

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.

16460

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

- Type of action: ☐ 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: Williams Four Corners LLC OGRID #: _____
Address: 1755 Arroyo Drive, Bloomfield, NM 87413
Facility or well name: San Juan 30-6 Unit No. 089A Produced Water BGT
API Number: 30-039-21673 OCD Permit Number: _____
U/L or Qtr/Qtr SWSE Section 36 Township 30N Range 6W County: San Juan County
Center of Proposed Design: Latitude 36.765192 Longitude -107.412729 NAD: ☐ 1927 ☒ 1983
Surface Owner: ☐ 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.
Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: 23.8 bbl Type of fluid: Produced Water
Tank Construction material: Steel
☐ 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 _____ 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
☐ Alternate. Please specify _____

6.
Netting: Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

- ☐ Screen ☐ Netting ☐ Other Non open top tank
☐ 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
☐ 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:

- ☒ 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.

- ☒ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

☐ Yes ☒ No
☐ NA

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No
☐ NA

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 ☒ 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 ☒ 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

<p>Within 100 feet of a wetland.</p> <ul style="list-style-type: none"> - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Temporary Pit Non-low chloride drilling fluid</u>	
<p>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).</p> <ul style="list-style-type: none"> - Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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;</p> <ul style="list-style-type: none"> - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet of a wetland.</p> <ul style="list-style-type: none"> - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Permanent Pit or Multi-Well Fluid Management Pit</u>	
<p>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).</p> <ul style="list-style-type: none"> - Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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.</p> <ul style="list-style-type: none"> - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 feet of a wetland.</p> <ul style="list-style-type: none"> - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site 	<input type="checkbox"/> Yes <input type="checkbox"/> 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.

- ☒ 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 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 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

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 ☒ Below-grade Tank ☐ Multi-well Fluid Management Pit
☐ Alternative
- Proposed Closure Method: ☒ 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.*

- ☒ 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 C 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 H of 19.15.17.13 NMAC
☒ 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

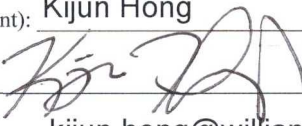
16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

<input type="checkbox"/> Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
<input type="checkbox"/> Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
<input type="checkbox"/> Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
<input type="checkbox"/> 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
<input type="checkbox"/> Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
<input type="checkbox"/> Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
<input type="checkbox"/> Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
<input type="checkbox"/> Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
<input type="checkbox"/> Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
<input type="checkbox"/> Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
<input type="checkbox"/> Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

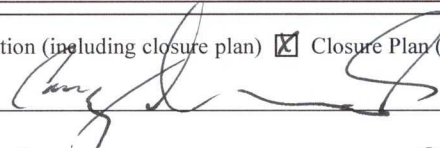
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Kijun Hong Title: Environmental Specialist

Signature:  Date: 8/20/2018

e-mail address: kijun.hong@williams.com Telephone: 505-632-4475

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

OCD Representative Signature:  Approval Date: 9/24/18

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.*

<input type="checkbox"/> Proof of Closure Notice (surface owner and division)
<input type="checkbox"/> Proof of Deed Notice (required for on-site closure for private land only)
<input type="checkbox"/> Plot Plan (for on-site closures and temporary pits)
<input type="checkbox"/> Confirmation Sampling Analytical Results (if applicable)
<input type="checkbox"/> Waste Material Sampling Analytical Results (required for on-site closure)
<input type="checkbox"/> Disposal Facility Name and Permit Number
<input type="checkbox"/> Soil Backfilling and Cover Installation
<input type="checkbox"/> Re-vegetation Application Rates and Seeding Technique
<input type="checkbox"/> 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: _____

**SITING CRITERIA
SUMMARY INFORMATION SHEET
19.15.17.10 NMAC**



LT Environmental Inc.
848 East Second Avenue
Durango, Colorado 81301
T 970-385-1096

GENERAL INFORMATION

Site Name: San Juan 30-6 Unit No. 089A
Pit Type: Below Grade Tank

Operator: Williams Four Corners LLC
Date:
Prepared by: LT Environmental

GENERAL SITE LOCATION INFORMATION

Geologic Formation: San Jose Formation
Soil Type: Rockland-Torriorthents-Haplargill
Annual Precipitation: 12.87 inches

SEC: 36 **TWN:** 30N **RNG:** 6W
Latitude: 36.765192 **Longitude:** -107.412726

GENERAL SITING CRITERIA

Is groundwater less than 25 feet below the bottom of below grade tank? Greater than 100 feet
See Figure 3 and attached iWaters Data

BELOW GRADE TANK SITING CRITERIA

Within 100 feet of a continuously flowing watercourse? NO See Figure 1

The La Jara arm of the San Juan River is located approximately 5.25 miles northwest of the BGT.

