or natural background level, whichever is greater

(19.15.17.13 NMAC-Ro, 19.15.17.13 NMAC 3/28/2013)

8. If the Division and/or Roddy Production determine there is a release, Roddy Production will comply with 19.15.17.13.C.3b
9. Upon completion of the tank removal, the excavation will be backfilled with non-waste earthen material and covered with a minimum of one foot of top soil or background thickness whichever is greater and to existing grade. The surface will be re-contoured to match the native grade and prevent ponding.

For those portions of the former BGT area that are no longer required for production activities, Roddy Production will seed the disturbed areas the first favorable growing season after the BGT is covered. Seeding will be accomplished via drilling on the contour whenever practical, or by other Division approved methods. Roddy Production will notify the Division when reclamation a re-vegetation is complete.

Reclamation of the BGT shall be considered complete when:

a. Vegetative cover reflects a life form ratio of +/- 50% of pre disturbance levels.
b. Total percentage plant cover of at least 70% of pre disturbance levels (excluding noxious weeds)

OR

c. Pursuant to 19.15.17.13.H.5d Roddy Production will comply with obligations imposed by other applicable federal or tribal agencies in which their re-vegetation and reclamation requirements provide equal or better protection of fresh water, human health and the environment.

10. For those portions of the former BGT area required for production activities, reseeding will be done at well abandonment, and following the procedure noted above.

Closure Report:
All closure activities will include proper documentation and will be submitted to the NMOCD within 60 days of the BGT closure on a Closure Report Using Division Form C-144. The report will include the following:

- Proof of Closure Notice (Surface Owner & NMOCD)
- Backfilling and cover installation
- Confirmation sampling analytical results
- Disposal Facility Name(s) and permit number(s)
- Application Rate & seeding techniques
- Photo documentation of reclamation

Roddy Production Company Owen #2A BGT

36" tall x 15' diameter 95 BBL water tank with skim oil baffle.

Single wall and Single bottom steel tank w/ expanded metal top. 8" I Beam skid under tank.