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

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

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

1023 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
, ,

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.					
Operator:					
Address: PO Box 640 / 721 S Main Aztec, NM 87410					
Facility or well name: Rosa Unit 183C					
API Number:OCD Permit Number:					
U/L or Qtr/Qtr H Section 19 Township 31N Range 5W County: Rio Arriba					
Center of Proposed Design: Latitude         36.88613N         Longitude         -107.39580W         NAD: □1927 ☒ 1983					
Surface Owner:  Federal  State  Private  Tribal Trust or Indian Allotment					
☑ 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: ☐ 20,000 bbl Dimensions: ☐ 140' x W 70' x D 12'    **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					
Below-grade tank: Subsection I of 19.15.17.11 NMAC  Volume:bbl Type of fluid:  Tank Construction material:  Secondary containment with leak detection					
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.					

4					
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 As per BLM specifications					
7.					
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)					
Screen Netting Other					
Monthly inspections (If netting or screening is not physically feasible)					
8. Signs: Subsection C of 19.15.17.11 NMAC					
☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers					
☑ Signed in compliance with 19.15.3.103 NMAC					
Administrative Approvals and Exceptions:					
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.  Please check a box if one or more of the following is requested, if not leave blank:					
Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau of	office for				
consideration of approval.  Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.					
10.					
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 accept	stable source				
material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate the control of t	priate district				
office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.  Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or					
above-grade tanks associated with a closed-loop system.					
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ⊠ No				
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).	☐ Yes ☒ No				
- Topographic map; Visual inspection (certification) of the proposed site					
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes No				
(Applies to temporary, emergency, or cavitation pits and below-grade tanks)  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	∐ NA				
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	☐ Yes ☐ No ☑ NA				
<ul> <li>(Applies to permanent pits)</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	Z IVA				
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock	☐ Yes 🏻 No				
watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.  - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site					
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	☐ Yes ☑ No				
adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality					
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.	☐ 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 FEMA map	☐ Yes ⊠ No				

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.  Mydrogeologic 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:
12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.  Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9  Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
Design that - 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:
Previously Approved Operating and Maintenance Plan API Number: (Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.    Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC     Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC     Climatological Factors Assessment     Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC     Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC     Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC     Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC     Quality Control/Quality Assurance Construction and Installation Plan     Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC     Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC     Nuisance or Hazardous Odors, including H <sub>2</sub> S, Prevention Plan     Emergency Response Plan     Oil Field Waste Stream Characterization     Monitoring and Inspection Plan     Erosion Control Plan     Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
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 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 (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
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 I of 19.15.17.13 NMAC  □ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Instructions: Please indentify the facility or facilities for the disposal of liquids, facilities are required.					
Disposal Facility Name:	Disposal Facility Permit Number:				
Disposal Facility Name:	Disposal Facility Permit Number:				
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 below) No					
Required for impacted areas which will not be used for future service and operation Soil Backfill and Cover Design Specifications based upon the appropriate Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	e requirements of Subsection H of 19.15.17.13 NMA I of 19.15.17.13 NMAC	C			
17. Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the provided below. Requests regarding changes to certain siting criteria may require considered an exception which must be submitted to the Santa Fe Environmenta demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC.	e administrative approval from the appropriate disti I Bureau office for consideration of approval. Justi	rict office or may be			
Ground water is less than 50 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Dat	a obtained from nearby wells	☐ Yes ☑ No ☐ NA			
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; Dat	a 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; Database search;	a obtained from nearby wells	<ul><li>☐ Yes ☑ No</li><li>☐ NA</li></ul>			
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other sig lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	nificant watercourse or lakebed, sinkhole, or playa	☐ Yes ⊠ No			
Within 300 feet from a permanent residence, school, hospital, institution, or church - Visual inspection (certification) of the proposed site; Aerial photo; Satellite		☐ Yes ☑ No			
Within 500 horizontal feet of a private, domestic fresh water well or spring that les watering purposes, or within 1000 horizontal feet of any other fresh water well or see NM Office of the State Engineer - iWATERS database; Visual inspection of	pring, in existence at the time of initial application.	☐ Yes ⊠ No			
Within incorporated municipal boundaries or within a defined municipal fresh water adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approx	•	☐ Yes ⊠ No			
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visu	al 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	g and Mineral Division	☐ Yes ☑ No			
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geolog Society; Topographic map	y & Mineral Resources; USGS; NM Geological	☐ Yes ☒ No			
Within a 100-year floodplain FEMA map		☐ Yes ⊠ No			
18. On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of th	e following items must be attached to the closure pl	an. Please indicate.			
by a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate req Proof of Surface Owner Notice - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the ap Construction/Design Plan of Temporary Pit (for in-place burial of a drying p Protocols and Procedures - based upon the appropriate requirements of 19.1: Confirmation Sampling Plan (if applicable) - based upon the appropriate req Waste Material Sampling Plan - based upon the appropriate requirements of Disposal Facility Name and Permit Number (for liquids, drilling fluids and of Soil Cover Design - based upon the appropriate requirements of Subsection Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	uirements of 19.15.17.10 NMAC Subsection F of 19.15.17.13 NMAC opropriate requirements of 19.15.17.11 NMAC ad) - based upon the appropriate requirements of 19. 5.17.13 NMAC uirements of Subsection F of 19.15.17.13 NMAC Subsection F of 19.15.17.13 NMAC lrill cuttings or in case on-site closure standards cannot of 19.15.17.13 NMAC I of 19.15.17.13 NMAC	15.17.11 NMAC			

