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Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM106916

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No:

8. Lease Name and Well No.: E. LIVINGSTON 31 FEDERAL 8H (313373)

2. Name of Operator: REGENERATION ENERGY CORPORATION 280240

9. API Well No.: 30-025-45286

3a. Address: 808 W. Main Street Artesia NM 88210

3b. Phone No. *(include area code)*: (575)736-3535

10. Field and Pool, or Exploratory: SAND DUNES / BONE SPRING 53800

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: SWSE / 190 FSL / 2310 FEL / LAT 32.341265 / LONG -103.712768

At proposed prod. zone: NWNE / 330 FNL / 2310 FEL / LAT 32.354367 / LONG -103.712787

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 31 / T22S / R32E / 1PM

14. Distance in miles and direction from nearest town or post office*: 22.51 miles

12. County or Parish: ~~EDDY~~ Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 190 feet

16. No of acres in lease: 660.72

17. Spacing Unit dedicated to this well: 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1108 feet

19. Proposed Depth: 10812 feet / 14863 feet

20. BLM/BIA Bond No. in file: FED: NMB000764

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3512 feet

22. Approximate date work will start*: 09/01/2020

23. Estimated duration: 25 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	William Miller / Ph: (575)736-3535	07/17/2017

Title: Landman

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	09/10/2018

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

Application approval 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.

Conditions of approval, if any, are attached.

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.

Request OCD 10/23/18
Rec'd OCD 10/24/18

10/24/18

APPROVED WITH CONDITIONS

Approval Date: 09/10/2018

(Continued on page 2)

*(Instructions on page 2)

Double sided

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INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land, Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SWSE / 190 FSL / 2310 FEL / TWSP: 22S / RANGE: 32E / SECTION: 31 / LAT: 32.341265 / LONG: -103.712768 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSE / 667 FSL / 2274 FEL / TWSP: 22S / RANGE: 32E / SECTION: 31 / LAT: 32.358889 / LONG: -103.711944 (TVD: 10300 feet, MD: 10572 feet)
   BHL: NWNE / 330 FNL / 2310 FEL / TWSP: 22S / RANGE: 32E / SECTION: 31 / LAT: 32.354367 / LONG: -103.712787 (TVD: 10812 feet, MD: 14863 feet)

BLM Point of Contact

Name: Priscilla Perez
Title: Legal Instruments Examiner
Phone: 5752345934
Email: pperez@blm.gov

Approval Date: 09/10/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Pressure Rating (PSI): 3M **Rating Depth:** 16000

Equipment: After setting the 9 5/8" intermediate casing the following BOPE as provided for in Onshore Order #2 will be rigged up on the 9 5/8" intermediate casing spool (13 5/8" 2000 psi x 13 5/8" 3000 psi): 13 5/8" X 3000 psi annular, 13 5/8" X 3000 psi double ram type preventer with blind rams on top and 4 1/2" drill pipe rams on the bottom, choke, mud cross, choke manifold, 4" diameter choke line, 2" kill line, kelly cock, safety valve with proper subs for all drill string connections in use (see attached BOPE drawings).

Requesting Variance? NO

Variance request:

Testing Procedure: The BOPE including auxiliary equipment (chokes, choke manifold etc.) will be tested by independent tester. Test plug will be used and all BOPE tested to 250 psig/ 300 psig low pressure and 3000 psig high pressure for 10 minutes. Annular preventer will be tested to 1500 psig. BOP stack will be used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Any time a component of the BOP stack or choke manifold is changed or installed BOPE will be re-tested as required. All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string depth or 1500 psig, whichever is greater, but not to exceed 70 percent of casing's minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action will be taken. If H2S is monitored with 100 ppm in the gas stream while drilling intermediate, we will shut in and install a remote operated choke.

