

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
122Q 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.

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

12131
21-20593

- 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: Whiting Oil & Gas Corp OGRID #: 25078 **OIL CONS. DIV DIST. 3**
Address: 400 W. Illinois, Suite 1300, Midland, Texas 79701
Facility or well name: Four Way 2031 #4-1 **AUG 08 2014**
API Number: 30-021-20593 OCD Permit Number: _____
U/L or Qtr/Qtr K Section 4 Township 20-N Range 31-E County: Harding
Center of Proposed Design: Latitude 35.99156878 Longitude -103.65403697 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 20 mil LLDPE HDPE PVC Other _____
 String-Reinforced
Liner Seams: Welded Factory Other _____ Volume: 4,000 bbl Dimensions: L 75' x W 75' x D 4'

3.
 Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: _____ bbl Type of fluid: _____
Tank Construction material: _____
 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 _____

44

6.

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)

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.

Variations 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)

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

Yes No

Within the area overlying a subsurface mine. (Does not apply to below grade tanks)

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

Yes No

Within an unstable area. (Does not apply to below grade tanks)

- 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. (Does not apply to below grade tanks) - FEMA map

Yes No

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). - Topographic map; Visual inspection (certification) of the proposed site

Yes No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Yes No

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.)

- Topographic map; Visual inspection (certification) of the proposed site

Yes No

Within 300 feet from a occupied 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 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.

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Yes No

Within 100 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

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

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).

- Topographic map; Visual inspection (certification) of the proposed site

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

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.

- 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 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" 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.*

- 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:**

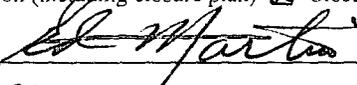
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

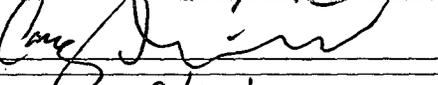
Name (Print): Robert McNaughton Title: Sr. Operations Engineer

Signature:  Date: 11-15-13

e-mail address: Robert.McNaughton@whiting.com Telephone: 432-413-2989

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

OCD Representative Signature:  Approval Date: 12/16/2013

Title: ~~DISTRICT SUPERVISOR~~ 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: 5/12/2014

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.

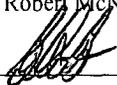
21. **Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

- 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

Operator Closure Certification:

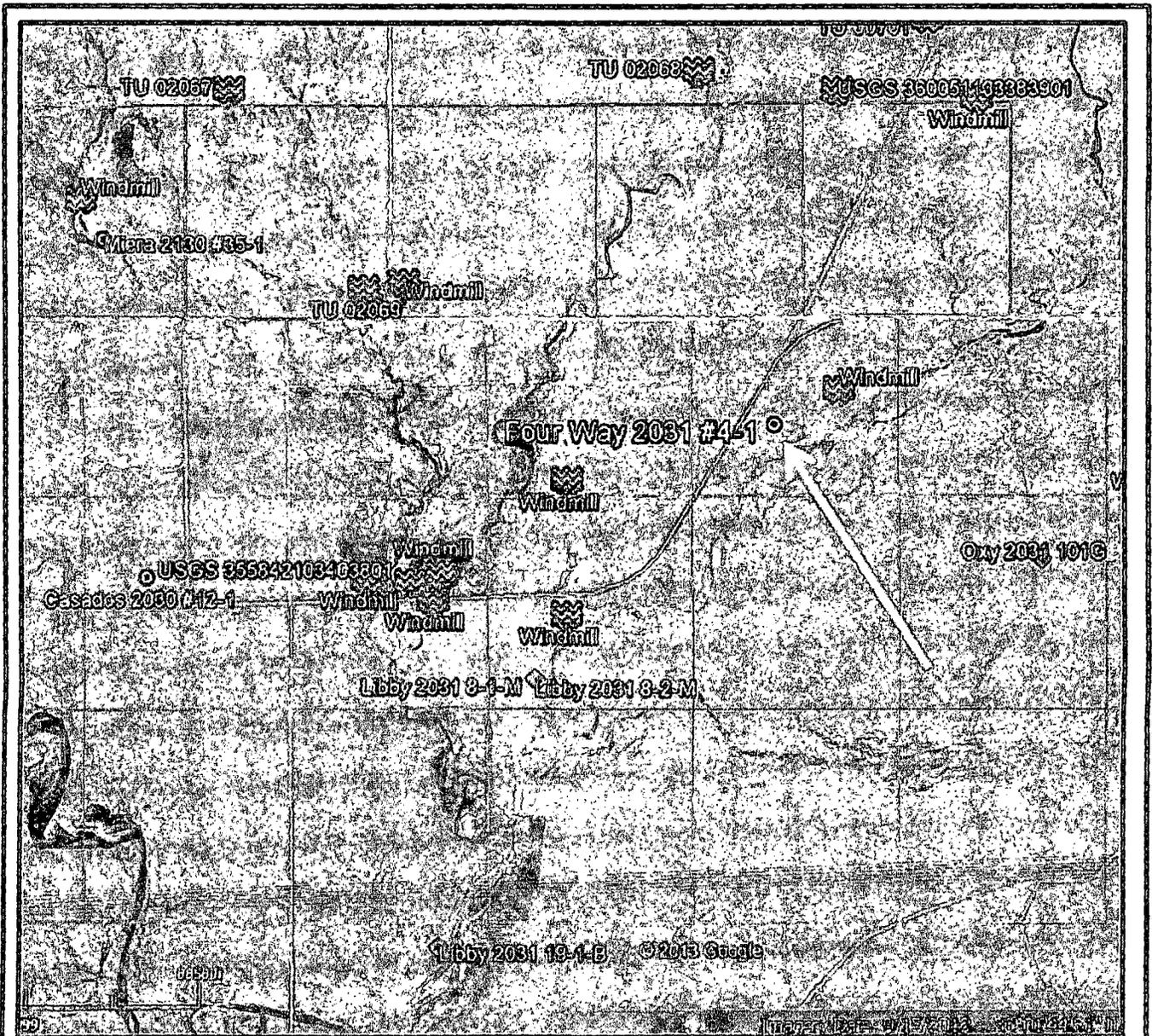
I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Robert McNaughton Title: Sr Operations Engineer

Signature:  Date: 05/12/2014

e-mail address: Robert.McNaughton@whiting.com Telephone: 432-413-2989

Four Way 2031 #4-1



Location Photo #1

Whiting Petroleum Corporation

Four Way 2031 #4-1

T-20-N, R-31-E, Section 4 NMPM

Harding County, New Mexico

Four Way 2031 #4-1

Surface Hydrology:

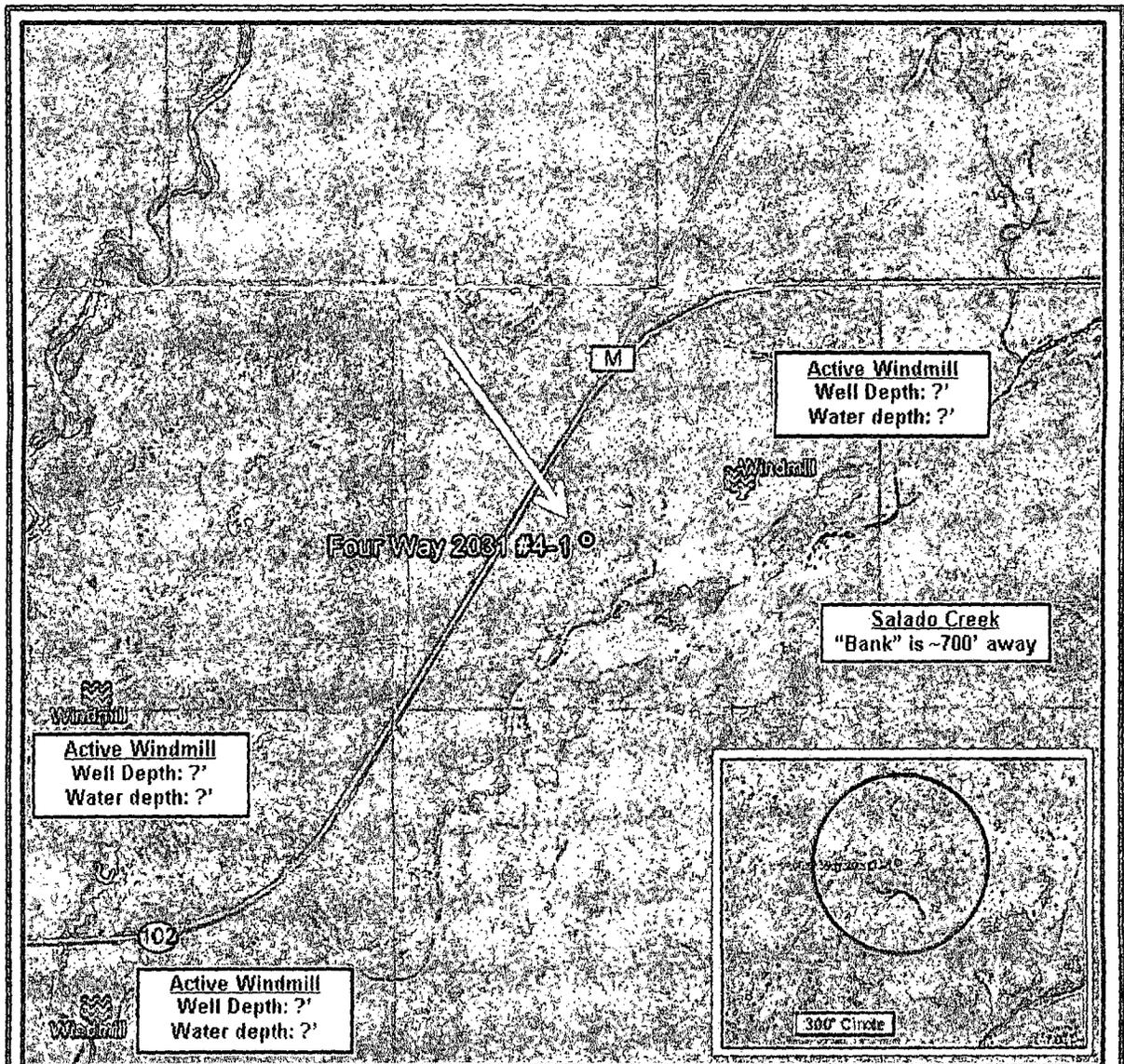
The local surface drainage is controlled by gravel alluvium and a gentle regional dip to the south east. Runoff from the location will flow southeast towards the intermittent Salado creek. Aerial photos indicate that the reserve pit will be greater than 300 feet from any significant waterways or surface water (see Location Photos 1 and 2).