19.
Operator Application Certification:  I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): Michael K. Lame Title: Sr. EH & S Specialist
Signature: Date: 4/0/09
e-mail address: <u>myke.lane@williams.com</u> Telephone: <u>505-634-4219</u>
20.  OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)
OCD Representative Signature: Browl Sell Approval Date: B-13-09
OCD Representative Signature: Branch Bold Approval Date: 8-13-09  Title: COD Permit Number:
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC  Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.  Closure Completion Date:
22.  Closure Method:  Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)  If different from approved plan, please explain.
23. Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify 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
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 (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
25.
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:

Telephone:

e-mail address:

Osstrict I 1625 N. French Dr., Hobbs, NM 88240

State of New Mexico Energy, Mineralo & Natural Resources Department

Fore C-102
Pervised Orizor 12, 2005
Potructions on back
Submit to Appropriate District Office
State Lesss - 4 Copies
For Lesss - 3 Copies

Otetrict II 1201 N Grand Avenue, Artesta, NM 88210 Orstrict III 1000 Pio Grazos Ad., Aztec, NM 87410

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

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

AMENDED REPORT

AIO

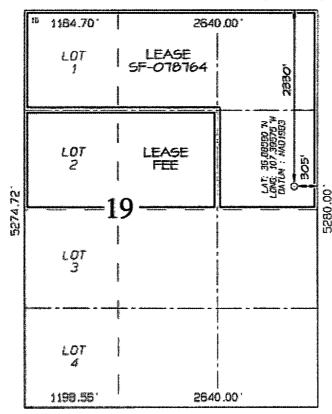
### WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	'Pool Code	Fedural Mass			
	97232 / 72319 / 71599	BASIN MANCOS / BLANCO MESAVERDE			
Property Code		Property News			
17033	ROSA UNIT 1830				
'OGRJD No.	*Operator Name * ** ** ** ** ** ** ** ** ** ** ** **				
120782	WILLIAMS	PRODUCTION COMPANY	6327		

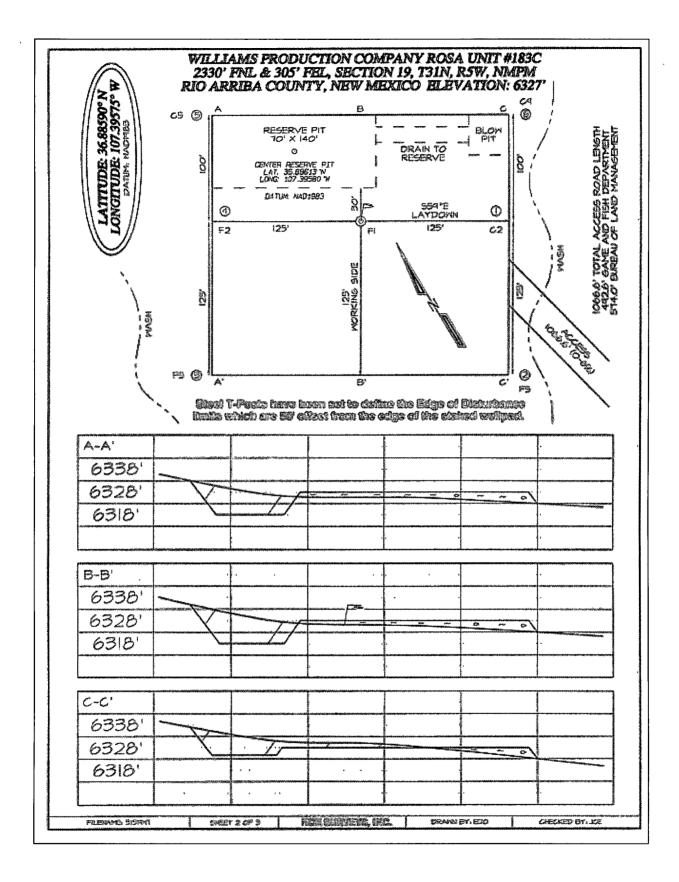
10 Surface Location UE or let no. Sestim face from the Engl. Almil. Line 0555 MORTH 305 EAST 19 31N 5W Н