Choke Diagram Attachment:

3m_choke_20180103112129.pdf

BOP Diagram Attachment:

3m_BOP_20180103112140.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	870	0	870	3512	2642	870	J-55	54.5	STC	3.08	1.66	DRY	3.61	DRY	3.61
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3500	0	3500	3512	12	3500	J-55	36	BUTT	1.22	1.125	DRY	2.43	DRY	2.43
3	INTERMEDIATE	12.25	9.625	NEW	API	N	3500	4550	3500	4550	12	-1038	1050	N-80	40	BUTT	1.48	1.125	DRY	2.43	DRY	2.43
4	PRODUCTION	8.75	5.5	NEW	API	N	0	14863	0	10300	3512	-6788	14863	P-110	17	LTC	1.53	1.61	DRY	1.62	DRY	1.62

Casing Attachments

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

While_running_all_casing_strings_06-12-2017.docx

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

While_running_all_casing_strings_06-12-2017.docx

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

While_running_all_casing_strings_06-12-2017.docx

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

While_running_all_casing_strings_06-12-2017.docx

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	870	825	1.5	14.8	1235	100	ExtendaCem - C HalCem-C	2% calcium Chlordie, Pellet
INTERMEDIATE	Lead		0	4575	1210	1.88	12.9	1708	100	EconoCem-HLC	5% salt 1% calcium chloride, 0.125 lbm/sk Poly-E-Flake
INTERMEDIATE	Tail		3959	4575	300	1.34	14.8	303	100	HalCem	1% calcium chlordie, pellet
INTERMEDIATE	Lead		0	4575	1210	1.88	12.9	1708	100	EconoCem-HLC	5% salt 1% calcium choride, 0.125 lbm/sk Poly E Flake
INTERMEDIATE	Tail		3959	4575	300	1.34	14.8	303	100	HalCem	1% calcium chloride, Pellet
PRODUCTION	Lead		0	6500	1150	2.79	14.8	2403		NeoCem TM	NeoCem TM
PRODUCTION	Tail		0	0	1350	10.23	14.5	1242		versacem	.40% halad (r)-344 .25 lbm/sk D-Air 5000 .20%HR-800

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Section 5 - Circulating Medium

Mud System Type: Open

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: A 13 5/8" 2000 psi Hydril type annular preventer with mud cross, choke manifold, chokes, kill line, Kelly cock, safety valve and subs to fit all drill strings in use as provided for in Onshore Order #2 will be nippled up on the 13 3/8" x 2000 psi SOW X 13 5/8" x 2000 psi casing head (see attached BOPE drawings). This unit will be hydraulically operated and will be tested by independent tester using test plug to 250 psig/300 psig low and 1000 psig high. Choke line valve, chokes, upper Kelly cock valve , safety valve shall also be tested to 250 psig/300 psig low and 2000 psig high by independent tester. a. A Kelly cock will be in the drill string at all times. b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times. c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 ½" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached. After setting the 9 5/8" intermediate casing the following BOPE as provided for in Onshore Order #2 will be rigged up on the 9 5/8" intermediate casing spool (13 5/8" 2000 psi x 13 5/8" 3000 psi): 13 5/8" X 3000 psi annular, 13 5/8" X 3000 psi double ram type preventer with blind rams on top and 4 1/2" drill pipe rams on the bottom, choke, mud cross, choke manifold, 4" diameter choke line, 2" kill line, kelly cock, safety valve with proper subs for all drill string connections in use (see attached BOPE drawings). The BOPE including auxiliary equipment (chokes, choke manifold etc.) will be tested by independent tester. Test plug will be used and all BOPE tested to 250 psig/ 300 psig low pressure and 3000 psig high pressure for 10 minutes. Annular preventer will be tested to 1500 psig. BOP stack will be used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Any time a component of the BOP stack or choke manifold is changed or installed BOPE will be re-tested as required. All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string depth or 1500 psig, whichever is greater, but not to exceed 70 percent of casing's minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action will be taken. If H2S is monitored with 100 ppm in the gas stream while drilling intermediate, we will shut in and install a remote operated choke.

Describe the mud monitoring system utilized: • The necessary mud products for weight addition and fluid loss control will be on location at all times. • A visual and electronic mud monitoring system will be rigged up prior to spud to detect changes in the volume of mud system. The electronic system consists of a pit volume totalizer, stroke counter and flow sensor at flow line. • If weight and/or viscosity are introduced to the mud system a daily mud check will be performed by mud contractor, along with tourly check by rig personnel. • After setting intermediate casing, a third party gas unit detection system will be installed at the flow line.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
870	4550	SALT SATURATED	9.5	10.5							
0	870	WATER-BASED MUD	8	8.7							

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
4551	14863	OIL-BASED MUD	8.9	9.5							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

a. Drill stem tests will be based on geological sample shows.
b. If open hole electrical logging is performed, the program will be:
i. Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
ii. Total Depth to Surface: Compensated Neutron with Gamma Ray
iii. No coring program is planned
iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

