July 21, 2008

District L.#
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

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	ation
Type of action: Permit of a pit, closed-loop system, below-grade tank, or proposed alternative Method Permit or Closure Plan Application: Type of action: Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted below-grade tank, or proposed alternative method	rnative method ernative method
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-graded Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority	water, ground water or the
Operator: Red Willow Production Company OGRID#: Z16 Address: P6	282
	Dia Assiba
U/L or Qtr/Qtr I Section 9 Township 32N Range 04W County: Center of Proposed Design: Latitude 36.99679 N Longitude 107.25266 W Surface Owner: Federal State X Private Tribal Trust or Indian Allotment	
□ Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: □ Drilling □ Workover □ Permanent □ Emergency □ Cavitation □ P&A □ Lined □ Unlined Liner type: Thickness	
X Clased-loop System: Subsection H of 19.15.17.11 NMAC Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require printent) X Drying Pad Above Ground Steel Tanks Haul-off Bins Other X Lined Unlined Liner type: Thickness 20 mil X LLDPE HDPE PVC Other Liner Seams: Welded Factory Other	ior approval of a permit or notice of
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-ce Visible sidewalls and liner Visible sidewalls only Other Liner type: Thickness mil LLDPE HDPE PVC Other	- ·
5. Alternative Method:	

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

6. Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)	
Chain link, six fect in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, scholinstitution or church)	ol, hospital,
Four foot height, four strands of barbed wire evenly spaced between one and four feet	
Alternate. Please specify	
7. Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
Screen Netting Other	
Monthly inspections (If netting or screening is not physically feasible)	
8.	
Signs: Subsection C of 19.15.17.11 NMAC	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers X Signed in compliance with 19.15.3.103 NMAC	
9. Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.	
Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Busconsideration of approval.	reau office for
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 acmaterial are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the applice or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drabove-grade tanks associated with a closed-loop system.	propriate district of approval.
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
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

II.	
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklis Instructions: Each of the following items must be attached to the application. Please indicate, by a chattached.	t: Subsection B of 19.15.17.9 NMAC eck mark in the box, that the documents are
Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subse Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC	of Subsection B of 19.15.17.9 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 and 19.15.17.13 NMAC	rements of Subsection C of 19.15.17.9 NMAC
Previously Approved Design (attach copy of design) API Number: or Per	rmit Number:
12.	
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a chattached.	eck mark in the box, that the documents are
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragra Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.11 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC	guirements of 19.15.17.10 NMAC
Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requi and 19.15.17.13 NMAC	rements of Subsection C of 19.13.17.9 NMAC
Previously Approved Design (attach copy of design) API Number:	_
Previously Approved Operating and Maintenance Plan API Number: above ground steel tanks or haul-off bins and propose to implement waste removal for closure)	(Applies only to closed-loop system that use
13.	
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 chattached.	eck mark in the box, that the documents are
Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 Climatological Factors Assessment	NMAC
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. Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC Liner Specifications and Compatibility Assessment - based upon	7.11 NMAC
Quality Control/Quality Assurance Construction and Installation Plan the appropriate requirements of 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	
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	0,15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC	
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed of Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Beld Alternative	osure plan. ow-grade Tank X Closed-loop System
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	5)
Alternative Closure Method (Exceptions must be submitted to the Santa F	e Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of closure plan. Please indicate, by a check mark in the box, that the documents are attached.	the following items must be attached to the
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 I	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 Re-vegetation Plan - based upon the appropriate requirements of Subsection 1 of 19.15.17.13 NMAC	m H of 19.15.17.13 NMAC
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NM.	AC

