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

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

District Office.
Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application
Type of action: X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method
Instructions [.] Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances
Operator. Energen Resources Corporation OGRID #: 162928
Address: 2010 Afton Place, Farmington, NM 87401
Facility or well name: Jicarilla 67 #21
API Number. 30-039-31022 OCD Permit Number:
U/L or Qtr/Qtr E Section 19 Township 25N Range 05W County Rio Arriba
Center of Proposed Design: Latitude 36.38575 N Longitude 107.40775 W NAD. 1927 X 1983
Surface Owner: Federal State Private X Tribal Trust or Indian Allotment
Temporary Drilling Workover Permanent Emergency Cavitation P&A Lined Unlined Liner type Thicknessmil LLDPE HDPE PVC Other String-Reinforced Liner Seams: Welded Factory OtherVolume:bbl Dimensions: Lx Wx D
3
X Closed-loop System: Subsection H of 19.15.17.11 NMAC Type of Operation: P&A X Drilling a new well X Workover or Drilling (Applies to activities which require prior approval of a permit or notice or intent)
Type of Operation P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
4 OIL CONG P
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: Thicknessmil LLDPE HDPE PVC Other

Alternative Method:

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

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, scho	ol, hospital,
institution or church) Four foot height, four strands of barbed wire evenly spaced between one and four feet	
Alternate. Please specify	
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)	
Signs: Subsection C of 19.15.17.11 NMAC	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	
Signed in compliance with 19.15 3.103 NMAC	
Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bur	reau office for
consideration of approval. Exception(s). Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
10	
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of ac material 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 man	☐ 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 19.15.17.12 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
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19 15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19 15 17 9 Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17 10 NMAC Design Plan - based upon the appropriate requirements of 19 15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15 17 9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number
Previously Approved Operating and Maintenance Plan API Number:
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 Stiting 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 Liner Specifications and Compatibility Assessment - based upon Quality Control/Quality Assurance Construction and Installation Plan the appropriate requirements of 19.15 17.11 NMAC Operating and Maintenance 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
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. \[\text{Drilling} \] Workover \[\text{Emergency} \] Cavitation \[\text{Permanent Pit} \] Below-grade Tank \[\text{X} \] Closed-loop System Alternative Proposed Closure Method \[\text{Waste Excavation and Removal} \] Waste Removal (Closed-loop systems only) \[\text{On-site Closure Method (Only for temporary pits and closed-loop systems)} \] \[\text{In-place Burial} \] \[\text{On-site Trench Burial} \] \[\text{Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)} \]
Waste Excavation and Removal Closure Plan Checklist: (19.15 17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached. Protocols and Procedures - based upon the appropriate requirements of 19.15 17 13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17 13 NMAC Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings) Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Syras'e Removal Closure For Closed-loop Systems That Utilize Above Groun Instructions: Please indentify the facility or facilities for the disposal of liquids,	nd Steel Tanks or Haul-off Bins (drilling fluids and drill cuttings)	Only: (19 15.17.13.D Ise attachment if mor	NMAC) e than two
facilities are required. Disposal Facility Name Envirotech	Disposal Facility Permit Number:	NM-01-0011	
	Disposal Facility Permit Number	NM-01-0010B	
Will any of the proposed closed-loop system operations and associated activities operations? Yes (If yes, please provide the information below) No	s occur on or in areas that will not	e used for future serv	vice and
Required for impacted areas which will not be used for future service and operation Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection Site Reclamation S	oriate requirements of Subsection E tion I of 19 15.17.13 NMAC	l of 19 15.17 13 NMA	AC
Siting Criteria (regarding on-site closure methods only. 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the provided below. Requests regarding changes to certain siting criteria may require be considered an exception which must be submitted to the Santa Fe Environmental of the constrations of equivalency are required. Please refer to 19.15.17.1	the closure plan. Recommendatio uire administrative approval from mental Bureau office for consider	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 ☐ 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 lake (measured from the ordinary high-water mark) - Topographic map, Visual inspection (certification) of the proposed site	•	, sınkhole, or playa	Yes No
Within 300 feet from a permanent residence, school, hospital, institution, or chu - Visual inspection (certification) of the proposed site; Aerial photo; Sate		al 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 of a NM Office of the State Engineer - iWATERS database; Visual inspects	or spring, in existence at the time o	f initial application.	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh wadopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approximation		•	Yes No
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; V	/isual inspection (certification) of t	the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mi	ning and Mineral Division		☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geo 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 attack	hed to the closure pla	n. Please indicate,
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Proof of Surface Owner Notice - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Ignature Protocols and Procedures - based upon the appropriate requirements of Ignature Ign	f Subsection F of 19 15 17 13 NM. ppropriate requirements of 19 15.1 and) - based upon the appropriate r 5.17.13 NMAC quirements of Subsection F of 19 1.2 Subsection F of 19.15.17 13 NMAC drill cuttings or in case on-site close H of 19.15 17 13 NMAC at 1 of 19.15 17.13 NMAC	7.11 NMAC equirements of 19 15 5.17 13 NMAC	