ARRIBA 13 Bottom Hole Location If Different From Surface UL or lot no Consideration Com 232.01 Acres - (N/2)

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



	ERTIFICATION				
I hereby estify that the fement is but and come active ledge and ledge of extending the settler was a working this man a working the settler was a working the fement in the settler with the settler of the working sittered, or a constitution of the settler of a constitution hereaction entered by the	of that this organization retards or unlessed land including the cation or has a right his location purposet when it both a mineral				
Signature	Date				
Printed Name					
<sup>18</sup> SURVEYOR CE	ENTIFICATION				
<sup>19</sup> SURVEYOR CERTIFICATION I hereby centify that the well lecation sham on this plat was plotted from field notes of shall always note by no or under my supervision, and that the same is true and correct to the best of my fields?					
Date of Survey:	APRIL 5, 2009				
Signature and Seal of	Professional Surveyor				
, c	En				
CON	CONTO				
12 CH W	EXIG				
	269) <b>[8</b> ]				
A POPE	SSTUM S				
T.					
UASON C.	<b>EDWARDS</b>				
Contificate to	mhor 15050				



### Hydrogeological Report Williams Production Company, LLC Rosa Unit #183C

### Regional Hydrological Context

### **Referenced Well Location:**

The referenced well and pit is located on Bureau of Land Management land within Farmington Field Office (FFO) management jurisdiction in Rio Arriba County, New Mexico. This site is positioned in the northeastern portion of the San Juan Basin, an asymmetrical syncline that extends from northwestern New Mexico into southwestern Colorado (Carson National Forest FEIS, 2008). Elevation of the referenced well is approximately 6327 feet MSL.

### **General Regional Groundwater Description:**

As a portion of the San Juan Basin, the FFO administrative area is underlain by sandstone aquifers of the Colorado Plateau. The primary aquifer of potential concern at this location is the Unita-Animas Aquifer, composed primarily of Lower Tertiary rocks in the San Juan Basin. The aquifer consists of the San Jose Formation; the underlying Animas formation and its lateral equivalent, the Nacimiento formation; and the Ojo Alamo Sandstone. The thickness of the Unita-Animas aquifer generally increases toward the central part of the basin. In this region, the maximum thickness of the aquifer is approximately 3500 feet (USGS, 2001). This aquifer contains fresh to moderately saline water.

Groundwater generally flows toward the San Juan River and it tributaries, where it becomes alluvial groundwater or is discharged to stream flow. Additional information regarding the hydrogeologic setting can be found in the provided references.

### **Site Specific Information:**

Surface Hydrology: The pit is located on a mid-elevation southwestern facing slope

approximately 500 feet north of the upper reaches of Laguna

Seca Draw.

1<sup>st</sup> Water Bearing Formation:

Formation Thickness:

**Underlying Formation: Depth to Groundwater:** 

San Jose, Tertiary

Approximately 1,900 ft. Nacimiento, Tertiary

Depth to groundwater is estimated between 50 to 100 feet bgs.

Within a one-mile radius of this location, there were no iWATERS wells with recorded water depth information.

However, cathodic data associated with the Rosa Unit Nos. 204 (approximately 1,113 feet from pit), and 183 (approximately 1,178 feet from pit) both show depth to moisture between 80 and

200 feet (see Siting Criteria Map I for details).

#### References

Allen, Erin. Undated. Colorado Plateau Aquifers.

http://academic.emporia.edu/schulmem/hydro/TERM%20PROJECTS/2007/Allen/Aquifer.html.

