

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

**SUNDRIY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an**  
**abandoned well. Use Form 3160-3 (APD) for such proposals.**

S

5 Lease Serial No  
NMLC 060613  
6 If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1 Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

AUG 12 2008

2 Name of Operator  
Devon Energy Production Co., LP

OCD-ARTESIA

7 If Unit of CA/Agreement, Name and/or No  
8 Well Name and No  
Indian Draw 6 Fed Com 2

3a Address  
20 North Broadway  
OKC, OK 73102

3b Phone No (include area code)  
(405)-552-7802

9 API Well No  
30-015-36294

10 Field and Pool or Exploratory Area  
Carlsbad; East Morrow

4 Location of Well (Footage, Sec, T, R, M, or Survey Description)  
SWNW 1330' FNL & 860' FWL  
Sec 6-T22S-R28E

11 Country or Parish, State  
Eddy County, NM

12 CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Change Rig</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<u>Layout to Closed</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	<u>Loop System</u>

13 Describe Proposed or Completed Operation Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 must be filed once testing has been completed Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection )

Devon Energy Production Company, LP respectfully advises of the change to a rig layout per the attached diagram with a closed loop system

- \* See attachment denoting rig layout with "closed loop system"
- \* C-144 filed with the NMOCD

ACCEPTED FOR RECORD

AUG 12 2008

Gerry Guye, Deputy Field Inspector  
NMOCD-District II ARTESIA

14 I hereby certify that the foregoing is true and correct

Name (Printed/Typed)  
Stephanie A. Ysasaga

Title Sr Staff Engineering Technician

Signature

Date 07/28/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ Don Peterson

Title

Date

Conditions of approval, if any, are attached Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Office

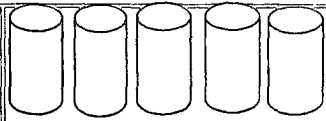
CARLSBAD FIELD OFFICE

AUG 08 2008

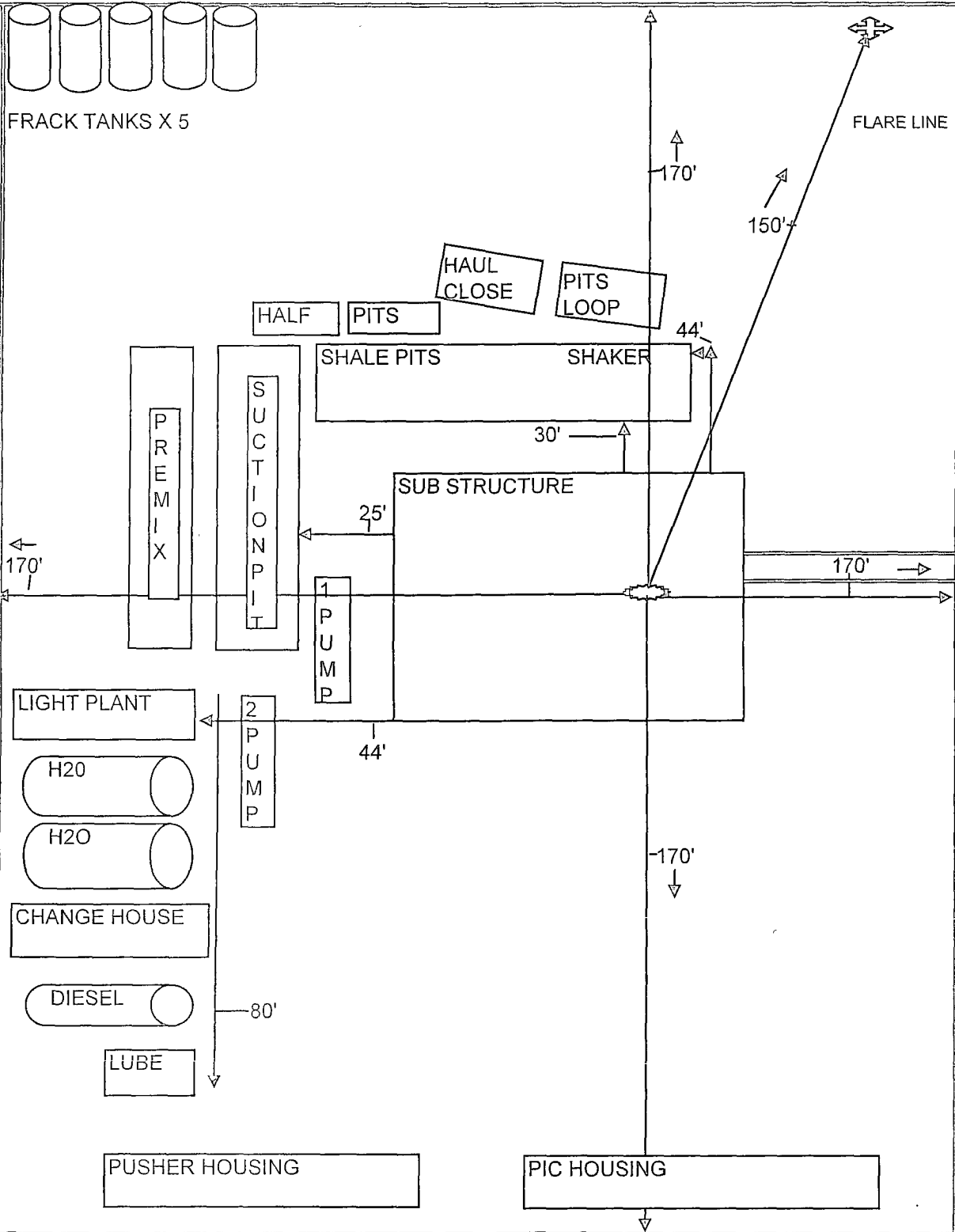
Title 18 U S C Section 1001 and Title 43 U S C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