Ground Water Hydrology:

The High Plains aquifer extends westward into eastern Harding County, but in the proposed project region there is no principal aquifer. Aquifers do not exist here, yield too little water for water wells to be significant and yield insufficient water to supply local requirements. When present, they are not extensive enough to be classified as major aquifers.

Sources:

New Mexico Office of the State Engineer. 2011. Waters/ NMRRWS data base
http://www.ose.state.nm.us/water_info_data.html.



Location Photo #2

Four Way 2031 #4-1

Offset Fresh Water Wells, Houses, Municipalities

Siting Criteria and Compliance Demonstrations

1. Depth to groundwater (should not be less than 50 feet):

Depth to groundwater is unknown at this exact location, but may be between 50' to 100' in the area. An active windmill located about 1750' ESE from the well location, but there are no records for it. The nearest well with water-depth information is approximately 1.6 miles from the location (see Location Photo 1, above). These wells were identified from OSE and USGS records (see Air Photo 1) and are listed below:

<u>Well</u>	<u>Distance/Direction from Proposed Project Area</u>	<u>Depth of Well</u>	<u>Depth to Water</u>
USGS 360051103383901	~1.6 miles NE	?'	51'
TU 02069	~2.1 miles NW	100'	?

Sources:

New Mexico Office of the State Engineer. 2011. Waters/ NMRRWS data base
http://www.ose.state.nm.us/water_info_data.html.

2. Distance to watercourse (should not be within 300 feet of a continuously flowing watercourse or 200' feet of any other significant watercourse or lakebed, sinkhole, or playa lake):

Aerial photos and a visit to the location indicate that there are no lakebeds, sinkholes, playa lakes, or watercourses within 300 feet of the proposed pit/system - ~700' to dry creek (**Location Photo 2 – inset detail**).

3. Distance to buildings (should not be within 300 feet of any permanent buildings):

Aerial photos and a site visit indicate that the pit will not be within 300 feet of any of these locations (see **Location Photo 2**).

4. Distance to springs or wells (should not be within 500 feet of a private, domestic fresh water well or spring used by less than five (5) households or within 1000 feet of any other fresh water well or spring):

Air photos indicate the pit will not be within 1000 feet of any recorded well or spring (see **Location Photo 1 & 2**).

5. Presence within incorporated area (should not be within incorporated municipal boundaries or within defined municipal fresh water well field covered under municipal ordinance):

The aerial photo and a site visit indicate the pit will not be within an incorporated area or municipal fresh water well field (see **Location Photo 1 & 2**).

6. Distance to wetlands (should not be within 500 feet):

The aerial photo and a site visit indicate that the location is not within 500 feet of a wetland.

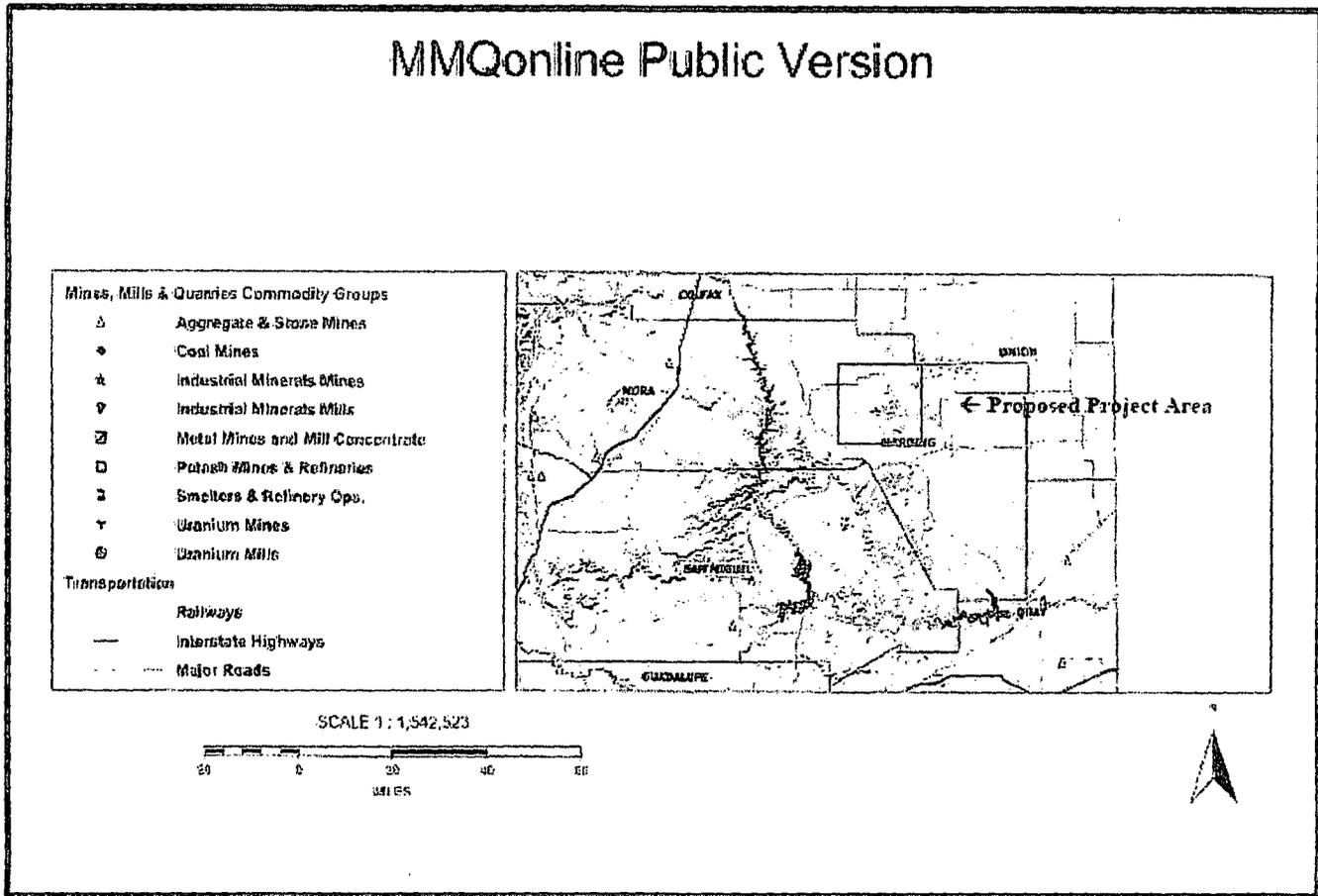
7. Location above subsurface mine (should not overlie a subsurface mine):

The pit will not overlie a mine. The 2009 Mines, Mills, and Quarries map, an aerial photo and a site survey indicate that there are no subsurface mines in the area.

8. Presence within unstable area (should not be within an unstable area):

A topographic map and aerial photo indicate the location will not be within an unstable area. The location will be on a gentle slope (see **Location Photo 2**).

MINES, MILLS, AND QUARRIES IN NEW MEXICO



Sources:

New Mexico Energy, Minerals and Natural Resources Department, Division of Mining and Minerals. Database. 2008.

<http://www.emnrd.state.nm.us/MMD/MRRS/MinesMillsQuarriesWebMap.htm>.
Accessed March 2009.