List of open and cased hole logs run in the well:

CBL,CNL,DS

Coring operation description for the well:

No coring program is planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5003 **Anticipated Surface Pressure:** 2624.36

Anticipated Bottom Hole Temperature(F): 153

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Equipment_Schematic_20180103130903.pptx
H2S___Regen_20180403133818.doc

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

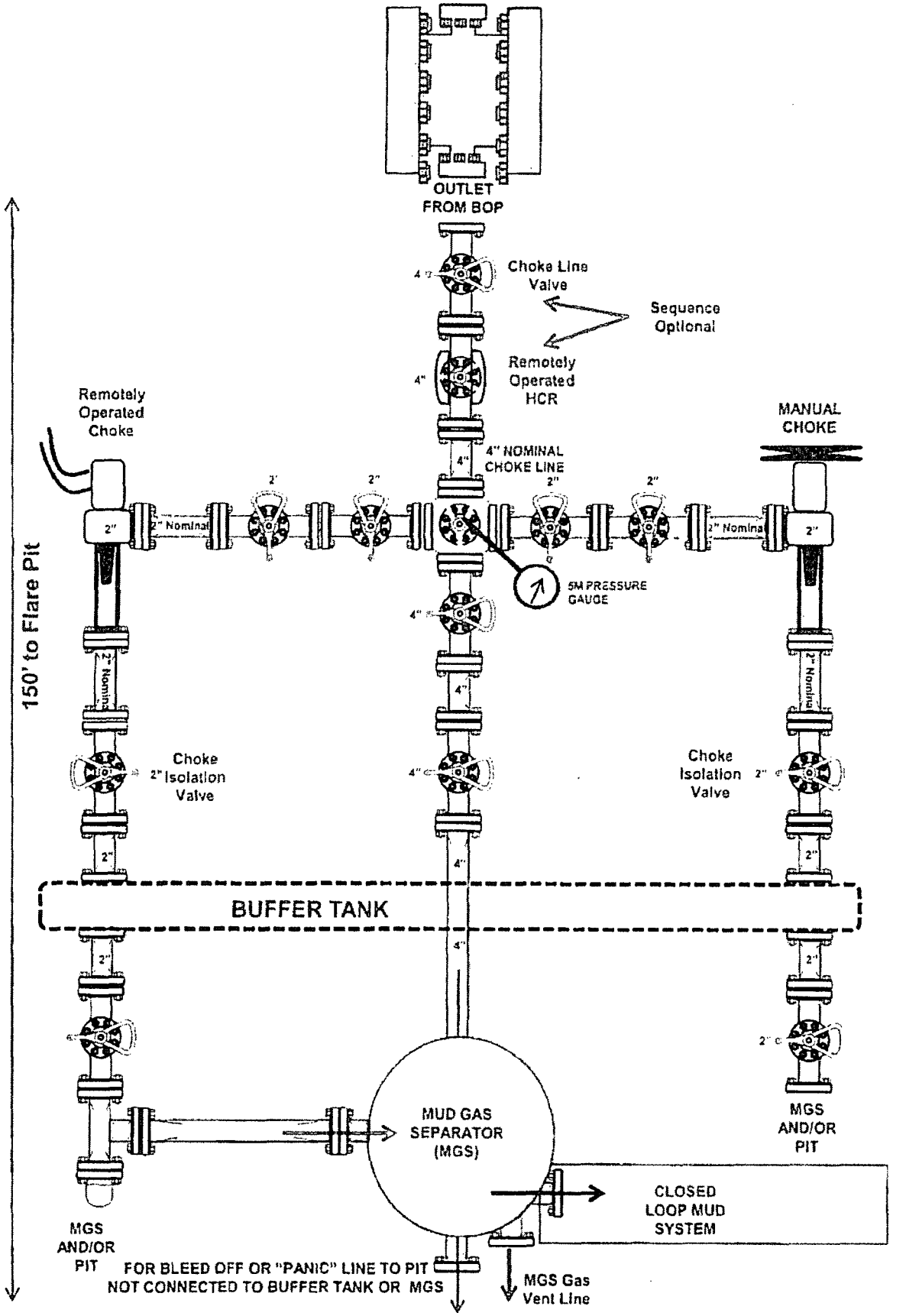
E_Livingston_31_Federal_8H_Well_Plan_Pln__2_Rpt_06-05-2017.pdf