(Instructions on page 2)

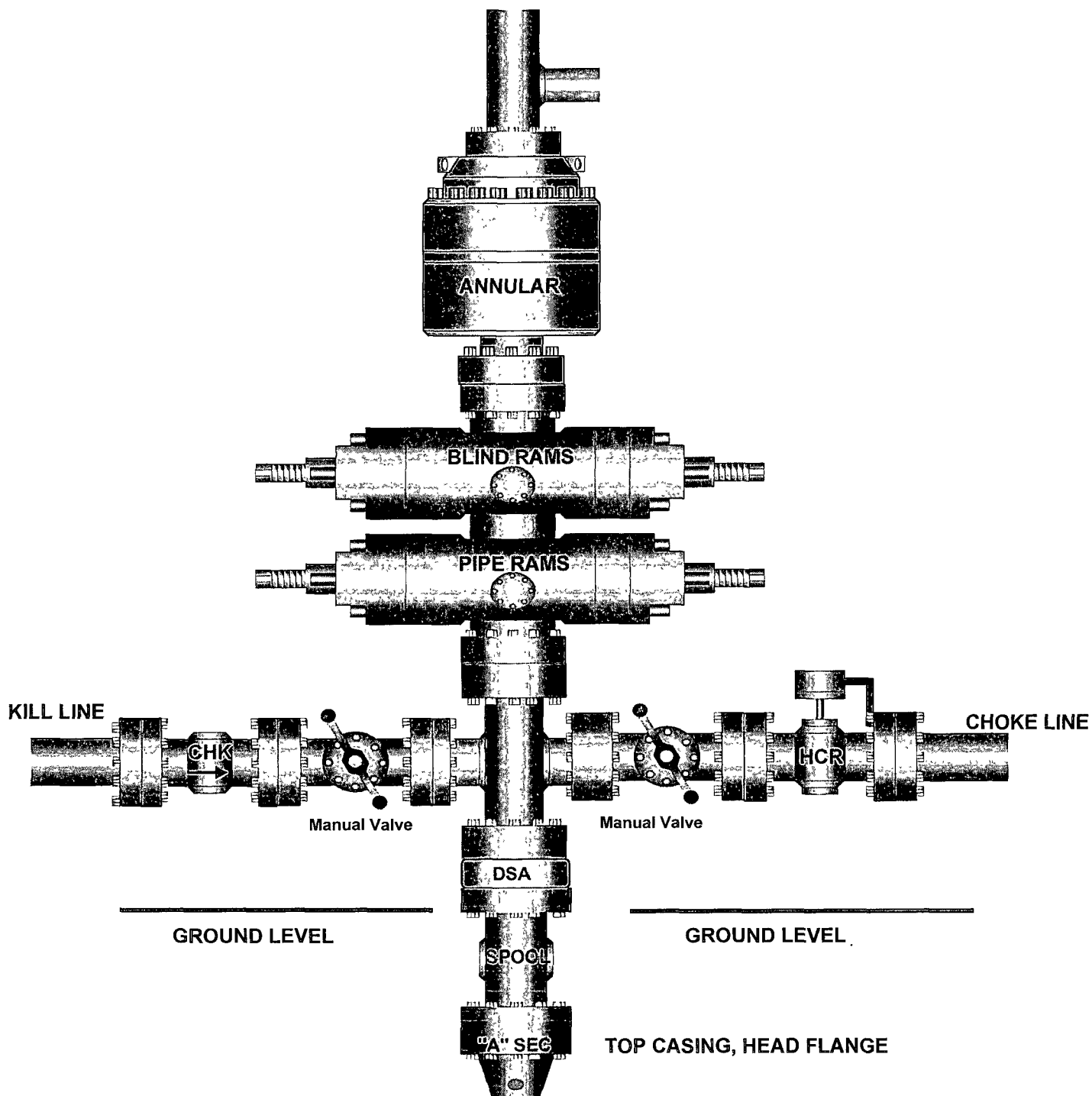
MCVAY RIG #7  
GENERAL RIG LAY OUT



FRACK TANKS X 5



# 11" x 5,000 psi BOP Stack



District I  
1625 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

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

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Form C-144  
June 24, 2008

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.



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

JUL 14 2008

OCD-ARTESIA

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

**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: Devon Energy Production Co., LP OGRID #: 6137  
Address: 20 North Broadway OKC, OK 73102  
Facility or well name: Indian Draw 6 Fed Com 2  
API Number: 30-015-36294 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr SWNW Section 6 Township 22S Range 28E County: Eddy County, NM  
Center of Proposed Design: Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ 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 ☐ Steel Pit  
☐ Lined ☐ Unlined  
Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC  
☐ Other \_\_\_\_\_ ☐ String-Reinforced  
Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_  
Volume: \_\_\_\_\_ bbl Dimensions: L \_\_\_\_\_ x W \_\_\_\_\_ x D \_\_\_\_\_

☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC  
☐ Drying Pad ☒ Tanks ☒ Haul-off Bins ☐ Other \_\_\_\_\_  
☐ Lined ☐ Unlined  
Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC  
☐ Other \_\_\_\_\_  
Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_  
Volume: \_\_\_\_\_ bbl \_\_\_\_\_ yd<sup>3</sup>  
Dimensions: Length \_\_\_\_\_ x Width \_\_\_\_\_

☐ **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 \_\_\_\_\_

**Fencing:** Subsection D of 19.15.17.11 NMAC  
☐ Chain link, six feet in height, two strands of barbed wire at top  
☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet  
**Netting:** Subsection E of 19.15.17.11 NMAC  
☐ Screen ☐ Netting ☐ Other \_\_\_\_\_  
☐ Monthly inspections  
**Signs:** Subsection C of 19.15.17.11 NMAC  
☐ 12'x24', 2' lettering, providing Operator's name, site location, and emergency telephone numbers  
☒ Signed in compliance with 19.15.3.103 NMAC

0208134

☐ **Alternative Method:**

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

**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 office for consideration of approval.

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

**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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.*

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).

- 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.

*(Applies to temporary, emergency, or cavitation pits and below-grade tanks)*

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

☐ NA

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

*(Applies to permanent pits)*

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

☐ NA

Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

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

☐ Yes ☐ No

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

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

☐ Yes ☐ No

Within 500 feet of a wetland.

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

☐ Yes ☐ No

Within the area overlying a subsurface mine.

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

☐ Yes ☐ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☐ No

**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 - 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: \_\_\_\_\_

**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 (required for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (required for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☒ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

NMAC

O&amp;M and Closure Plan

- ☒ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_

**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

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

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H<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

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ 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)

**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

**Instructions:** Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste.

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

☐ Yes ☐ No  
☐ 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; Data obtained from nearby wells

☐ Yes ☐ No  
☐ NA

Ground water is more than 100 feet below the bottom of the buried waste.