NMOCD drilling applications for offset and regional wells, primarily recent wells drilled by Hess in the west Bravo Dome Unit. Also reviewed recent applications for OXY wells in the Bravo Dome CO2 unit to the east. There are no records of any subsurface mines or deep aggregate mines within the project area.

FEMA ISSUED FLOOD MAPS

9. Presence within floodplain (should not be within a 100-year floodplain):

The location (Harding County, NM) has not been mapped by FEMA. However, aerial photos and offset drilling permits indicate that the location is not within a floodplain. It is located on a gently sloping plain adjacent to a wide ravine (Salado Creek) that is subject to brief flash-flooding from infrequent rains. The location was carefully chosen to avoid weak soils and buried gravel deposits, and should not have any near or long term stability issues.

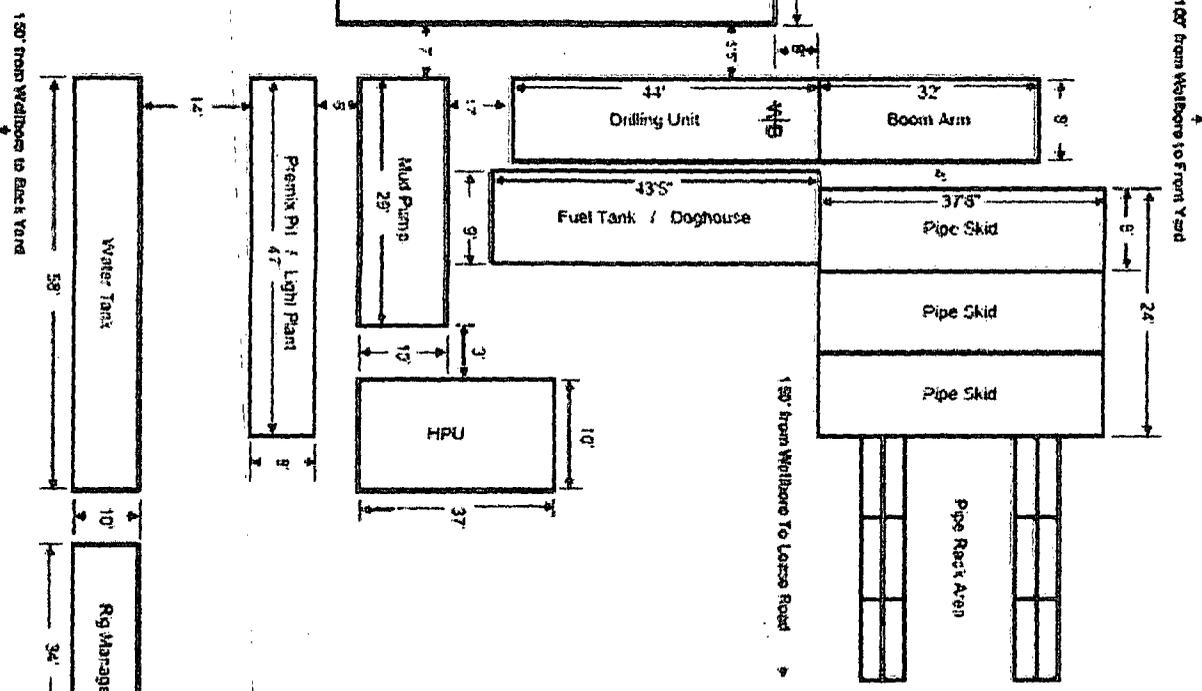
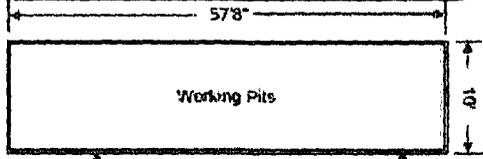
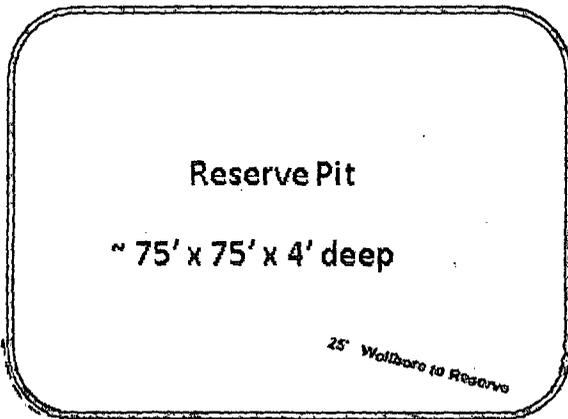
Temporary Drilling Pit - Design Plan

(Based on Appropriate Requirements of 19.15.17.11 NMAC)

Design and construction specifications for this temporary pit are as follows:

- Prior to constructing the pit, topsoil will be stripped and stockpiled for use as final cover or fill at the time of closure.
- An upright sign (at least 12" x 24" with lettering at least 2" in height) will be placed conspicuously on the fence surrounding the pit, or will use a well sign (complying with 19.15.3.103 NMAC). The sign will be posted in a manner and location such that the legend can be easily read, and will contain the following information: operator's name, legal location (quarter-quarter or unit letter, section, township, and range), and emergency telephone number(s).
- The pit will be fenced or enclosed in a manner that prevents unauthorized access. The fence will be at least four (4) foot in height with at least four (4) strands of barbed wire evenly spaced between the top and bottom. Fences will be maintained in good repair. During drilling or workover operations, three (3) sides of the pit will be fenced; the side adjacent to the drilling or workover rig will remain open only during such operations.
- The pit will be designed and constructed to ensure the confinement of liquids.
- The pit will be constructed with a properly constructed foundation and interior slopes consisting of a firm, unyielding base. The pit will be smooth and free of rocks, debris, sharp edges, or irregularities to prevent the liner's rupture or tearing. Slopes will be no steeper than two (2) horizontal feet to one (1) vertical foot (2H:1V).
- The pit will have a geo-membrane liner with 20-mil string-reinforced LLDPE or its equivalent (approved by the division district office). This liner will be composed of an impervious, synthetic material resistant to petroleum hydrocarbons, salts, and acidic and alkaline solutions. The liner will be resistant to ultraviolet light. The liner will comply with EPA SW-846 method 9090A.
- Qualified personnel will perform field seaming. Liner seams will be minimized, particularly in corners and irregularly shaped areas. Field liner seams will be welded. Factory-welded seams will be used where possible. Prior to field seaming, liners will be overlapped four (4) to six (6) inches and will be oriented parallel to the line of maximum slope (along, not across, the slope).
- Construction will avoid excessive stress-strain on the liner. Geotextile will be used under the liner where needed to reduce localized stress-strain or protuberances that may compromise the liner's integrity. The edges of all liners will be anchored in the bottom of a compacted, earth-filled trench that is at least 18" deep.
- The liner will be protected from any fluid force or mechanical damage at any point of discharge into or suction from the pit. A berm, ditch, proper sloping, or other diversion will be constructed around the pit to prevent run-on of surface water. During drilled operations, the edge of the pit adjacent to the drilling or workover rig may not have protection if the pit is being used to collect liquids escaping from the rig and run-on will not result in a breach of the pit.
- The volume of the pit will not exceed 5,000 Bbls, including freeboard.

Trinidad #211 Drilling Rig



~265'

~250'

Rig and Location Diagram

Temporary Drilling Pit - Operating & Maintenance Plan

(Based on Appropriate Requirements of 19.15.17.12 NMAC)

Operating and maintenance specifications for this temporary pit are as follows:

- The pit will be maintained to contain liquids and solids, prevent contamination of fresh water, and protect public health of the environment.
- All drilling fluids will be recycled, reused, reclaimed, or disposed of in a manner approved by division rules and that prevents contamination of fresh water and protects public health and the environment.
- Hazardous waste will not be discharged into or stored in the pit.
- If the pit liner's integrity is compromised or if penetration of the liner occurs above the liquid's surface, the appropriate division district office will be notified within 48 hours of the discovery, and the liner will be repaired or replaced.
- If the pit develops a leak or if any penetration of the liner occurs below the liquid's surface, all liquid above the leak line will be removed within 48 hours, the appropriate division district office will be notified within 48 hours, and the liner will be repaired or replaced.
- The injection or withdrawal of liquids from the pit will be accomplished via a header, diverter, or other hardware that prevents damage to the liner by erosion, fluid jets, or impact from installation and removal of hoses or pipes.
- Pit operation will prevent the collection of surface water run-on.
- An oil-absorbent boom or other device will be installed and maintained onsite to contain and remove oil from the pit's surface.
- Only fluids used or generated during drilling or workover processes will be discharged into the pit. The pit will remain free of miscellaneous solid waste or debris. A tank made of steel or other division district office-approved material will be used to contain hydrocarbon-based drilling fluids. Immediately after cessation of a drilling or workover operation, any visibly or measurable layer of oil will be removed from the surface of the pit.
- At least two (2) feet of freeboard will be maintained.
- The pit will be inspected at least once daily while the drilling or workover rig is onsite. Thereafter, the pit will be inspected weekly as long as liquids remain within it. An inspection log will be maintained and made available to the division district office upon request. A copy of the log will be filed with the division district office at the time of pit closure.
- All free liquids will be removed from the pit within 30 days from release of the drilling or workover rig. On form C-105 or C-103, the date of the drilling or workover rig's release will be noted. If necessary, an extension of up to three (3) months may be requested from the division district office; this extension may or may not be granted.