Within 100 feet of a significant watercourse? NO See Figure 1 and Figure 3

A second order tributary of Frances Creek is located 660 feet to the east. Frances Creek is located

Within 100 feet of a lakebed, playa lake, or sinkhole? NO See Figure 2

A stock pond is located approximately 0.5 miles west of the BGT.

Within 200 horizontal feet of a spring or a freshwater well used for public or livestock consumption? NO See Figure 3 and attached iWaters data

Water well SJ #02541 is located approximately 3 miles southwest of the BGT.

ATTACHED DOCUMENTS:

Hydrogeologic Report
Figure 1: Topographic Map
Figure 2: Aerial Photograph
Figure 3: Water Well and Surface Water Features
iWaters Data

ADDITIONAL COMMENTS:



San Juan 30-6 Unit No. 089A Hydrogeologic Report for Siting Criteria

General Geology and Hydrology

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate surficial geology. The below-grade tank is located on Frances Mesa east of Navajo City, New Mexico. The predominant geologic formation is the San Jose Formation of Tertiary age, which underlies surface soils and is often exposed (Dane and Bachman, 1965). Deposits of Quaternary alluvial and aeolian sands occur prominently near the surface of the area, especially near streams and washes.

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits, serve as the primary aquifers in the San Juan Basin. In most of the area, the San Jose Formation lies at the surface and overlies the Nacimiento Formation. Thickness of the San Jose Formation ranges from 200 feet to 2,700 feet, thickening from west to east across the region of interest. Aquifers occur within the coarser and continuous sandstone bodies of the San Jose Formation, and groundwater within these aquifers flows north, toward the San Juan River. Little specific hydrogeologic data are available for the San Jose Formation system, but numerous wells and springs are used for stock and domestic supplies (Stone et al., 1983).

The prominent soil type at the below-grade tank is Orlie fine sandy loam (www.emnrd.state.nm.us). Miles of arroyos, washes, and intermittent streams exist as part of the drainage network toward the San Juan River. These features often cut into soil and other unconsolidated materials, contributing to sedimentation downstream. The sudden influx of water from storm events easily erodes the soils that cover the area and prohibits effective recharge to the underlying aquifers.

Dry and arid weather further prohibits active recharge. The climate of the region is arid, averaging 12.87 inches of precipitation annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation falls from August through October. The heaviest rainfall occurs in the summer in isolated, intense cloudbursts. November through June is relatively dry. Snow generally falls from December to mid-February and averages less than one-half inch in depth. However, most recharge occurs during the winter months during snowmelt periods from the upper elevations (Western Regional Climate Center www.wrcc.dri.edu). The predominant vegetation are sagebrush and grasses with a more restricted pinon-juniper association (Dick-Peddie, 1993).



Site-Specific Hydrogeology

Depth to groundwater is estimated to be greater than 100 feet at the below-grade tank. This estimation is based on data from Stone and others (1983), the United States Geological Survey (USGS) *Groundwater Atlas of the United States*. Local topography and proximity to surface hydrologic features are taken into consideration. When available, permitted water well logs and cathodic protection well logs are referenced to infer depth to groundwater near the site.

Beds of water-yielding sandstone are present in the San Jose Formation, which are fluvial in origin and are interbedded with mudstone, siltstone, and shale. "Extensive intertonguing" of different members of this formation is reported. Porous sandstones form the principal aquifers, while relatively impermeable shales and mudstones form confining units between the aquifers. Most aquifers exist within the San Jose Formation at depths greater than 100 feet, and thicknesses of the aquifers can be up to several hundred feet (USGS, *Groundwater Atlas of the United States*; Stone et al., 1983).

The below-grade tank is located in a region incised by canyons, washes, gullies, and arroyos, with the Frances Mesa being the predominant topographic feature. The mesas are composed of cliff-forming sandstone, and systems of dry washes and their tributaries composed of alluvium are evident on the attached aerial image. The site is located at an elevation of approximately 6,738 feet on the northern edge of Frances Mesa in the upper reaches of Frances Creek. Depth to groundwater is expected to be deep on the Frances Mesa. An elevation difference between the site and the primary channel of Frances Creek of 302 feet suggests groundwater is greater than 100 feet beneath the below-grade tank.