New Mexico Energy, Minerals and Natural Resources Department, Division of Mining and Minerals. Database. 2009. Internet accessed February 2009.

New Mexico Office of the State Engineer. 2009. iWaters database. Internet accessed April 2009.

New Mexico WQCC. 2005. State of New Mexico Water Quality Act and the Water Control Commission Regulations.

United States Department of Agriculture, Forest Service. 2008. Final Environmental Impact Statement for Surface Management of Gas Leasing and Development. Jicarilla Ranger District, Carson National Forest, Rio Arriba County, New Mexico.

United States Department of the Interior. Bureau of Land Management. 2003. Final Farmington Resource Management Plan and Final Environmental Impact Statement. Farmington Field Office, Farmington, New Mexico.

United States Geological Survey. 2001. Ground Water Atlas of the United States: Arizona, Colorado, New Mexico and Utah. USGS Publication HA 730-C; http://capp.water.usgs.gov.

Page 8 of 19 Rosa Unit 183C

## New Mexico Office of the State Engineer POD Reports and Downloads

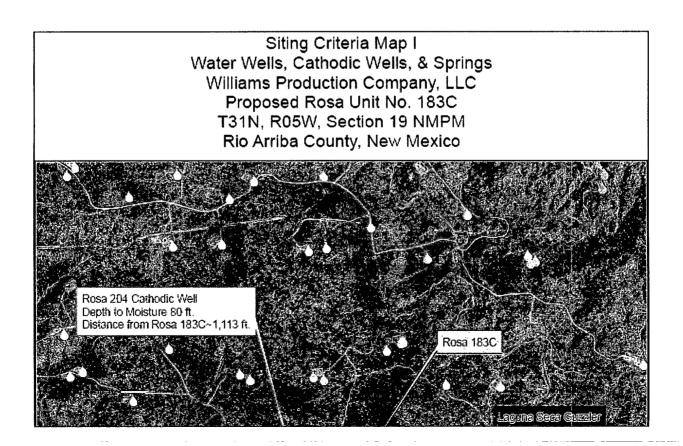
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	POD /	Surface Da	ata Repo	rtAvg Dep	oth to Water	r Report	Water Co	olumn Rep	oort		
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s.			WATE	R COLUMN	REPORT 0	2/20/20	009				
	(quarter	s are 1=1	W 2=NE	3=SW 4=S	SE)						
		s are big					Depth	Depth	Water	(in	feet)
POD Number	Tws	Rng Sec	рррр	Zone	х	Y	Well	Water	Column		
SJ 03685 POD1	31N	06W 07	1 2 4				460	310	150		
SJ 00011	31N	06W 32					183C				

Record Count: 2

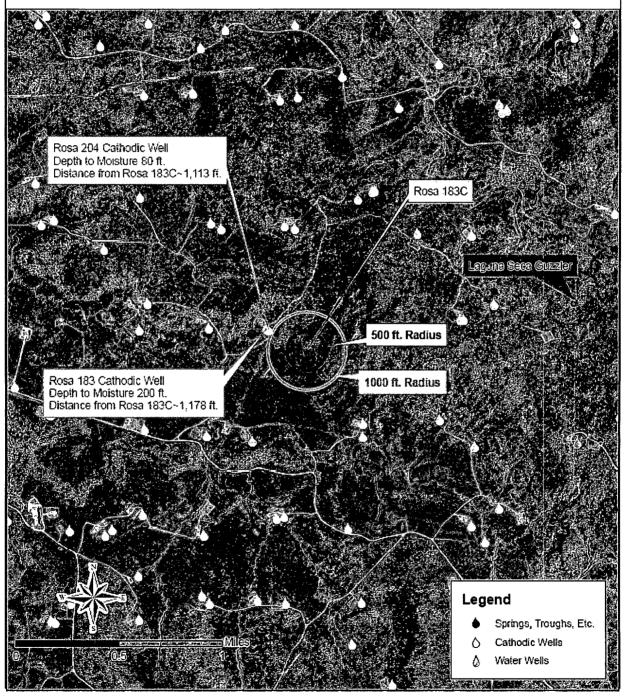
## New Mexico Office of the State Engineer POD Reports and Downloads

Township: 31N Range: 05W Sections:
NAD27 X: Y: Zone: Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) O Non-Domestic O Domestic All
POD / Surface Data ReportAvg Depth to Water ReportWater Column Report
WATER COLUMN REPORT 02/20/2009
(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 Well Water Column