Temporary Drilling Pit – Closure Plan

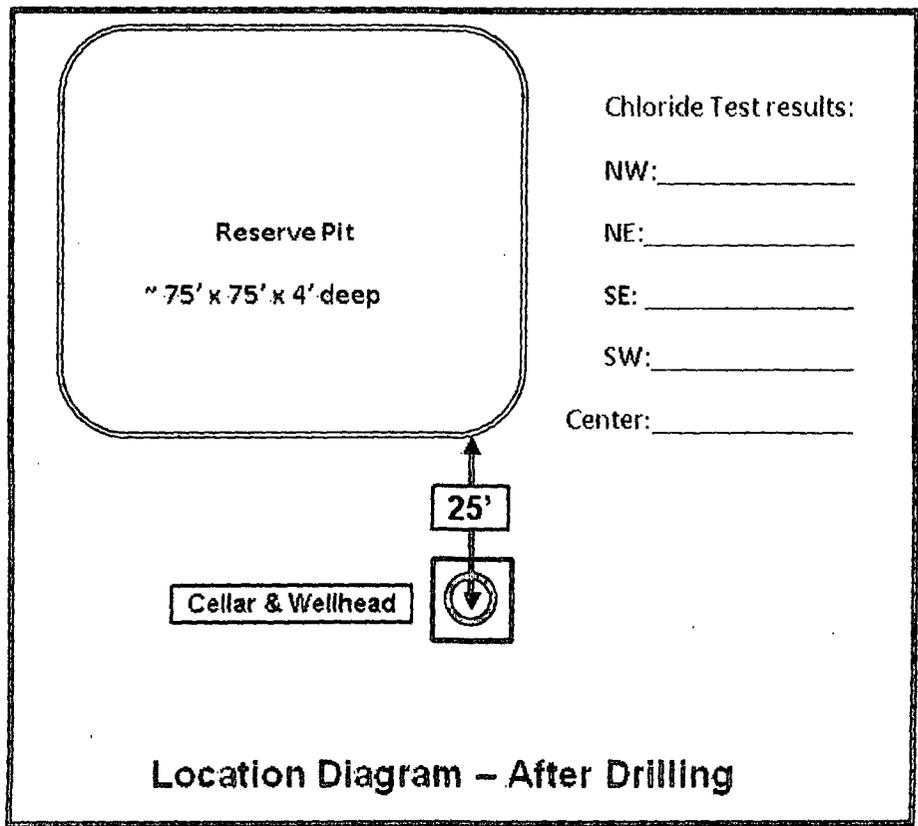
(Based on Appropriate Requirements of Subsection C, 19.15.17.9 NMAC & 19.15.17.13 NMAC)

Closure specifications for this temporary pit are as follows:

- 1) The pit will be closed within six (6) months from the date that the drilling or workover rig is released. If necessary, the division district office may grant an extension not to exceed three (3) months.
- 2) All liquids from the pit will be removed prior to closure. Liquids will be disposed of at the Sundance Services, Inc. Parabo Disposal Facility (Permit No. 010003), unless they are recycled, reused, or reclaimed in a division district office-approved manner.
- 3) All contents, including synthetic pit liners, will be buried in place.
- 4) The soils around the pit will be tested to determine whether a release occurred. A five-point composite sample will be collected. In addition, grab samples will be gathered from any area that is wet, discolored, or showing evidence of a release. The samples will be sent to an approved laboratory and analyzed for benzene, total BTEX, TPH, the GRO and DRO combined fraction, and chlorides. Assuming groundwater could be encountered at a depth of between 51' to 100', the following limits should not be exceeded:
 - **Chlorides** (determined by EPA method 300.1): **40,000 mg/kg** or background concentration, whichever is greater.
 - **TPH** (EPA SW-846 method 418.a or other division-approved EPA method): **2500 mg/kg**.
 - **GRO and DRO** combined fraction (EPA SW-846 method 8015M): **1000 mg/kg**.
 - **BTEX** (EPA SW-846 method 8021B or 8260B or other approved EPA method): **50 mg/kg**
 - **Benzene** (EPA SW-846 method 8021B or 8260B or other approved EPA method): **10 mg/kg**
- 5) The division will be notified of the results on form C-141, at which point the division may require additional delineation.
- 6) If it is determined that a release has occurred, Whiting will comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.
- 7) If it is determined that a release has not occurred, or that any release doesn't exceed the above-specified concentrations, the pit will be covered with compacted, non-waste-containing, earthen material. A division-prescribed soil cover will be constructed and the site will be re-contoured and re-vegetated, per Subsections G, H, and I of 19.15.17.13 NMAC:
- 8) All areas associated with the pit that are no longer being used will be substantially restored to the condition that existed prior to oil and gas operations by placement of the soil cover (detailed below), re-contouring to match original contours and surrounding topography, and re-vegetating (detailed below).
- 9) If an alternative to the re-vegetation requirements is required to prevent erosion, protect fresh water, or protect human health and the environment, this alternative will be proposed to the surface owner. The proposed alternative, with written documentation demonstrating that the surface owner approves the alternative, will be submitted to the division for approval.
- 10) Soil cover will consist of the background thickness of topsoil or one (1) foot of material suitable for establishing vegetation at the site, whichever is greater.

Closure specifications for this temporary pit , continued:

- 11) Soil cover will be constructed to the site's existing grade and will prevent ponding of water and erosion of the cover material.
- 12) The first growing season following pit closure, all disturbed areas associated with the pit and no longer being used will be seeded or planted.
- 13) Seeding will be accomplished by drilling on the contour whenever practical, or by other division-approved methods. Vegetative cover equaling 70% of the native perennial vegetative cover (unimpacted by overgrazing, fire, or other damaging intrusion) will be obtained. This cover will consist of at least three (3) native plant species, including one (1) grass species but not including noxious weeds. That cover will be maintained through two (2) successive growing seasons, during which time no artificial irrigation will occur.
- 14) Seeding or planting will be repeated until the required vegetative cover is successfully achieved.
- 15) When conditions aren't favorable for the establishment of vegetation (such as during periods of drought), the division will be contacted for approval to delay seeding or planting, or for approval to use additional cultural techniques such as mulching, fertilizing, irrigating, fencing, etc.
- 16) The division will be notified when seeding or planting is completed, and when successful re-vegetation has been achieved.
- 17) Within 60 days of closure, completion, a closure report will be submitted on form C-144, with necessary attachments, to document closure activities, including sampling results, a plot plan, and backfilling details. In this closure report, Whiting will certify that all information in the report and attachments is correct and that Reliant has complied with all applicable closure requirements and conditions specified in the approved Closure Plan. A plat of the temporary pit location will be provided on form C-105.





November 15, 2013

Four Way Cattle Company
Brenda A. Daniels, Pres:
P.O. Box 125
Wagon Mound, NM 87752

RE: Notification to Surface Owner of On-Site Drilling Pit Closure Plan
Well: Four Way 2031 Well # 4-1
Harding County, NM

Please reference attached proposed on-site drilling pit closure plan. Whiting Oil & Gas proposes to close and remediate the surface land according to all rules and regulations noted in Subsection E of 19.15.17.13 NMAC within the approved time frame allotted by the NMOGA.

If you have any additional question please contact Kay Maddox @ 432.686.6709.

Sincerely,

Kay Maddox
Regulatory Supervisor

Mailed by certified mail to above listed party on this the 15th day of November, 2013

Signed: Kay Maddox- Regulatory Supervisor

*Whiting Petroleum Corporation
and its wholly owned subsidiary
Whiting Oil and Gas Corporation*

400 W. Illinois Avenue, Suite 1300, Midland, TX 79701 Office: 432.686.6700 Fax 432.686.6799

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720
District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720
District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
 August 1, 2011
 Permit 177126

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address WHITING OIL AND GAS CORPORATION 400 W. Illinois Midland, TX 79701		2. OGRID Number 25078
4. Property Code 40241		3. API Number 30-021-20593
5. Property Name FOUR WAY 2031		6. Well No. 041

7. Surface Location

UL - Lot K	Section 4	Township 20N	Range 31E	Lot Idn	Feet From 1650	N/S Line S	Feet From 1980	E/W Line W	County Harding
---------------	--------------	-----------------	--------------	---------	-------------------	---------------	-------------------	---------------	-------------------

8. Proposed Bottom Hole Location

UL - Lot K	Section 4	Township 20N	Range 31E	Lot Idn K	Feet From 1650	N/S Line S	Feet From 1980	E/W Line W	County Harding
---------------	--------------	-----------------	--------------	--------------	-------------------	---------------	-------------------	---------------	-------------------