Groundwater data are sparse in this region; the nearest iWaters data point with similar topographical characteristics is well number SJ 03364 which is located approximately 3 miles to the south. Depth to groundwater in the permitted water well is listed as 620 feet below ground surface, indicating that groundwater is greater than 100 feet beneath the below-grade tanks on site. Groundwater data available from the New Mexico State Engineer's iWaters database for wells near the below-grade tank are attached.

References

- Dane, C.H. and G.O. Bachman, 1965, *Geologic Map of New Mexico*: U.S. Geological Survey, 1 sheet, scale 1:500,000.
- Dick-Peddie, W.A., 1993, *New Mexico Vegetation – Past, Present and Future*: Albuquerque, New Mexico, University of New Mexico Press, 244 p.

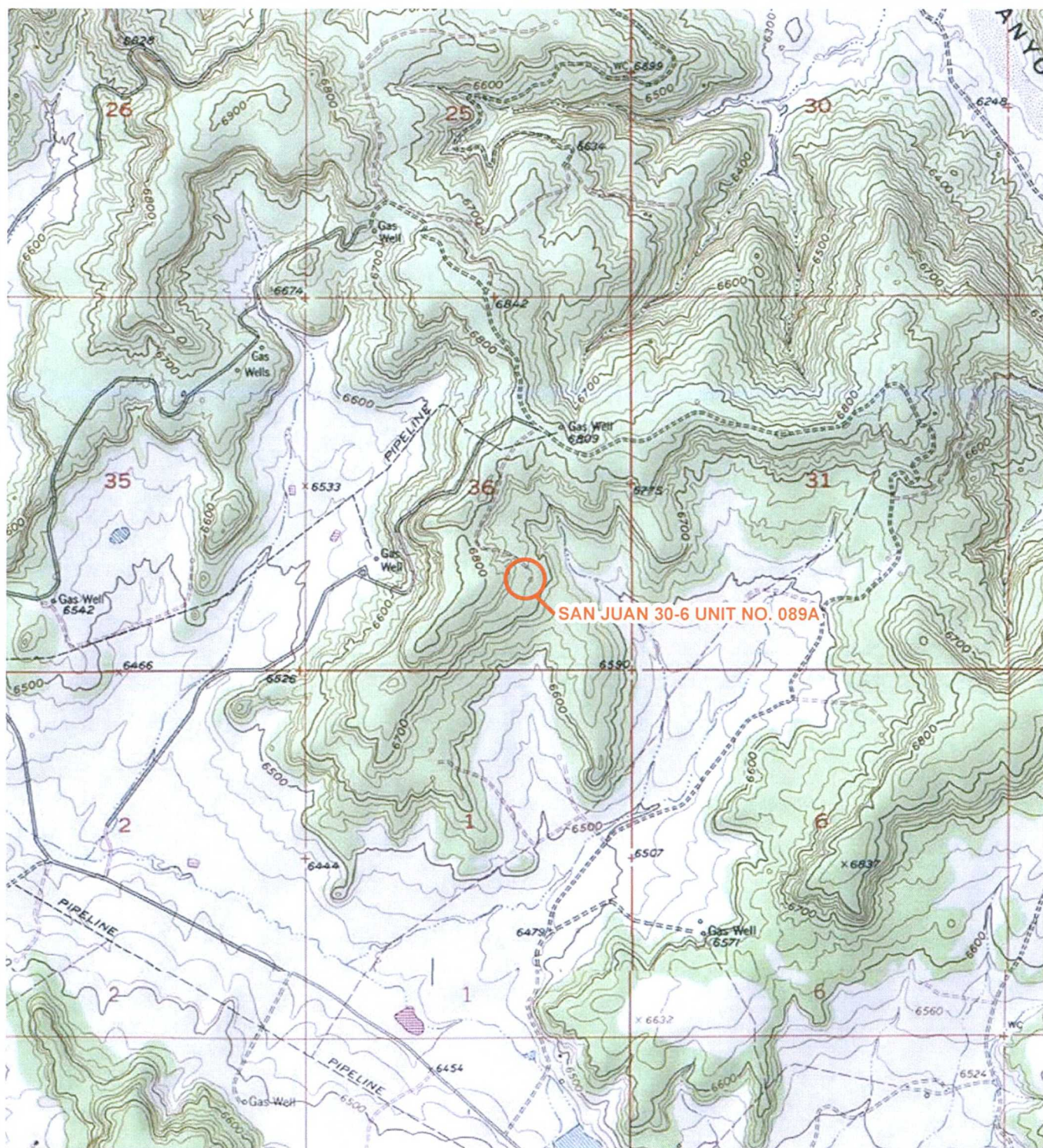


Stone, W.J., F.P. Lyford, P.F. Frenzel, N.H. Mizell, and E.T. Padgett, 1983, *Hydrogeology and Water Resources of the San Juan Basin, New Mexico*: HR-6 New Mexico Bureau of Geology and Mineral Resources Hydrology Report 6.

USGS, Groundwater Atlas of the United States: Arizona, Colorado, New Mexico, Utah, HA 730-C: (<http://www.pubs.usgs.gov>).

Western Region Climate Center, 2008, New Mexico climate summaries: Desert Research Institute at <http://www.wrcc.dri.edu/summary/climsmnm.html>.

New Mexico Energy, Minerals and Natural Resources Department, www.emnrd.state.nm.us.



LEGEND



SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

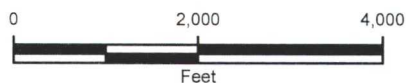
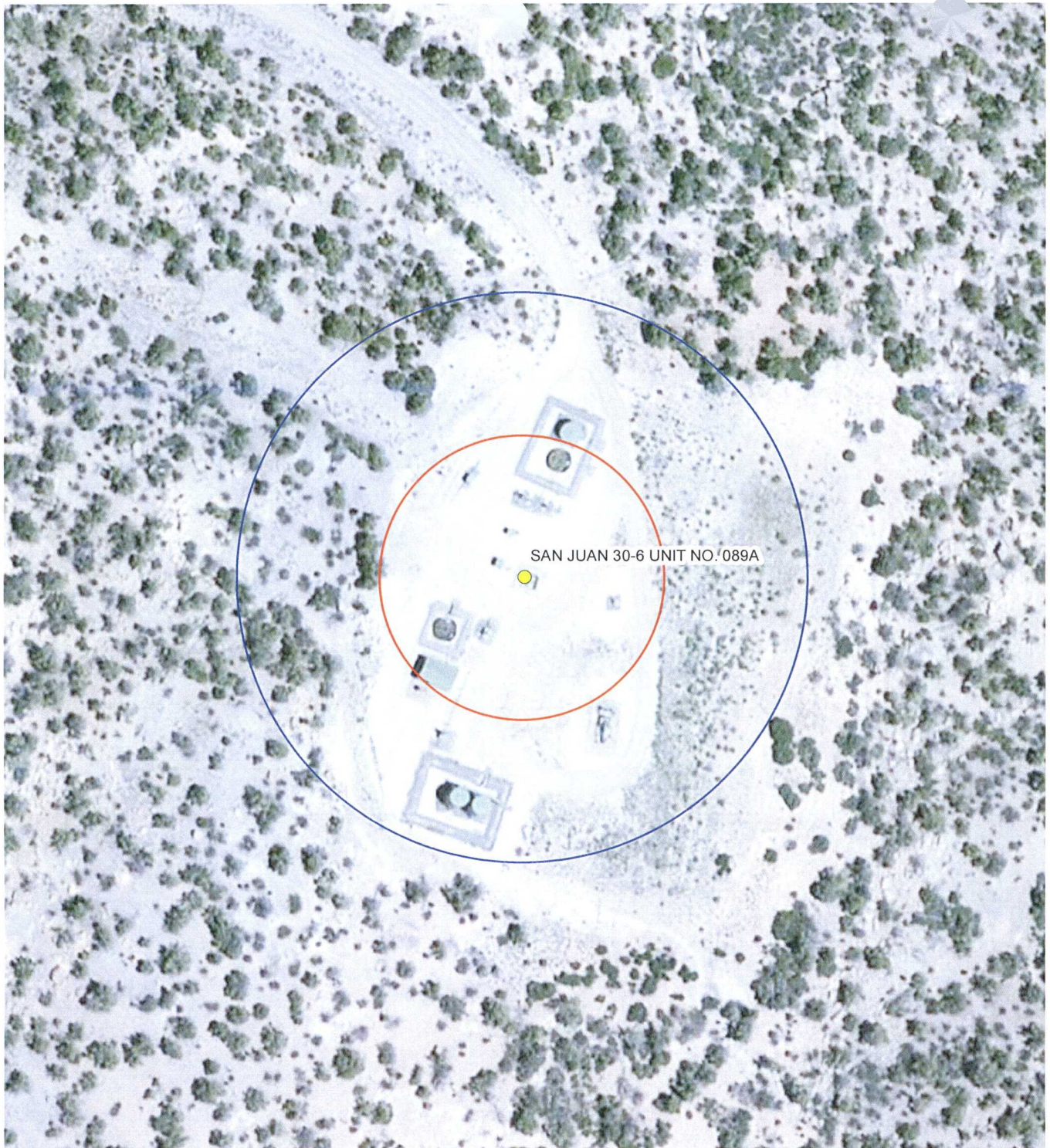