Waste Removal Closure For Closed-loop Systems That Utilize Above Gro Instructions: Please indentify the facility or facilities for the disposal of liquid	und Steel Tanks or Haul-off Bins (s, drilling fluids and drill cuttings. U	Only: (19,15,17,13,I Ise attachment if mor	NMAC) re than two
facilities are required. Disposal Facility Name: Envirotech	Disposal Facility Permit Number:		
Disposal Facility Name: IEI/JFJ Landfarm	Disposal Facility Permit Number: .		
Will any of the proposed closed-loop system operations and associated activitie operations? Tyes (If yes, please provide the information below) No	es occur on or in areas that will not b	oe used for future ser	vice and
Required for impacted areas which will not be used for future service and open Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection Plan - based upon the appropriate	priate requirements of Subsection Hection I of 19.15,17.13 NMAC	of 19.15.17.13 NM/	AC
Siting Criteria (regarding on-site closure methods only: 19.15.17.10 NMA Instructions: Each siting criteria requires a demonstration of compliance in provided below. Requests regarding changes to certain siting criteria may re be considered an exception which must be submitted to the Santa Fe Environ and/or demonstrations of equivalency are required. Please refer to 19.15.17.	the closure plan. Recommendation quire administrative approval from imental Bureau office for considere	the appropriate dist	rict office or may
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
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			☐ 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
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed sit		sinkhole, or playa	☐ Yes ☐No
Within 300 feet from a permanent residence, school, hospital, institution, or chevisual inspection (certification) of the proposed site; Aerial photo; Sa	urch in existence at the time of initia tellite image	l application.	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that watering purposes, or within 1000 horizontal feet of any other fresh water well - NM Office of the State Engineer - iWATERS database; Visual inspec	or spring, in existence at the time of	initial application.	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approximately			☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map;	Visual inspection (certification) of the	ne proposed site	Yes No
Within the area overlying a subsurface mine. Written confirmation or verification or map from the NM EMNRD-M	ining and Mineral Division		☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Ge Society; Topographic map	ology & Mineral Resources; USGS;	NM Geological	Yes No
Within a 100-year floodplain FEMA map			☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of by a check mark in the box, that the documents are attached.	f the following items must be attach	ed to the closure pla	n. Please indicate,
Siting Criteria Compliance Demonstrations - based upon the appropriate red Proof of Surface Owner Notice - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the a Construction/Design Plan of Temporary Pit (for in-place burial of a drying Protocols and Procedures - based upon the appropriate requirements of 19.1 Confirmation Sampling Plan (if applicable) - based upon the appropriate red Waste Material Sampling Plan - based upon the appropriate requirements of Disposal Facility Name and Permit Number (for liquids, drilling fluids and Soil Cover Design - based upon the appropriate requirements of Subsection Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	of Subsection F of 19.15.17.13 NMA appropriate requirements of 19.15.17 pad) - based upon the appropriate resolution of 5.17.13 NMAC quirements of Subsection F of 19.15 f Subsection F of 19.15.17.13 NMA drill cuttings or in case on-site closum of 19.15.17.13 NMAC of 1 of 19.15.17.13 NMAC	7.11 NMAC equirements of 19.15 .17.13 NMAC C	

19. Operator Application Certification: I hereby certify that the information submitted with this application is true, accur	ate and complete to the best of my knowledge and belief.	
	Title: AGENT	
Signature:	Date: //25/11	
e-mail address: Yima finneyland, com	Telephone: 970 - 385 - 472Z	
20. OCD Approval: Permit Application (including closure plan)		
OCD Representative Signature: Downston Towell	Approval Date: 4/5(1)	
Title: <u>Funito/Spec</u>	OCD Permit Number:	
21. Closure Report (required within 60 days of closure completion): Subsection Instructions: Operators are required to obtain an approved closure plan prior t report. The closure report is required to be submitted to the division within 60 d complete this section of the form until an approved closure plan has been obtain	to implementing any closure activities and submitting the closure lays of the completion of the closure activities. Please do not	
72.		
Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative If different from approved plan, please explain.	e Closure Method	
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized. Disposal Facility Name: Disposal Facility Permit Number:		
Disposal Facility Name:D		
Were the closed-loop system operations and associated activities performed on or Yes (If yes, please demonstrate compliance to the items below) X No	in areas that will not be used for future service and operations?	
Required for impacted areas which will not be used for future service and operation Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique	ons:	
24.		
Closure Report Attachment Checklist: Instructions: Each of the following item mark in the box, that the documents are attached. Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure) Plot Plan (for on-site closures and temporary pits) Confirmation Sampling Analytical Results (if applicable) Waste Material Sampling Analytical Results (required for on-site closure) Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation) On-site Closure Location: Latitude Longitu		
25.		
Operator Closure Certification: I hereby certify that the information and attachments submitted with this closure rebelief. I also certify that the closure complies with all applicable closure requirem	report is true, accurate and complete to the best of my knowledge and ents and conditions specified in the approved closure plan.	
Name (Print):	Title:	
Signature:	Date:	
e-mail address:	Telephone:	

Plan of Operations: Closed Loop System & Drying Pad

Closed Loop Design:

The closed loop system will not incorporate a temporary pit or below grade tank. The closed loop system will include a drying pad and sumps to facilitate the collection of liquids derived from drill cuttings, as specified per subsection H of 19.15.17.11 and an above ground steel tank suitable for holding the cuttings and fluids generated during rig operations. The tank will be of sufficient volume to maintain a safe free board for periodic removal and disposal of cuttings and fluids. Frac tanks will be utilized on site for fresh water.