9. Pool Information

WILDCAT,SANTA ROSA (GAS)	96305
--------------------------	-------

Additional Well Information

11. Work Type New Well	12. Well Type CO2	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 4596
16. Multiple N	17. Proposed Depth 1850	18. Formation Triassic Age Rocks-Undivided	19. Contractor	20. Spud Date 12/20/2013
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hcfe Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12.25	8.625	24	700	450	
Prod	7.875	5.5	15.5	1850	600	

Casing/Cement Program: Additional Comments

--

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	3000	REGAN TAURUS

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> , if applicable. Signature:	OIL CONSERVATION DIVISION	
	Printed Name: Electronically filed by Kay Maddox	Approved By: Ed Martin
	Title: Regulatory Agent	Title: District Supervisor
	Email Address: kay.maddox@whiting.com	Approved Date: 12/16/2013
Date: 12/9/2013	Phone: 432-686-6709	Conditions of Approval Attached

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

State of New Mexico

Form C-102

DISTRICT II
1801 W. Grand Avenue, Artesia, NM 88210

Energy, Minerals, and Natural Resources Department

Revised October 12, 2005

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

Submit to Appropriate District Office

State Lease - 4 copies

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87605

1220 South St. Francis Dr.
Santa Fe, New Mexico 87605

Fee Lease - 3 copies

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	³ Pool Code 96305	³ Pool Name WILDCAT; SANTA ROSA (GAS)
Property Code	⁵ Property Name FOUR WAY 2031	
⁷ OGRID No. 25078	⁶ Operator Name WHITING PETROLEUM CORPORATION	⁴ Well Number #4-1
		⁸ Elevation 4597'

Surface Location

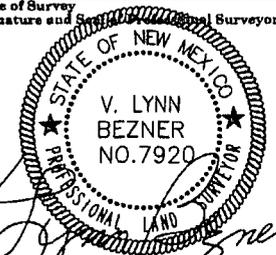
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	4	20 NORTH	31 EAST, N.M.P.M.		1650'	SOUTH	1980'	WEST	HARDING

Bottom Hole Location If Different From Surface

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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

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

X:699027 Y:1819508	X:704331 Y:1819524	<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well as this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Lynn Maddox</i> 12/9/13 Signature Date Lynn Maddox Printed Name</p>
NAD 27 NME ZONE X:701056 Y:1816845 LAT:35°59'29.52" LON:103°39'13.28"		<p>18 SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>NOVEMBER 12, 2013 Date of Survey Signature and Seal of Professional Surveyor</p> <div style="text-align: center;">  </div> <p>_____ V. Lynn Bezner P.S. #7920 Certificate Number</p>
1980'	1650'	
X:699106 Y:1815159	X:704387 Y:1815257	FILE:LO_FOUR_WAY_2031_4_1.J.J.C.

Submit 1 Copy To Appropriate District Office
 District I - (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II - (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III - (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV - (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

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

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-021-20593
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/>		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
2. Name of Operator WHITING OIL AND GAS CORPORATION		6. State Oil & Gas Lease No.
3. Address of Operator 400 W ILLINOIS STE 1300 MIDLAND, TEXAS 79701		7. Lease Name or Unit Agreement Name FOUR WAY 2031
4. Well Location Unit Letter K: 1650 feet from the SOUTH line and 1980 feet from the WEST line Section 4 Township 20N Range 31E NMPM COUTNY: HARDING		8. Well Number 4-1
11. Elevation (Show whether DR, RKB, RT, GR, etc.) GR 4600'		9. OGRID Number 25078
		10. Pool name or Wildcat WILDCAT; SANTA ROSA (GAS)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO: PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPL <input type="checkbox"/> DOWNHOLE COMMINGLE <input type="checkbox"/> CLOSED-LOOP SYSTEM <input type="checkbox"/> OTHER: <input type="checkbox"/>		SUBSEQUENT REPORT OF: REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> COMMENCE DRILLING OPNS. <input type="checkbox"/> P AND A <input type="checkbox"/> CASING/CEMENT JOB <input checked="" type="checkbox"/> OTHER: <input type="checkbox"/>	
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

02/03/2014 - SPUD WELL
 02/04/2014 - SET 8 5/8 J-55 24# CSG @ 717' W/450 SXS CMT, CMT CIRCULATED
 02/06/2014 - SET 5 1/2 J-55 15.5# CSG @ 1365' W/300 SXS CMT, DID NOT CIRCULATE CMT
 02/06/2014 - RIG DOWN - MOVED OFF

Spud Date: Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Kay Maddox TITLE: REGULATORY ANALYST DATE 02/10/2014
 Type or print name Kay Maddox E-mail address: kay.maddox@whiting.com PHONE: 432-686-6709
For State Use Only
 APPROVED BY: Ed Martin TITLE: **DISTRICT SUPERVISOR** DATE 2/13/2014
 Conditions of Approval (if any):



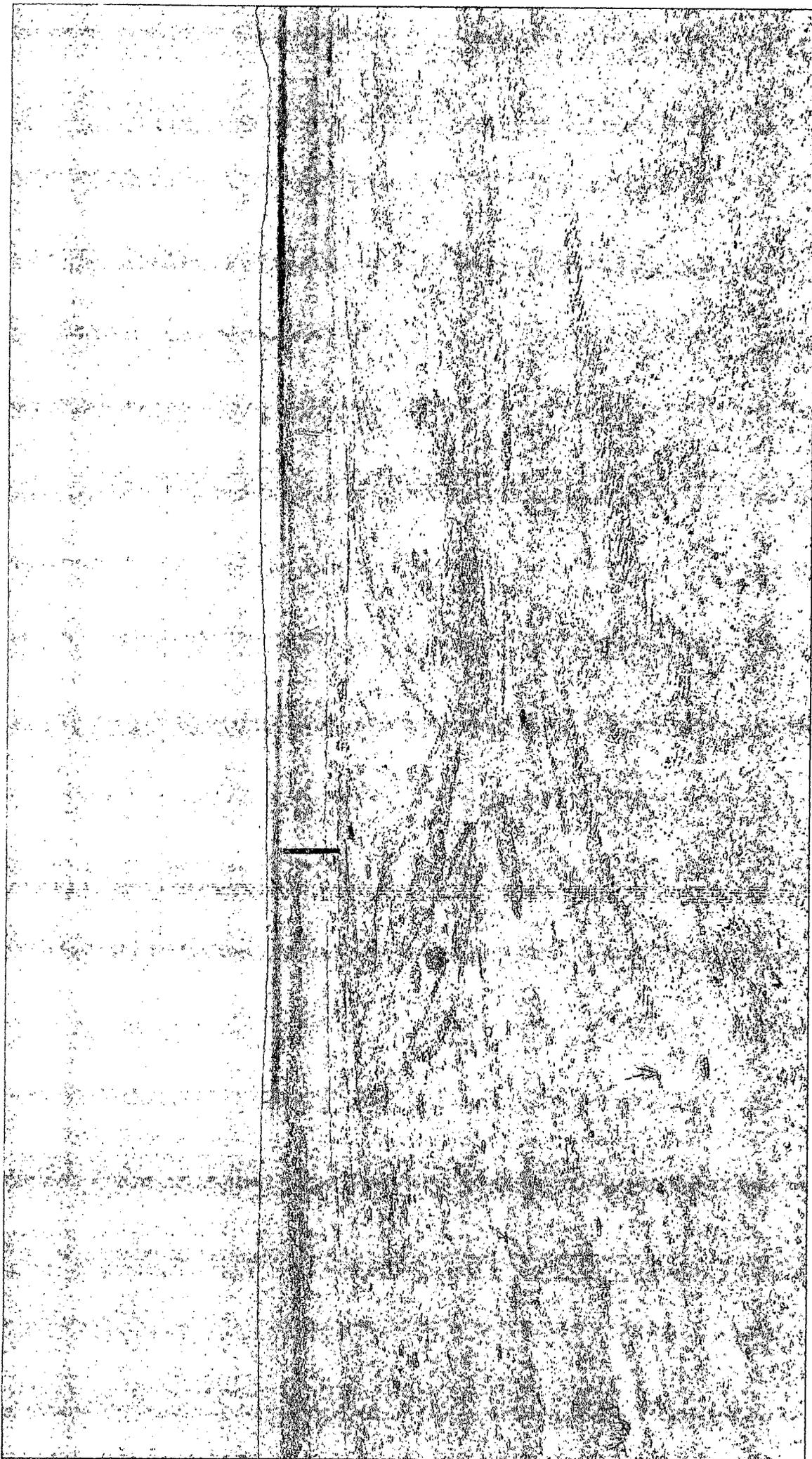
Whiting Oil & Gas Inc.