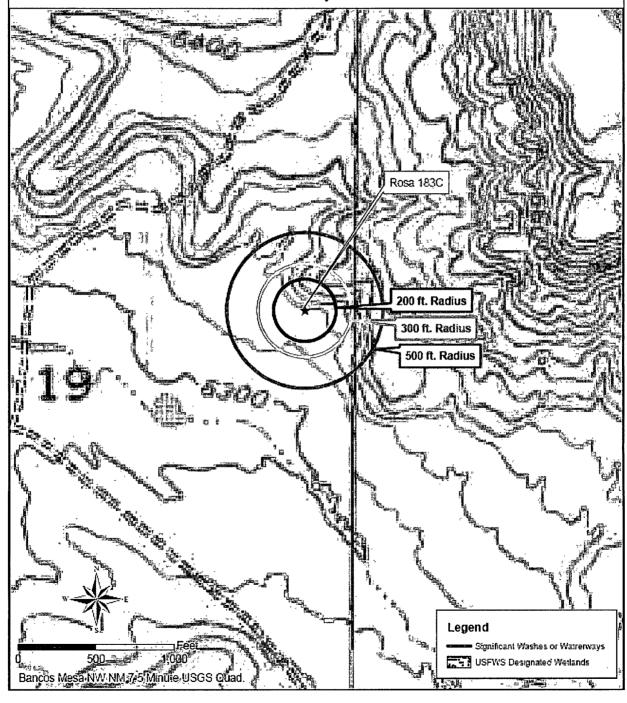
No Records found, try again



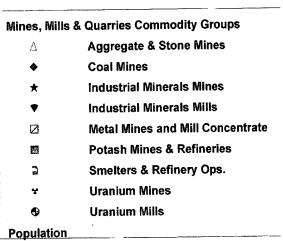
Siting Criteria Map I
Water Wells, Cathodic Wells, & Springs
Williams Production Company, LLC
Proposed Rosa Unit No. 183C
T31N, R05W, Section 19 NMPM
Rio Arriba County, New Mexico

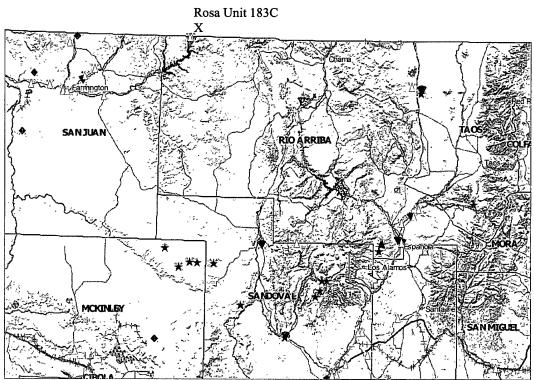


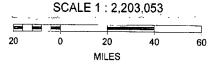
Siting Criteria Map II
Topographic Features
Williams Production Company, LLC
Rosa Unit No. 183C
T31N, R05W, Section 19 NMPM
Rio Arriba County, New Mexico



# MMQonline Public Version







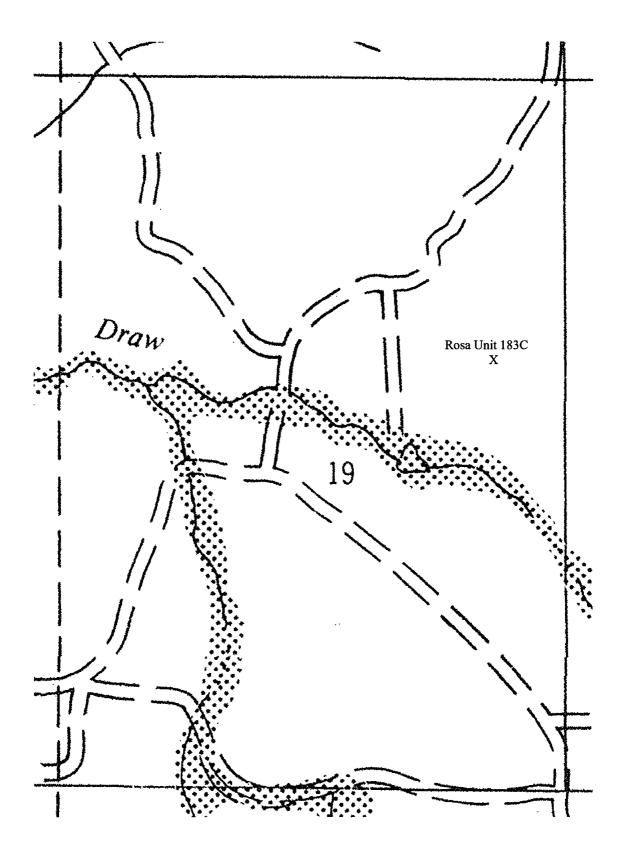


### FEMA Map - 100-Year Floodplain:

According to FEMA records, this site is not located in a 100-year floodplain (see attached FEMA map).