Other proposed operations facets description:

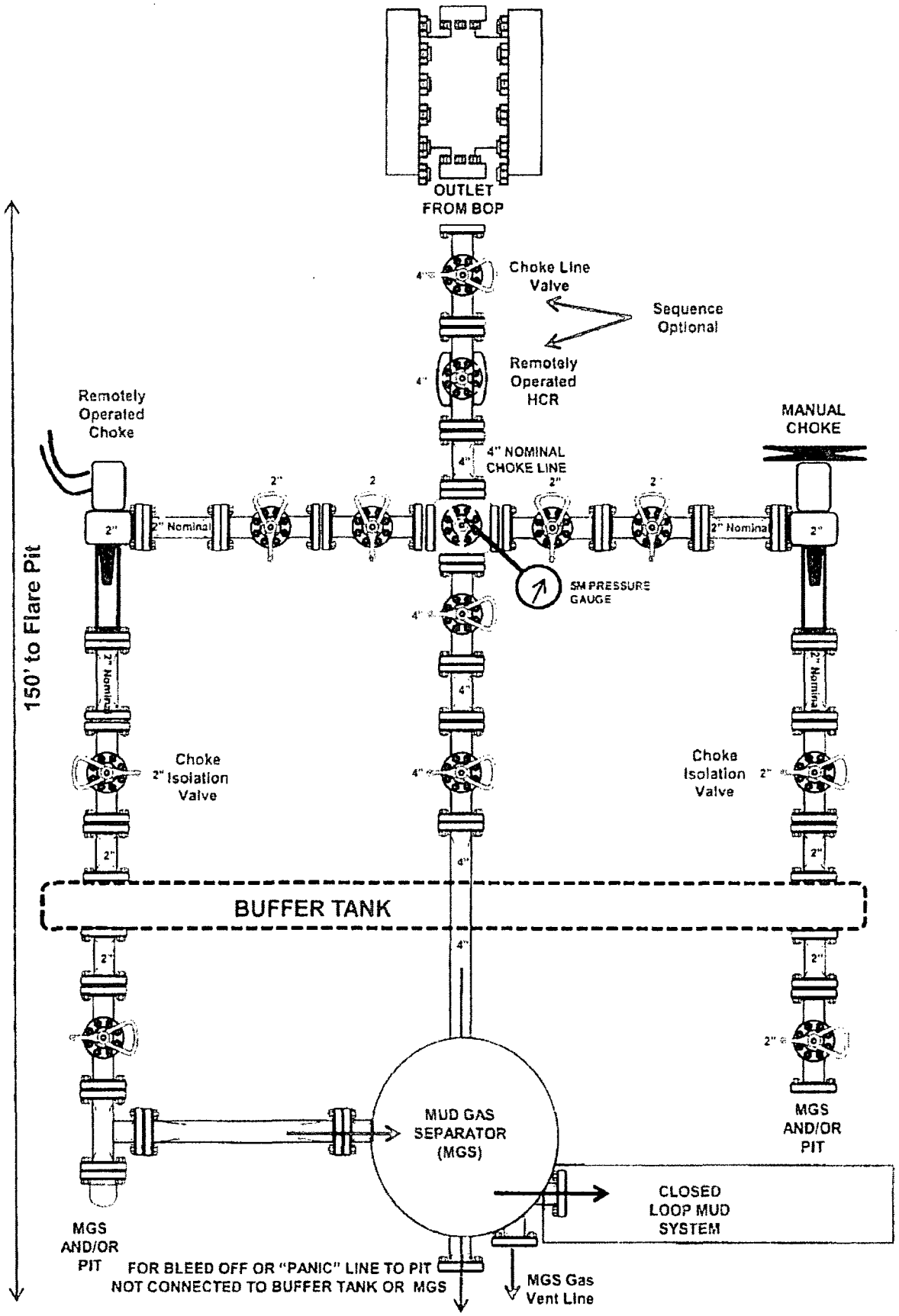
Other proposed operations facets attachment:

Other Variance attachment:

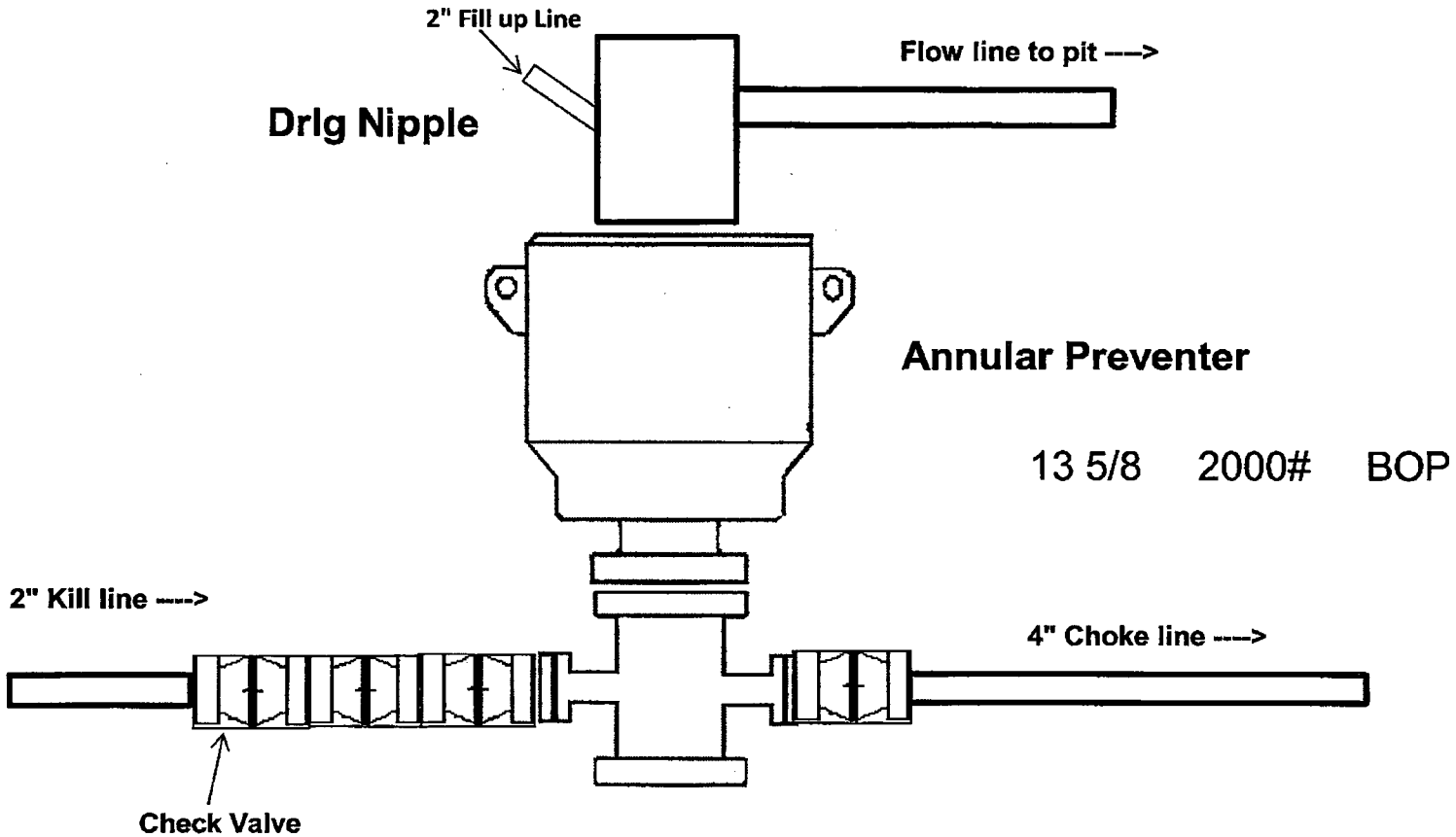
2M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