FOUR WAY 2031 #4-1

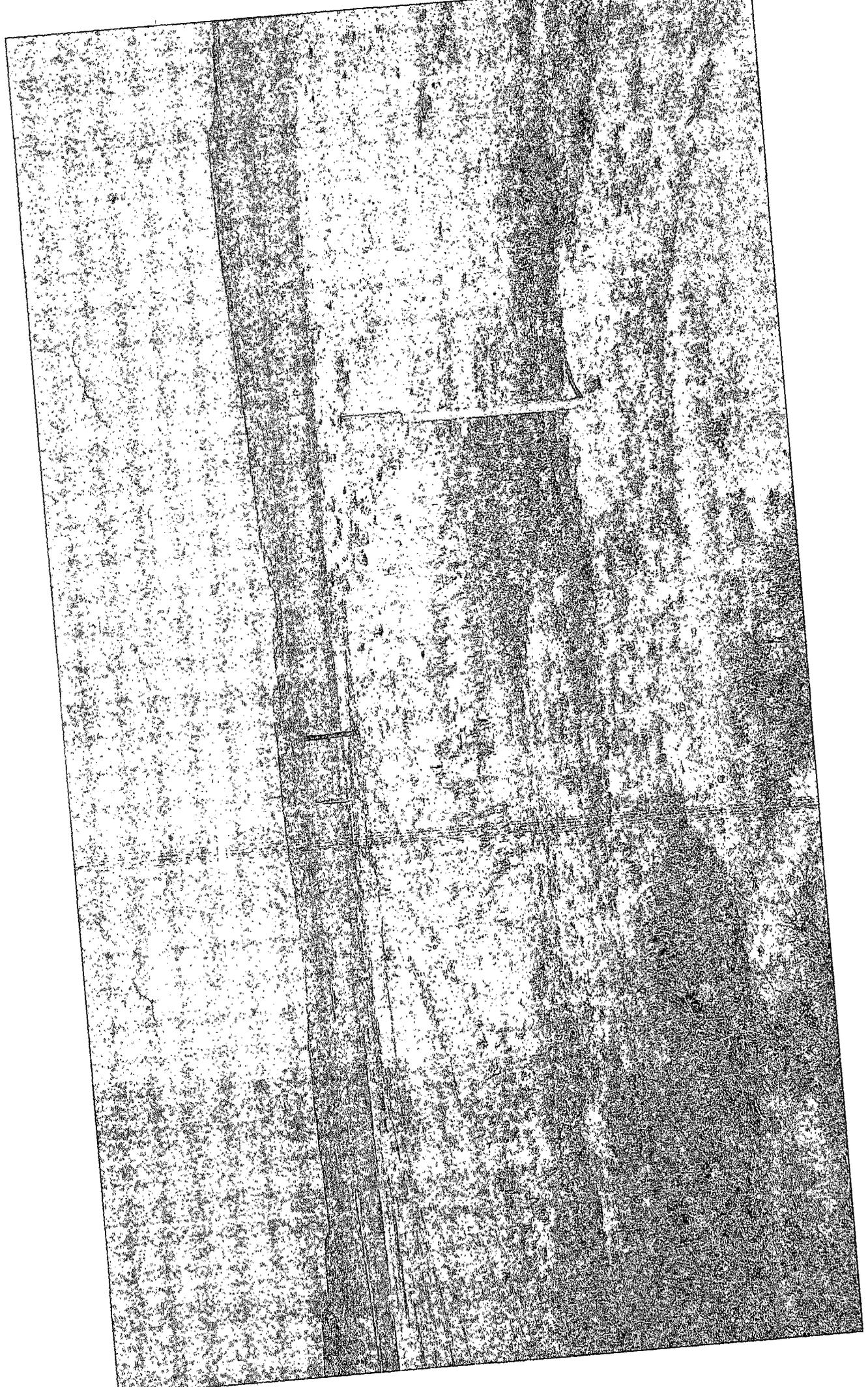
UNIT K, SEC. 4N, T20NR31E

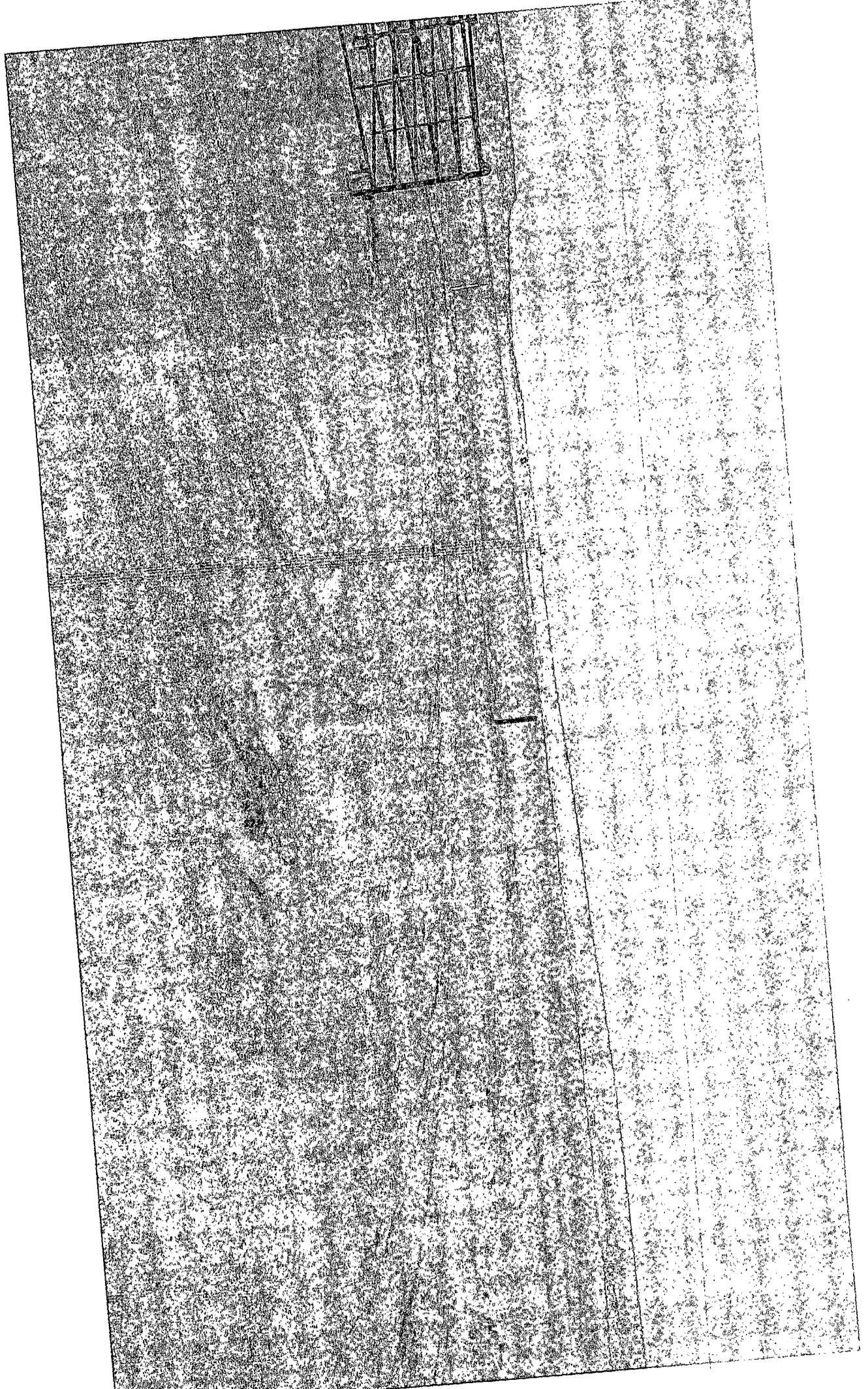
1650' FSL & 1980' FWL

API #30-021-20593 HARDING COUNTY, NM









SAFETY 1720N RAIL

FRONT W. 4. 2031



May 1, 2014

Four Way Cattle Company
Brenda A. Daniels, Pres.
P.O. Box 125
Wagon Mound, NM 87752

RE: Notification to Surface Owner of On-Site Drilling Pit Closure
Well: Four Way 2031 Well # 4-1
Harding County, NM

Whiting Oil & Gas proposes to close and remediate the surface land according to all rules and regulations noted in Subsection E of 19.15.17.13 NMAC beginning May 5, 2014

If you have any additional question please contact Kay Maddox @ 432.686.6709.

Sincerely,

Kay Maddox
Regulatory Supervisor

Mailed by certified mail to above listed party on this the 1 st day of May, 2014

Signed: Kay Maddox- Regulatory Supervisor

Certified Mail receipt number

*Whiting Petroleum Corporation
and its wholly owned subsidiary
Whiting Oil and Gas Corporation*

400 W. Illinois Avenue, Suite 1300, Midland, TX 79701 Office: 432.686.6700 Fax 432.686.6799

STATE OF NEW MEXICO
COUNTY OF HARDING

HARDING COUNTY, NM
RECEPTION# 20637
06/11/2014 03:42:17 PM
BK 19 PAGE 10079
1 of 1
BY CELESTE YBARRA

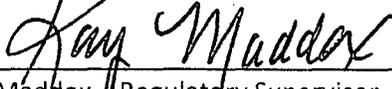
NOTICE OF PIT CLOSURE

In accordance with Section 19.15.17.13.E.4 of the NMOCD, the operator hereby provides notice of an on-site burial of a temporary Oil & Gas drilling pit. All rules and regulations of Rule 19.15.17 have been adhered to.