- 1) Fencing is not required for an above ground closed-loop system.
- 2) The drying pad will be constructed by 6 inches of clay dirt over a 20-mil string-reinforced LLDPE liner to prevent infiltration of any draining liquid.
- 3) Run-off will be prevented from lined ditches on the perimeter of the drying pad.
- 4) Berms will also be constructed on the outside perimeter to prevent run-on of water or fluids.
- 5) It will be signed in compliance with 19.15.3.103 NMAC.

Closed Loop Operations and Maintenance Plan:

A modified steel tank will be operated and maintained; to contain liquids and drill cuttings, to aid in the prevention of contamination of fresh water sources, in order to protect public health and the environment. To attain this goal the following steps will be followed:

- 1) The liquids in the closed-loop tank will be re-circulated through the mud system or vacuumed and disposed of at Envirotech (Permit Number NM-01-0011) or IEI/JFJ Landfarm (#NM-01-0010B) on a periodic basis to prevent over topping. Reuse may include the relocating of liquids to be used in other permitted drilling operations.
- 2) As drill solids are generated, a front-end loader removes the waste and will begin stacking it on a drying pad.
- 3) Small amounts of dirt or lime my added to aid in drying.
- 4) No hazardous waste, miscellaneous solid waste or debris will be discharged into or stored in the tank. Only fluids or cuttings used or generated by rig operations will be placed or stored in the tank.
- 5) The division district office will be notified within 48 hours of the discovery of compromised integrity of the closed-loop tank. Upon the discovery of the compromised tank, repairs will be enacted immediately.
- 6) All of the above operations will be inspected and a log will be signed and dated. During rig operations the inspection will be daily.

Closed Loop Closure Plan:

- 1) Upon completion of the drilling operations, all solids and liquids will be removed and disposed of at Envirotech (Permit # NM-01-0011) or IEI/JFL Landfarm (# NM-01-0010B). In the event that a drying pad is utilized, the solids contained on the pad will remain on site to allow sufficient drying and will then be transported to one of the above mentioned disposal facilities. The tanks will be removed from location as part of the rig move. The APD Conditions of Approval will be followed for site reclamation.
- 2) After the drying pad is removed, the surface below the pad will be visually inspected for any contamination. If contamination is discovered, a five point composite sample will be taken of the drying pad area using sampling tools and all samples tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13. (i.e. dig and haul).

- 3) In the event that a drying pad is used, the area where the drying pad will be located will be part of the actual well pad and will still be in use throughout the operation of the well. Upon final P&A of the well, the following will be done:
 - a. Re-contouring of location will match fit, shape, line, form and texture of the surroundings. Re-shaping will include drainage control and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour will have a uniform appearance with a smooth surface that fits the natural landscape.
 - b. Will re-seed the reclaimed area after the final P&A of the well. The pad will be re-seeded the first growing season after the final P&A of the site. Seeding will be accomplished by drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will be used on federal lands.

Completion Plan

A closed-loop tank will be set on location once drilling operations have ceased. The closed-loop tank will measure 20 ft height by 12 ft diameter (400 BBL) or 20 ft height by 10 ft 6 in diameter (300 BLL). It will be designed, operated, maintained and closed according to the attached Closed-loop Design Plan, Closed-loop Operating and Maintenance Plan, and Closed-loop Closure Plan.

CLOSED LOOP SYSTEM SCHEMATIC

Hole	Depth	Length	Volume
(in)	(ft)	(ft)	(ft ³)
12 1/4	200	200	164
8 3/4	4500	4300	1796
6 1/4	3500	3300	703

Estimated Gauge Hole Volume 2662

Length	Width	Height	Volume
(ft)	(ft)	(ft)	(ft ³)
135	60	3	24300

Waste Vol. Estimate for one cuttings pile