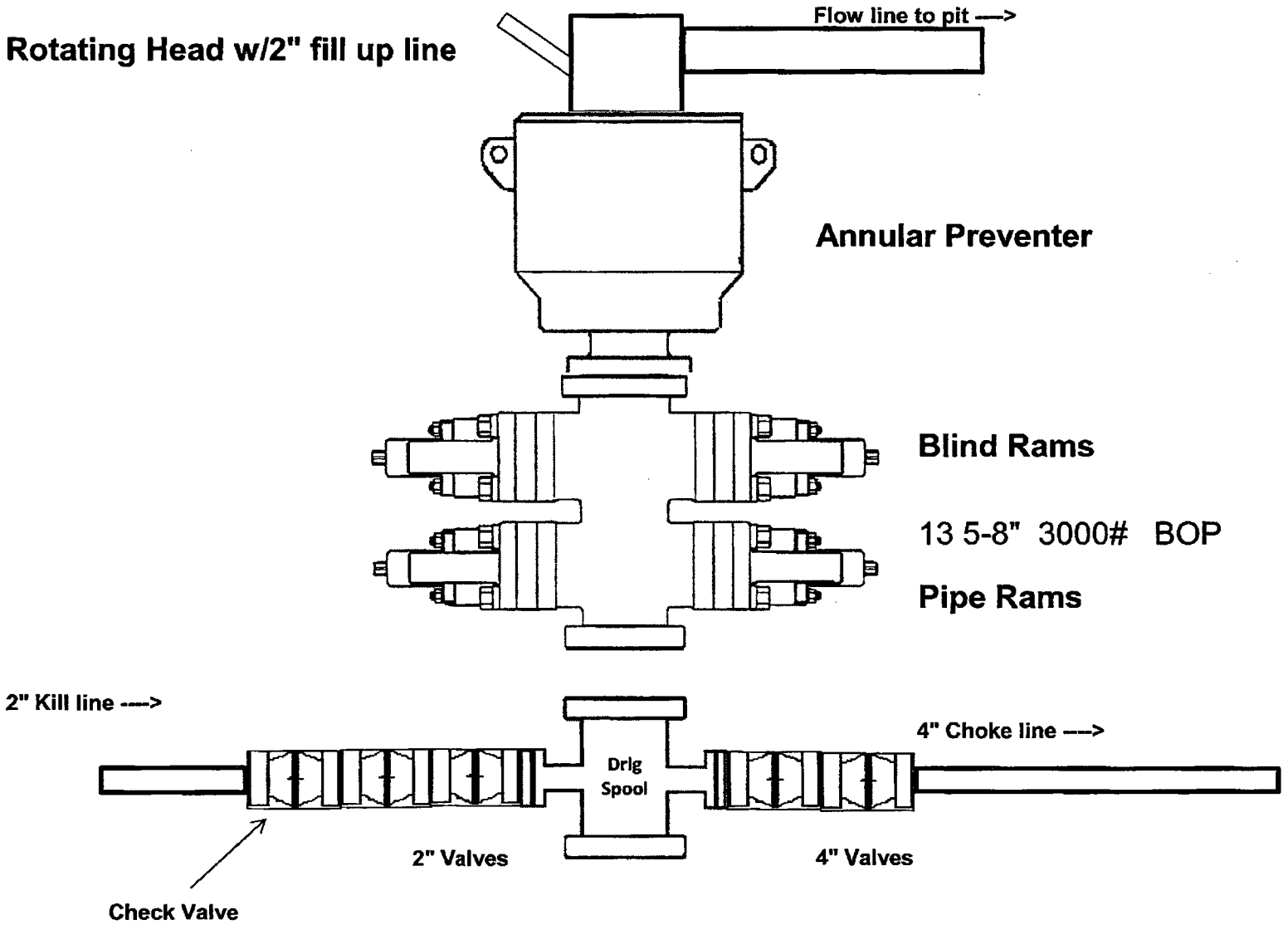
3M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



2,000 psi BOP Schematic



3,000 psi BOP Schematic



- While running all casing strings, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.

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New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: The top 6 inches of topsoil is pushed off and stockpiled along the side of the location

Access other construction information: Caliche will be obtained from an approved state,fee,federal caliche pit. Caliche materials will try and be obtained from a BLM caliche pit located at 32.40267 -103.72927 located just off Campbell Rd approx. 9 miles from location
Access miscellaneous information: n/a

Number of access turnouts: 1 **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: When necessary water will diverted to maintain surface and confirm to local drainage patterns
Road Drainage Control Structures (DCS) description: n/a

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

ELR_8H_Location_map_06-14-2017.pdf
ELivingstonRidge_SWDs_20180103143858.pdf
ELivingstonRidge_DelawareWells_20180103143905.pdf
ELivingstonRidge_BSPGWells_20180103143915.pdf
ELivingstonRidge_AllWells_20180103143922.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Use existing E Livingston lease battery located at the E. Livingston 31 Fed #6H in Sec. 31 T22S R32E 190 FSL 330 FWL Lea County, NM. No new construction or equipment will be needed to tie in 8H.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, SURFACE CASING **Water source type:** GW WELL