Page 4 of 5

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): Andrew Soto	Title: Drilling Engineer		
Signature:	Date: 2/3/11		
e-mail address: asoto@energen.com	Telephone 505-325-6800		
20			
OCD Approval: Permit Application (including closure plan) Closure	Plan (only) OCD Conditions (see attachment)		
OCD Representative Signature: Cowott D. Kelly	Approval Date: 6/13/2011		
Title: Compliance Officer OCDP	ermit Number:		
21			
Closure Report (required within 60 days of closure completion). Subsection K of I Instructions: Operators are required to obtain an approved closure plan prior to implied to the closure report is required to be submitted to the division within 60 days of complete this section of the form until an approved closure plan has been obtained an	ementing any closure activities and submitting the closure The completion of the closure activities. Please do not		
	Closure Completion Date:		
Closure Method Waste Excavation and Removal On-Site Closure Method Alternative Clos If different from approved plan, please explain.	ure Method Waste Removal (Closed-loop systems only)		
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Instructions: Please indentify the facility or facilities for where the liquids, drilling flat than two facilities were utilized. Disposal Facility Name:			
Disposal Facility Name Disposa			
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations? Yes (If yes, please demonstrate compliance to the items below)			
Required for impacted areas which will not be used for future service and operations: Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique			
24			
Closure Report Attachment Checklist Instructions: Each of the following items must 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)	t be attached to the closure report. Please indicate, by a check		
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		
25			
Operator Closure Certification. I hereby certify that the information and attachments submitted with this closure report belief. I also certify that the closure complies with all applicable closure requirements at	is true, accurate and complete to the best of my knowledge and nd conditions specified in the approved closure plan.		
Name (Print):	Title.		
Signature:	Date:		
e mail address.	Telephone		



CLOSED-LOOP SYSTEM

Design Plan

The closed loop system will include a drying pad and sump to facilitate the collection of liquids derived from drill cuttings and an above ground steel holding tank suitable for generated cuttings and fluids during rig operations. The tank will be of sufficient volume to maintain a safe free board between disposal of the liquids and solids from rig operations.

- 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.

Operating 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.
- 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.

Closure Plan

The closed loop holding tank will be closed in accordance with 19.15.17.13. To accomplish this, all cuttings on the drying pad and any remaining fluids in the holding tank will be hauled to **Envirotech** (Permit # NM-01-0011) or **IEI/JFL Landfarm** (# NM-01-0010B) immediately following rig operations. The tanks will be removed from location as part of the rig move, and stacked cuttings to a commercial disposal site mentioned above. The APD Conditions of Approval will be followed for cite reclamation.

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	250	250	205
8 3/4	2800	2550	1065
7 7/8	7150	4350	1471

Estimated Gauge Hole Volume 2741

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

Waste Vol. Estimate for one cuttings pile