Lease name: FOURWAY 2031
Well No: 4-1
API No: 30-021-20593
TWN & RGE: TWN 20N RGE 31E
Unit Letter: K
Footages: 1650 FSL & 1980 FWL
Closure Date: 5/12/2014

IN WITNESS WHEREOF, the recordation notice of Pit Closure/burial has been executed on the date indicated below by undersigned.

Whiting Petroleum Corporation
And its wholly owned subsidiary
Whiting Oil & Gas Corporation

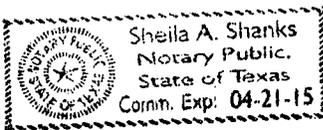


Kay Maddox, Regulatory Supervisor

STATE OF TEXAS
COUNTY OF MIDLAND

This instrument was acknowledged before me this 5th day of June, 2014, by

Kay Maddox on behalf of Whiting Oil & Gas Corporation.


Notary Public



July 17, 2014

Mr. Cory Smith
New Mexico Oil Conservation Division
1000 Rio Brazos Rd
Aztec, NM 87410

RE: Pit Closures

Dear Mr. Smith,

Whiting Oil & Gas shall re-seed the disturbed Pit area for the well listed below. The re-seeding shall occur in the upcoming rainy season documented for Harding County, New Mexico approximately August/September 2014. As evidenced by the pictures submitted some natural native vegetative growth has already occurred.

Sincerely,

Kay Maddox
Regulatory Supervisor

FOURWAY 2031 Well #041
30-021-20593
Harding County, New Mexico

*Whiting Petroleum Corporation
and its wholly owned subsidiary
Whiting Oil and Gas Corporation*

400 W. Illinois Avenue, Suite 1300, Midland, TX 79701 Office: 432.686.6700 Fax 432.686.6799

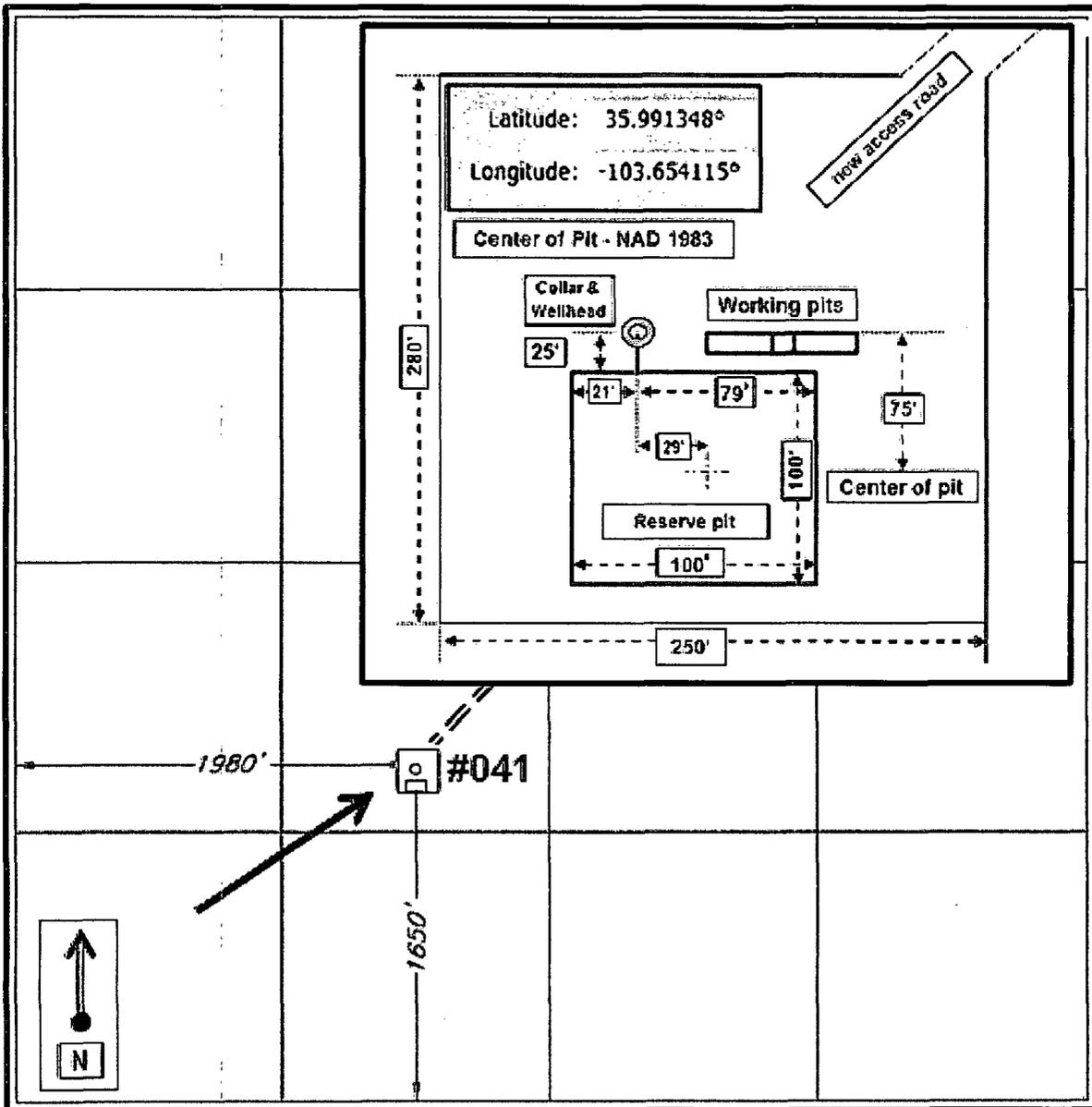
Pit Plot

Whiting Petroleum Corporation

Four Way 2031 #4-1

T-20-N, R-31-E, Section 4 NMPM

Harding County, New Mexico



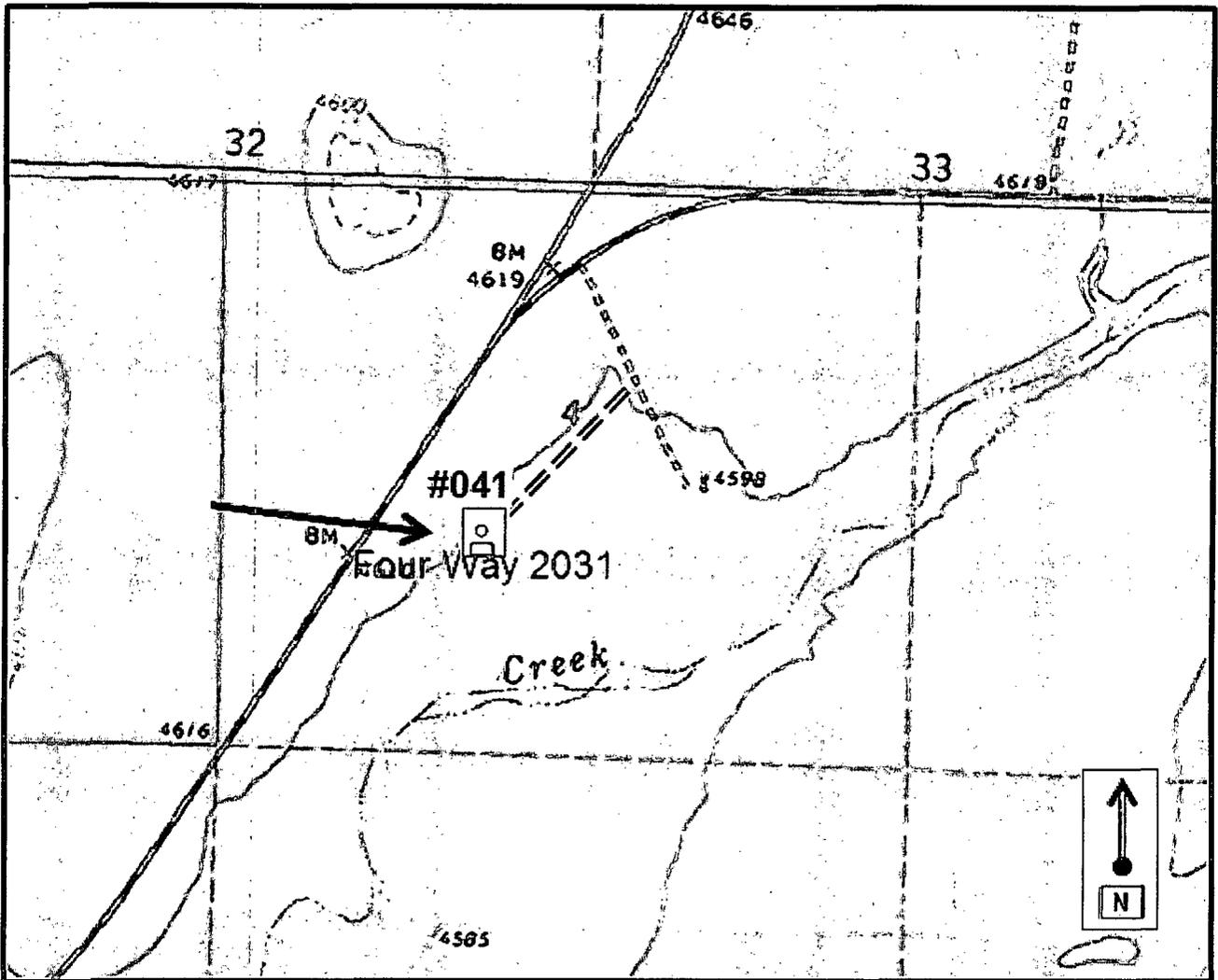
Topo Map

Whiting Petroleum Corporation

Four Way 2031 #4-1

T-20-N, R-31-E, Section 4 NMPM

Harding County, New Mexico



Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: WEST BRAVO DOME CO2
 Project Number: 13-1224-03
 Project Location: HARDING COUNTY, NM