FIGURE 1
TOPOGRAPHIC MAP
SAN JUAN 30-6 UNIT NO. 089A
SWSW SEC 36 T30N R6W
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS





LEGEND

-  BELOW GRADE TANK
-  100-FOOT RADIUS
-  200-FOOT RADIUS

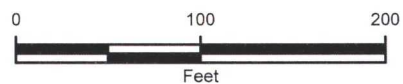


FIGURE 2
AERIAL PHOTOGRAPHIC MAP
SAN JUAN 30-6 UNIT NO. 089A
SWSW SEC 36 T30N R6W
RIO ARriba COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS





IMAGE COURTESY OF ESRI

LEGEND

- WATER WELL
- BELOW GRADE TANK

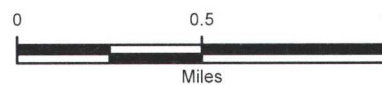


FIGURE 3
NEARBY WATER WELL MAP
SAN JUAN 30-6 UNIT NO. 089A
SWSW SEC 36 T30N R6W
RIO ARriba COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS





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	Code	POD Sub- basin	County	Q Q Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
SJ 03364		SJ	RA	1 4 3	13	29N	06W	284070	4066662*	4911	900	620	280

Average Depth to Water: 620 feet

Minimum Depth: 620 feet

Maximum Depth: 620 feet

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 284648.34

Northing (Y): 4071539.7

Radius: 5000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/2/18 3:16 PM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Williams Four Corners LLC
Closure Plan - Below Grade Tanks

In accordance with Rule 19.15.17.13 NMAC of the New Mexico Administrative Code (NMAC), the information within this document describes the closure requirements to be used by Williams Four Corners LLC (Williams) when closing Below Grade Tanks (BGTs). This is Williams' standard procedure for all BGTs. A separate closure plan will be submitted for any BGT closure which does not conform to this plan.