### **Siting Criteria Compliance Demonstrations:**

The Rosa Unit #183C well is not located in an unstable area. The location is not situated over a mine or a steep slope. Excavated pit material will not be located within 300 feet of a continuously flowing water course or within 200 feet of any other significant water course, lakebed, sinkhole, or playa lake (see Siting Criteria Map II). The site is not within 500 feet of any reported riparian areas or wetlands (see attached USFWS wetland map); within 500 feet of any private, domestic fresh water well or spring; or within 1000 feet of any other fresh water well or spring (see Siting Criteria Map I). The proposed pit will not be within any incorporated municipal boundaries or defined municipal freshwater well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. The location of the proposed pit is not within 300 feet of any permanent residence, school, hospital, institution, or church.



### Williams Production Co., LLC San Juan Basin: New Mexico Assets

Temporary Pit In-place (50-100 ft to Groundwater) Closure Plan Drilling/Completion and Workover

In accordance with Rule 19.15.17.13 NMAC, the following plan describes the general in-place closure requirements of temporary pits on Williams Production Co, LLC (WPX) locations in the San Juan Basin of New Mexico. This is WPX's standard procedure for all temporary pits to be utilized for the drilling, completion and/or workovers of oil and gas wells operated by WPX. For those temporary pits which do not conform to this standard closure plan, a separate well/pit specific closure plan will be developed and utilized.

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

- Details on Capping and Covering, where applicable
- Plot Plan (Pit Diagram)
- Inspection reports
- Sampling Results
- Division Form C-105: WELL COMPLETION OR RECOMPLETION REPORT AND LOG
- Copy of Deed Notice filed with the County Clerk (format to meet County requirements)

### General Plan Requirements:

- 1. All free standing liquids will be removed from the pit at the start of the closure process. Liquids will be removed in a manner that the appropriate District Office approves including; recycled, reused, reclaimed, evaporated, and/or disposed of in a Division-approved facility. Once all free liquids are removed, the sludge will be stabilized by one of the following methods depending on equipment availability: blending with clean stockpiled soils or dewatering using a Bowl Decanter Centrifuge then blending with clean stockpiles soils.
- 2. The preferred method of closure for all temporary pits will be on-site closure by in-place burial, provided all the criteria in 19.15.17.13.B are met.
- 3. The surface owner shall be notified of WPX's proposed closure plan using a means that provides proof of notice (i.e. certified mail/return receipt requested)
- 4. Within six months of the "rig-off" status occurring WPX will ensure that the temporary pit is covered, recontoured and reseeding in progress.
- 5. Notice of Closure will be given to the Aztec District office between 72 hours and one week of the scheduled closure via email or phone. The notification of closure will include the following:
  - a. Operators Name (WPX)
  - b. Well Name and API Number
  - c. Location (USTR)
- 6. The pit liner shall be removed above "mud level" after stabilization. Removal of the liner will consist of manually or mechanically cutting the liner at the mud level and removing all remaining liner. Care will be taken to remove "all" of the liner (I.e. anchored material). All excessive liner will be disposed of at a licensed disposal facility (probably San Juan Regional Landfill operated by Waste Management under NMED Permit SWM-052426).
- 7. The shallow surface soils of the unlined flare/cavitation pit will be scrapped and placed in the lined pit. A five-point composite sample will be taken of the pit using sampling tools and all samples tested per 19.15.17.13(B)(1)(b) NMAC. In the event that the criteria are not met (See Table 1), a release will be reported to NMOCD in compliance with Rule 116 and additional soil removal will be done until closure criteria are met.
- 8. Solidification of the remaining pit contents shall be achieved by mixing non-waste containing, earthen material. The solidification process will be accomplished use a combination of natural drying and mechanical mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed safe and stable. The mixing ratio shall not exceed 3 parts non-waste to 1 part pit contents.