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

☐ Yes ☐ No  
☐ NA

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

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

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

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

☐ Yes ☐ No

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

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

☐ Yes ☐ No

Within 500 feet of a wetland.

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

☐ Yes ☐ No

Within the area overlying a subsurface mine.

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

☐ Yes ☐ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☐ No

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

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

**Waste Removal Closure For Closed-loop Systems That Utilize Haul-off Bins Only:** (19.15.17.13.D NMAC) **Instructions:** Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings.

Disposal Facility Name: CRI Disposal Facility Permit Number: R9166

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

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

**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): Stephanie A. Ysasaga Title: Sr. Staff Engineering Technician

Signature: [Signature] Date: 07/11/2008

e-mail address: Stephanie.Ysasaga@dyn.com Telephone: (405)-552-7802

**OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature: [Signature] Approval Date: 7/15/08

Title: District II Supervisor Permit Number: 0208134

**Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

☐ Closure Completion Date: \_\_\_\_\_

**Closure Method:**

- ☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method  
☐ If different from approved plan, please explain.

**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  
☐ Proof of Deed Notice (if applicable)  
☐ Plot Plan  
☐ Confirmation Sampling Analytical Results  
☐ Waste Material Sampling Analytical Results  
☐ 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): \_\_\_\_\_ Title: \_\_\_\_\_

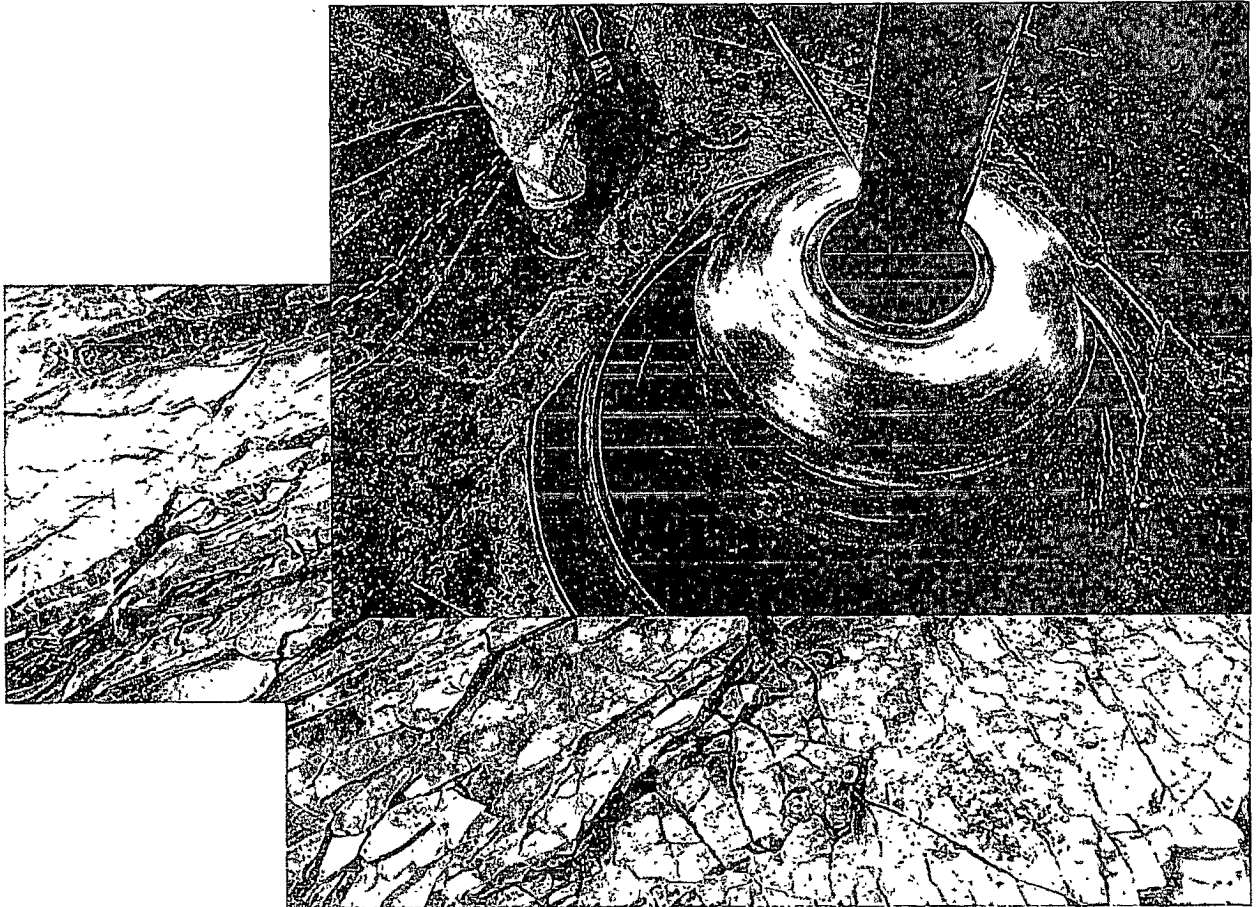
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_