 Sampling Date: 04/22/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: FOUR WAY 2031 #4-1 (H401230-04)

30-021-20593

BTEX 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/29/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/29/2014	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142
 Surrogate: Toluene-d8 99.0 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	04/25/2014	ND	416	104	400	0.00		

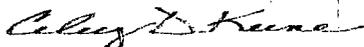
TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	<10.0	10.0	04/25/2014	ND	207	103	200	12.5		

Surrogate: 1-Chlorooctane 107 % 65.2-140
 Surrogate: 1-Chlorooctadecane 106 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celest D. Keene, Lab Director/Quality Manager



April 30, 2014

BRIAN HOLLADAY

WHITING OIL & GAS

400 W. ILLINOIS, SUITE 1300

MIDLAND, TX 79701

RE: WEST BRAVO DOME CO2

Enclosed are the results of analyses for samples received by the laboratory on 04/23/14 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

Received:	04/23/2014	Sampling Date:	04/22/2014
Reported:	04/30/2014	Sampling Type:	Soil
Project Name:	WEST BRAVO DOME CO2	Sampling Condition:	Cool & Intact
Project Number:	13-1224-03	Sample Received By:	Jodi Henson
Project Location:	HARDING COUNTY, NM		

Sample ID: MAES 2131 #18-1 (H401230-01)

BTEX 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/29/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/29/2014	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142

Surrogate: Toluene-d8 97.5 % 71.3-129

Surrogate: 4-Bromofluorobenzene 98.8 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	<10.0	10.0	04/25/2014	ND	207	103	200	12.5		

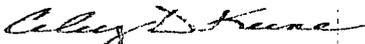
Surrogate: 1-Chlorooctane 123 % 65.2-140

Surrogate: 1-Chlorooctadecane 119 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: WEST BRAVO DOME CO2
 Project Number: 13-1224-03
 Project Location: HARDING COUNTY, NM

 Sampling Date: 04/22/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: MIERA 2130 #35-1 (H401230-02)

BTEX 8260B		mg/kg		Analyzed By: ck					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/29/2014	ND	2.35	118	2.00	6.15	
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09	
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15	
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15	
Total BTEX	<0.300	0.300	04/29/2014	ND					

Surrogate: Dibromofluoromethane 104 % 61.3-142

Surrogate: Toluene-d8 103 % 71.3-129

Surrogate: 4-Bromofluorobenzene 101 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1	
DRO >C10-C28	17.8	10.0	04/25/2014	ND	207	103	200	12.5	

Surrogate: 1-Chlorooctane 113 % 65.2-140

Surrogate: 1-Chlorooctadecane 114 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

Received:	04/23/2014	Sampling Date:	04/22/2014
Reported:	04/30/2014	Sampling Type:	Soil
Project Name:	WEST BRAVO DOME CO2	Sampling Condition:	Cool & Intact
Project Number:	13-1224-03	Sample Received By:	Jodi Henson
Project Location:	HARDING COUNTY, NM		

Sample ID: CASADOS 2030 #12-1 (H401230-03)

BTEX 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/29/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/29/2014	ND						

Surrogate: Dibromofluoromethane 100 % 61.3-142

Surrogate: Toluene-d8 101 % 71.3-129

Surrogate: 4-Bromofluorobenzene 100 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	10.9	10.0	04/25/2014	ND	207	103	200	12.5		

Surrogate: 1-Chlorooctane 126 % 65.2-140

Surrogate: 1-Chlorooctadecane 124 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: WEST BRAVO DOME CO2
 Project Number: 13-1224-03
 Project Location: HARDING COUNTY, NM

 Sampling Date: 04/22/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: FOUR WAY 2031 #4-1 (H401230-04)

BTEX 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/29/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/29/2014	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142
 Surrogate: Toluene-d8 99.0 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	<10.0	10.0	04/25/2014	ND	207	103	200	12.5		

Surrogate: 1-Chlorooctane 107 % 65.2-140
 Surrogate: 1-Chlorooctadecane 106 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: WEST BRAVO DOME CO2
 Project Number: 13-1224-03
 Project Location: HARDING COUNTY, NM

 Sampling Date: 04/22/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: STATE 2229 #36-1 (H401230-05)

BTEX 82608		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/29/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/29/2014	ND						

Surrogate: Dibromofluoromethane 97.4 % 61.3-142
 Surrogate: Toluene-d8 101 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	15.7	10.0	04/25/2014	ND	207	103	200	12.5		

Surrogate: 1-Chlorooctane 113 % 65.2-140
 Surrogate: 1-Chlorooctadecane 112 % 63.6-154

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

Received:	04/23/2014	Sampling Date:	04/22/2014
Reported:	04/30/2014	Sampling Type:	Soil
Project Name:	WEST BRAVO DOME CO2	Sampling Condition:	Cool & Intact
Project Number:	13-1224-03	Sample Received By:	Jodi Henson
Project Location:	HARDING COUNTY, NM		

Sample ID: DOROTEO 1927 #15-1 (H401230-06)

BTEX 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/30/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/30/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/30/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/30/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/30/2014	ND						

Surrogate: Dibromofluoromethane 102 % 61.3-142

Surrogate: Toluene-d8 104 % 71.3-129

Surrogate: 4-Bromofluorobenzene 106 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	92.1	10.0	04/25/2014	ND	207	103	200	12.5		

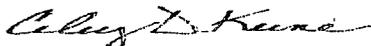
Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 113 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: WEST BRAVO DOME CO2
 Project Number: 13-1224-03
 Project Location: HARDING COUNTY, NM

 Sampling Date: 04/22/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: LADD 1928 #17-1 (H401230-07)

BTEX 82608		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/30/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/30/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/30/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/30/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/30/2014	ND						

Surrogate: Dibromofluoromethane 99.2 % 61.3-142

Surrogate: Toluene-d8 98.0 % 71.3-129

Surrogate: 4-Bromofluorobenzene 115 % 63.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	16.9	10.0	04/25/2014	ND	207	103	200	12.5		

Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 101 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: WEST BRAVO DOME CO2
 Project Number: 13-1224-03
 Project Location: HARDING COUNTY, NM

 Sampling Date: 04/22/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: LEWIS 1928 #2-1 (H401230-08)

BTEX 82608		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/30/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/30/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/30/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/30/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/30/2014	ND						

Surrogate: Dibromofluoromethane 103 % 61.3-142

Surrogate: Toluene-d8 97.4 % 71.3-129

Surrogate: 4-Bromofluorobenzene 102 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	848	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	<10.0	10.0	04/25/2014	ND	207	103	200	12.5		

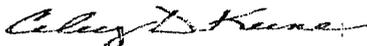
Surrogate: 1-Chlorooctane 97.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.8 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 WHITING OIL & GAS
 BRIAN HOLLADAY
 400 W. ILLINOIS, SUITE 1300
 MIDLAND TX, 79701
 Fax To: NONE

Received:	04/23/2014	Sampling Date:	04/22/2014
Reported:	04/30/2014	Sampling Type:	Soil
Project Name:	WEST BRAVO DOME CO2	Sampling Condition:	Cool & Intact
Project Number:	13-1224-03	Sample Received By:	Jodi Henson
Project Location:	HARDING COUNTY, NM		

Sample ID: HAZEN 1928 #24-1 (H401230-09)

BTEX 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	04/29/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/29/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/29/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/29/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/29/2014	ND						

Surrogate: Dibromofluoromethane 104 % 61.3-142

Surrogate: Toluene-d8 97.8 % 71.3-129

Surrogate: 4-Bromofluorobenzene 108 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	04/25/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/25/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	21.5	10.0	04/25/2014	ND	207	103	200	12.5		

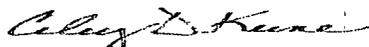
Surrogate: 1-Chlorooctane 112 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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* = Accredited Analyte

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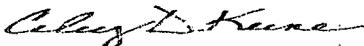
Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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