9. A five-point composite sample will be taken of the pit using sampling tools and all samples tested per 19.15.17.13(B)(1)(b) NMAC. In the event that the criteria are not met (See Table 1), all contents will be handled per 19.15.17.13(B)(1)(a) (i.e. dig and haul to a Division-approved facility). Approval to haul will be requested of the Aztec District office prior to initiation.

Table 1: Closure Criteria for Temporary Pits in Non-sensitive Areas with Groundwater Between 50-100 bgs.

Components	Testing Methods	Closure Limits (mg/Kg)
Benzene	EPA SW-846 Method 8021B or 8260B	0.2
BTEX	EPA SW-846 Method 8021B or 8260B	50
TPH	EPA SW-846 Method 8015 M(Full Range)* or	2500
	Method 418.1	
GRO/DRO	EPA SW-846 Method 8015M (GRO/DRO)	500
Chlorides	EPA SW-846 Method 300.1	500

<sup>\*</sup> Preferred method

- 10. Upon completion of solidification and testing, the pit area will be backfilled with non-waste earthen material compacted to native conditions to enable effective revegetation for successful evapotranspiration. A minimum of four feet of cover including replacement of one foot of suitable material to establish vegetation, or the background thickness of topsoil, whichever is greater.
- 11. Following cover, the site will be recontoured to meet the Surface Management Agency or surface owner requirements. Re-contouring will attempt to match fit, shape, line form, and texture of the surrounding geography. Re-shaping will include drainage control, prevent ponding, and minimize erosion. Natural drainages will be unimpeded and stormwater Best Management Practices (BMPs) will be used to aid in soil stabilization and protection surface water quality.
- 12. Notification will be sent to the Aztec District office when the reclaimed area is seeded.
- 13. WPX shall seed the disturbed areas the first growing season after the pit is covered. Seeding will be accomplished via drilling on the contour whenever practical, or by other Division-approved methods. 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 maintained that cover through two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs. Note: WPX assumes the seeding stipulations including mix and seeding methods specified by the Surface Management Agency (BLM, BOR, USFS, Tribal, etc.) or Land owner as part of a surface use agreement or APD are Division-approved methods unless notified by the Division of their unacceptability.
- 14. 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 on site burial upon the abandonment of all 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 on site 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 operations information at the time of all wells on the pad abandoned. The information will include Operator Name, Lease Name, Well Name, and number, USTR, and an indicator that the marker is an onsite pit burial location.

### Williams Production Co., LLC San Juan Basin: New Mexico Assets

Temporary Pit Design and Construction Plan Drilling/Completion and Workover

In accordance with Rule 19.15.17 NMAC, the following plan describes the general design and construction (D&C) of temporary pits on Williams Production Co, LLC (WPX) locations in the San Juan Basin of New Mexico. This is WPX's standard procedure for all temporary pits to be utilized for the drilling, completion and/or workover of oil and gas wells operated by WPX. For those temporary pits which do not conform to this standard plan, a separate well specific D&C plan will be developed and utilized.

### General Plan Requirements:

- WPX will design and construct a temporary pit to contain liquids and solids associated with drilling, completion and workover of oil and gas wells which will prevent contamination of fresh water resources and protect public health and the environment.
- 2. Prior to excavation of the pit, topsoil will be stripped and stockpiled within the construction zone for later use during restoration.
- 3. WPX will post a well sign, not less than 12" by 24", on the well site prior to construction of the temporary pit. This sign will list the operator on record, the location of the well site by unit letter/section/township/range, and emergency telephone number(s).
- 4. WPX 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 will be installed every 12 feet and corners shall be anchored utilizing a secondary T-post or similar bracing. Temporary pits will be fenced at all times excluding drilling/completion and/or workover operations when the rig is present on site, at which time the "front" side of the fence will be temporarily removed for operational purposes.
- 5. WPX shall construction the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to meet manufacturers' specifications and potential liner failure.
- 6. WPX shall construct the pit so that the slopes are no steeper than two horizontal to one vertical. Where steeper slopes are required due to surface owner and right-a-way restriction, an engineers certification of stability will be provided with the well pit application.
- 7. Pit well will be walked down by a crawler type tractor following construction and prior to liner installation.
- 8. All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.
- Geotextile will be installed beneath the liner when rocks, debris, sharp objects or irregularities can not be avoided.
- 10. All liners will be anchored in the bottom of a compacted earth-filled trench consistent with manufacturer's specifications and at least 18 inches deep.
- 11. WPX will minimize liner seams and orient them up and down, not across slope faces. Factory seams will be used whenever possible. Field seams will be overlapped per manufacturers' specifications. WPX 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 (secondary liner placed over the primary liner), and/or a manifold system.
- 13. The pit shall be protected from run-on by construction of diversion ditches around the location or around the perimeter of the pit in as necessary.
- 15. The volume of the pit shall not exceed 10 acre-feet, including freeboard
- 16. Temporary blow pits will be constructed to allow gravity flow to discharge into the lined reserve pit.
- 17. Only the upper portion of the blow pit will be unlined as allowed in the Rule 19.15.17.11.F(11) NMAC.
- 18. WPX will modify this design if field and/or operating conditions do not effectively allow drainage of the blow pit and freestanding liquids pose a potential concern.