Commitment Runs Deep



Design Plan  
Operation and Maintenance Plan  
Closure Plan

SENM - Closed Loop Systems  
June 2008

## I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

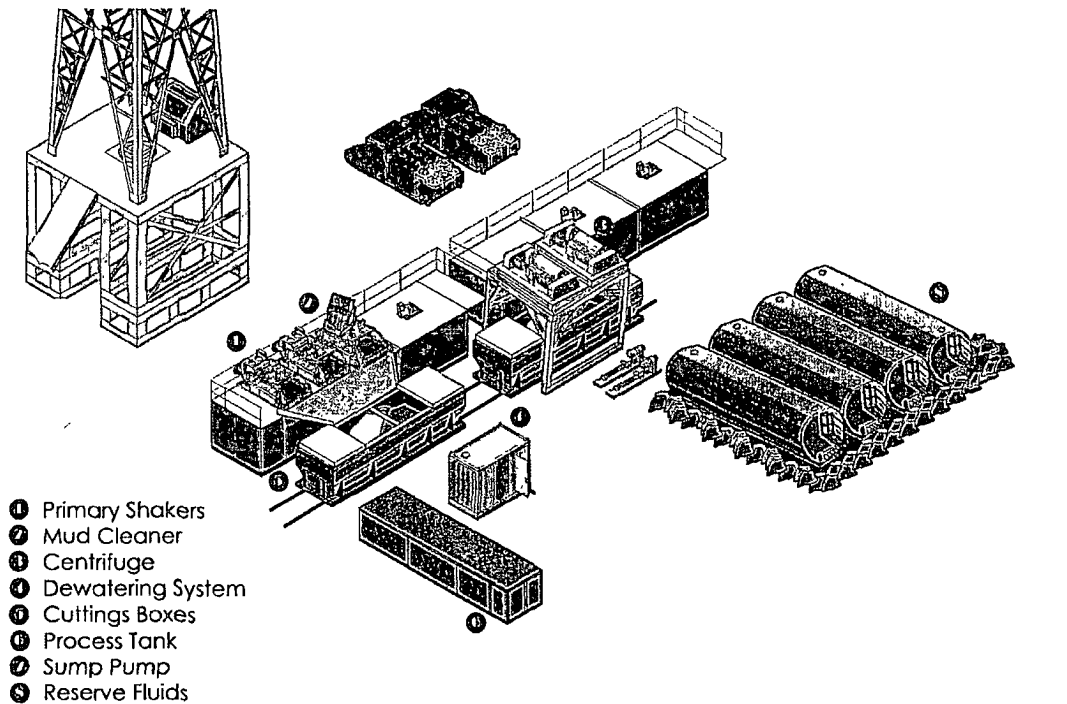
Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

## II. Operations and Maintenance Plan

*Primary Shakers:* The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

**Mud Cleaner:** The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.

## Closed Loop Schematic



**Mi SWACO**

**Centrifuges:** The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

**Dewatering System:** The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

*Cuttings Boxes:* Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

*Process Tank: (Optional)* The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

*Sump and Sump Pump:* The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

*Reserve Fluids (Tank Farm):* A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

### **III. Closure Plan**

A maximum 170' X 170' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.