Pit Rule Citation (NMAC)	Rule Requirement	Operator Requirements
19.15.17.13.A	Closure Plan	This plan describes Williams proposed closure methods and the proposed procedures and protocols to implement and complete BGT closure.
19.15.17.13.C(1)		Prior to commencing BGT closure, Williams will obtain a NMOCD approved closure plan before any closure activities start. Williams understands that the NMOCD considers the start of closure for a BGT is when the BGT is being removed from the ground.
19.15.17.13.C(2)		Williams will remove liquids and sludge from a BGT prior to commencing closure actions and will dispose the material in a NMOCD approved facility.
19.15.17.13.C.3(a)		Following removal of the tank and any liner material, Williams will test the soils beneath the BGT in accordance with 19.15.17.13.C.3(a) NMAC. Samples will be collected from beneath the liner and/or BGT for obvious stained or wet soils, or any other evidence of contamination.
19.15.17.13.C.3(b)		If any contaminant concentration is higher than the parameters listed in Table I of 19.15.17.13 NMAC, the NMOCD may require additional delineation upon review of the results and Williams must receive approval before proceeding with closure.
19.15.17.13.C.3(c)		Upon completion of BGT removal, if all contaminant concentrations are less than or equal to the parameters listed in Table I of 19.15.17.13 NMAC, the excavation will be backfilled with non-waste contained, uncontaminated, earthen material.
19.15.17.13.E(1)	Notification	Notice of closure will be given to the surface owner at least 72 hours, but not more than one week, prior to any closure operation via Certified mail. As a variance (if approved with the closure plan), surface owners which are public entities (State, BLM, or Tribal) will be notified by email or phone. The notification of closure will include the following: operators name, well name and API number (if applicable), and location (ULSTR).
19.15.17.13.E(2)		Notice of Closure will be given to the NMOCD office at least 72 hours, but not more than one week, prior to any closure operation via Certified mail. As a variance (if approved with the closure plan), the NMOCD district office will be notified by email or phone. The notification of closure will include the following: operators name, well name and API number (if applicable), and location (ULSTR).
19.15.17.13.F(1)	Reporting	Operator will send the NMOCD a closure report in accordance with 19.15.17.F(1) NMAC within 60 days of closure including the following items: Proof of closure notice, analytical results, backfill information, revegetation, and photo documentation of reclamation. Williams understands that the NMOCD considers the closure date the day in which the BGT is backfilled and re-contoured. Revegetation is still required but, may be addressed in closure report.
19.15.17.13.G.4(a)	Timing	Within 60 days of cessation of operations, Williams will remove liquids and sludge from a BGT prior to implementing a closure method and will dispose of the material in a NMOCD approved facility. Disposal facilities to be used by Williams are listed below based on the listed waste types.
19.15.17.13.G.4(b)		Within 6 months of cessation of operations, Williams will dispose, recycle, reuse, or reclaim the BGT in a NMOCD approved manner. If required, Williams will provide documentation of the disposition of the BGT to the NMOCD. Liner materials will be cleaned to remove soils or contaminated material for disposal as solid waste. Disposal facilities to be used by Williams are listed below based on the listed waste types.
19.15.17.13.H.1(a)	Reclamation	Williams will reclaim the area by substantially restoring the impacted surface area to the condition that existed prior to oil and gas operations by placement of soil cover as described below for 19.15.17.13.H.2 NMAC. The location and associated areas will be recontoured that approximates the original contour and blends with the surrounding topography and revegetate as described below for 19.15.17.13.H.5 NMAC.
19.15.17.13.H.1(b)		Williams will submit an alternative plan to be approved by the NMOCD and written approval from the surface owner before submitting the C-144 application.
19.15.17.13.H.1(c)		If a BGT is removed from an area where production operations will continue, the area will be reclaimed in such a way to minimize dust and erosion to the extent practicable.
19.15.17.13.H.2		Cover will include one foot of suitable material, with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
19.15.17.13.H.4		Williams will construct the soil cover to the existing grade to prevent ponding of water and erosion of the cover material.

Williams Four Corners LLC
Closure Plan - Below Grade Tanks

Pit Rule Citation (NMAC)	Rule Requirement	Operator Requirements
19.15.17.13.H.5(a) 19.15.17.13.H.5(b) 19.15.17.13.H.5(c) 19.15.17.13.H.5(d) 19.15.17.13.H.5(e)	Reclamation	For those portions of the former BGT area no longer in use with the exception where production operations will continue, the area will be reclaimed as nearly as practicable to their original condition or their final land use. Reclamation will begin as early as practical. The areas will be maintained to minimize dust and topsoils placed and contoured to limit erosion control, maintain stability, and preserve surface-water flow patterns. Williams will seed the disturbed areas the first favorable growing season following closure of the BGT. Williams 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. Williams will notify the NMOCD when reclamation and re-vegetation is complete.

Summary of Waste Materials and Disposal Facilities	
Waste Types	Disposal Facility
Steel Tank	San Juan County Landfill; Steel Recycling
Fiberglass Tank	San Juan County Landfill; Bondad Landfill; Re-use
Liner (cleaned – absent soil / sludge)	San Juan County Landfill; Bondad Landfill
Sludge	Envirotech; Industrial Ecosystems Inc.; T-N-T; Bondad Landfill
Liquids (Water / Hydrocarbons)	Basin Disposal; Key Energy; T-N-T
Contaminated Soil	Envirotech; Industrial Ecosystems Inc.; T-N-T; Bondad Landfill
Fencing / Miscellaneous	Re-use or Scrap

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 ground water less than 10,000 mg/l	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 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 8021B or 8260B	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 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 8021B or 8260B	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 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846	10 mg/kg

Variance Request:

Williams requests a variance request from Subsection E(1) of 19.15.17.13 New Mexico Administrative Code (NMAC) which states:

The operator shall notify the surface owner by certified mail, return receipt requested that the operator plans closure operations at least 72 hours, but not more than one week, prior to any closure operation. Notice shall include well name, API number and location. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.

The variance will allow Williams to notify public agencies such as the Bureau of Land Management (BLM), State of New Mexico, local government/municipalities, and/or tribal agencies via email based on their notification preferences