### Williams Production Co., LLC San Juan Basin: New Mexico Assets

Temporary Pit Maintenance & Operating Plan Drilling/Completion and Workover

In accordance with Rule 19.15.17 NMAC, the following plan describes the general operations and maintenance (O&M)of temporary pits on Williams Production Co, LLC (WPX) locations in the San Juan Basin of New Mexico. This is WPX's standard procedure for all temporary pits to be utilized for the drilling, completion and/or workover of oil and gas wells operated by WPX. For those temporary pits which do not conform to this standard O&M plan, a separate well specific O&M plan will be developed and utilized.

### General Plan Requirements:

- WPX will operate and maintain a temporary pit to contain liquids and solids associated with drilling, completion and workover of oil and gas wells which will prevent contamination of fresh water resources and protect public health and the environment.
- 2. WPX will to the extent practical conserve drilling fluids for reuse by transferring liquids to pits ahead of the rigs. All other fluids will be disposed by evaporation or transport to Basin Disposal, Inc in Bloomfield, New Mexico (Permit # NM-01-005).
- 3. WPX shall maintain at least two (2) feet of vertical freeboard for a temporary pit.
- 4. WPX shall remove all free liquids from a temporary pit within 30 days from the date the drilling or workover rig is released.
- Only fluids and solids generated during the drilling/completion/workover process may be discharged into a temporary pit. Other miscellaneous soild waste or debris will not be allowed.
- 6. WPX will not discharge or store any hazardous waste as defined under RCRA 40CFR 261 and 19.15.1.7.W(3) NMA in any temporary pit.
- 7. If any pit liner's integrity is compromised, or if any penetration of the liner occurs:
  - a. Above the liquid's surface, WPX shall repair the damage or replace the liner as necessary.
     WPX will notify the NMOCD Aztec District Office by phone or email within 48-hours of discovery.
  - b. Leak below the liquid's surface, WPX shall suspend operations, remove all liquids above the damaged liner within 48 hours, and repair the damage or replace the liner. WPX will notify and report to NMOCD as follows:
    - If the release is less than 25 bbls, the Aztec District Office by phone or email within 48hours of discovery and repair.
    - ii. If the release is suspected to be greater than 25 bbls, the Aztec District Office and the Environmental Bureau Chief by phone for immediate verbal notification pursuant to 19.15.3.116.B (1)(d).
  - c. Written Spill/Release reports will be submitted on Form C-141 per 19.15.3.116.C NMAC within 15 days to the Aztec District Office.
- 8. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides (secondary liner placed over the primary liner), and/or a manifold system.
- 9. Diversion ditches, around the location or around the perimeter of the pit, shall be maintained as protection from run-on.
- 10. WPX shall immediately remove any visible layer of oil from the surface of a temporary pit following cessation of drilling/completion/workover operations. Oil absorbent booms will be utilized to contain and remove oil. An oil absorbent boom will stored on-site until the pit is covered.
- 11. WPX will inspect the temporary pits as follows to ensure compliance with this plan:
  - Daily during drilling or workover operations. Inspections will be included with the IADC reports.
  - b. Weekly as long as liquids remain in the pit. Electronic copies of the inspections will be kept at the WPX San Juan Basin office.
  - c. Copies of the inspections will be filed with the NMOCD Aztec District office upon pit closure.
- 12. WPX shall remove all free liquids from a blow/flare (cavitation) pit within 48 hours after completing operations. WPX may request additional time to remove liquids from the Aztec District office if it is not feasible to meet the 48 hour requirement.

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