Describe type:

Source latitude: 32.42745 **Source longitude:** -103.660515

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: STATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 3000 **Source volume (acre-feet):** 0.3866793

Source volume (gal): 126000

Water source use type: SURFACE CASING **Water source type:** GW WELL

Describe type:

Source latitude: 32.42561 **Source longitude:** -103.6608

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 1000 **Source volume (acre-feet):** 0.12889309

Source volume (gal): 42000

Water source and transportation map:

MX_3100N_20170613_161343_06-13-2017.pdf
MX_3100N_20170613_161343_06-14-2017.pdf

Water source comments: rainwater will be used from state approved frac pond and also from rockhouse ranch LLC

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM approved caliche pit. Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to obtaining caliche. 2400 cubic yards is the maximum amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel: A. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location. B. An approximate 160' X 160' area is used within the proposed well site to remove caliche. C. Subsoil is removed and stockpiled within the surveyed well pad. D. When caliche is found, material will be stock piled within the pad site to build the location and road. E. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road. F. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. G. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat. In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site. B. Drilling fluids will be contained in steel mud pits.
Amount of waste: 500 barrels

Waste disposal frequency : Daily

Safe containment description: n/a

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
Disposal type description:

Disposal location description: R360 6601 Hobbs Hwy Carlsbad NM

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

MX_3100N_20170613_134542_06-13-2017.pdf
0200_E_Livingston_31_Federal_8H_Well_Site_Plan__600s__06-13-2017.pdf
flow_line_20180103091913.pdf
Comments: A new electric line will be surveyed. The one shown on the well site plat is incorrect and the electric line will be proposed at a later date and will not be part of this APD. It will be submitted separability. Thank you

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:**

Multiple Well Pad Number:

Recontouring attachment:

Interim_Reclamation_will_take_place_after_the_well_has_been_completed_06-13-2017.docx

Drainage/Erosion control construction: All road and pads will be built to conform with existing contours and culverts will be used if needed for drainage and ground will be ripped and seeded to prevent erosion.
Drainage/Erosion control reclamation: All road and pads will be built to conform with existing contours and culverts will be used if needed for drainage and ground will be ripped and seeded to prevent erosion.

Wellpad long term disturbance (acres): 1 **Wellpad short term disturbance (acres):** 2.14

Access road long term disturbance (acres): 0.8 **Access road short term disturbance (acres):** 0.8

Pipeline long term disturbance (acres): 0.024471993 **Pipeline short term disturbance (acres):** 0.024471993

Other long term disturbance (acres): 0 **Other short term disturbance (acres):** 0

Total long term disturbance: 1.824472 **Total short term disturbance:** 2.964472

Disturbance Comments: Poly gas/oil flowline will be tied into E Livingston 31 Federal 7H at 7H well pad.

Reconstruction method: Earth work will be done with dozers/dumptrucks and will take approx. 2 weeks.

Topsoil redistribution: Topsoil will be redistrbuted across well pad evenly

Soil treatment: soil will be ripped then seeded with blm approved seed mixed

Existing Vegetation at the well pad: A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: ANNUAL GRASS

Seed source: COMMERCIAL

Seed name: one of the approved BLM mix

Source name: H&R Enterprises, LLC

Source address: 1010 East Gamblin St Hobbs, NM 88240

Source phone: (575)605-3471

Seed cultivar: yes

Seed use location: WELL PAD,WELL PAD

PLS pounds per acre: 5

Proposed seeding season: AUTUMN

Seed Summary

Total pounds/Acre: 5

Seed Type	Pounds/Acre

ANNUAL GRASS	5

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: william **Last Name:** miller

Phone: (575)736-3535 **Email:** wmiller

Seedbed prep: disc

Seed BMP: n/a

Seed method: drill punch

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: weeds will be sprayed with roudnup when present

Weed treatment plan attachment:

Monitoring plan description: pumper will monitor location and roads and when needed, spray will be applied to restrict weeds

Monitoring plan attachment:

Success standards: weed treatment and monitoring will be to industry standard

Pit closure description: n/a

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

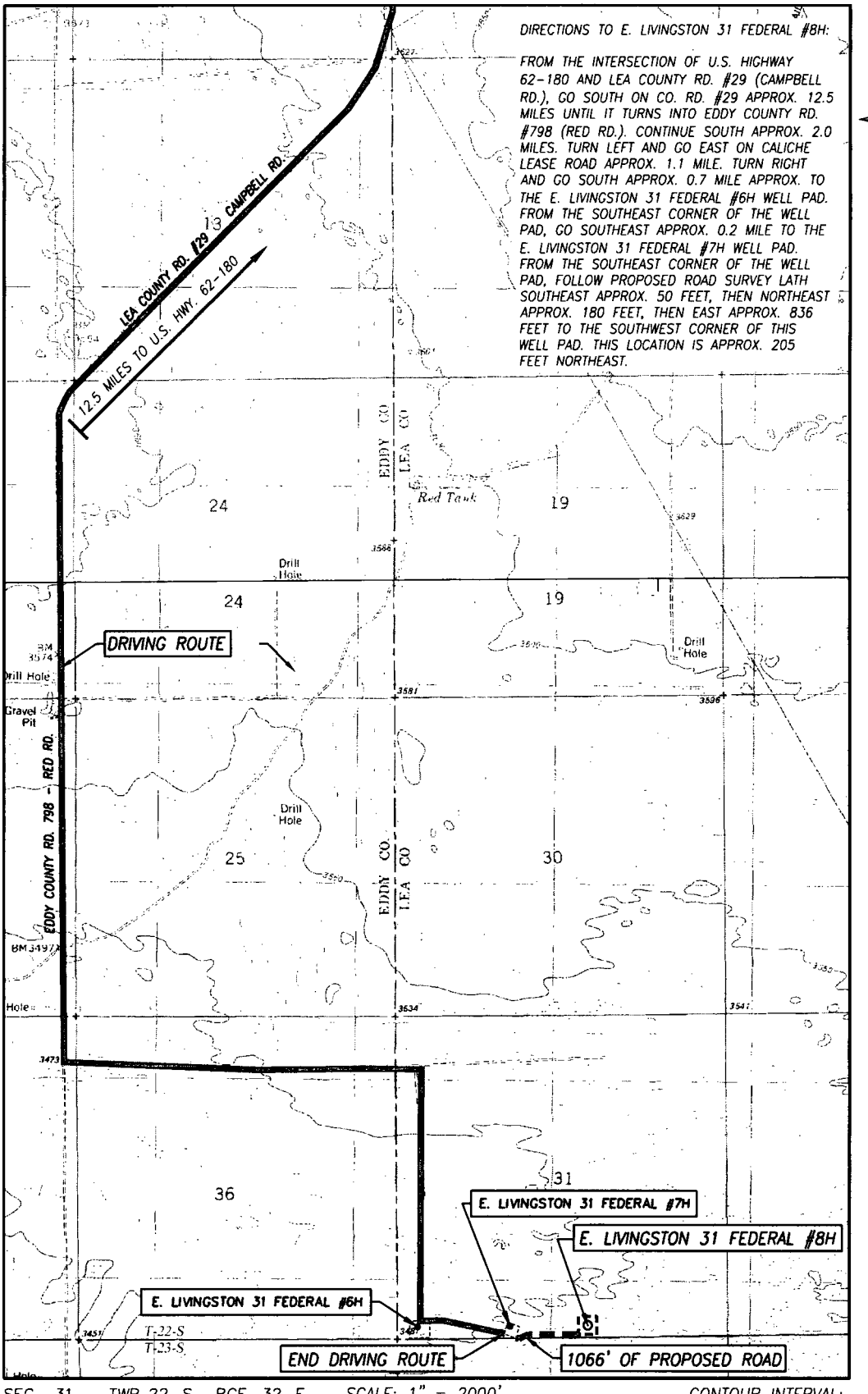
SUPO Additional Information:

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

TOPOGRAPHIC AND ACCESS ROAD MAP



SEC. 31 TWP. 22-S RGE. 32-E SCALE: 1" = 2000'
COUNTY LEA STATE NEW MEXICO
DESCRIPTION 190' FSL & 2310' FEL
ELEVATION 3512'
OPERATOR REGENERATION ENERGY CORPORATION
LEASE E. LIVINGSTON 31 FEDERAL
U.S.G.S. TOPOGRAPHIC MAP
BOOTLEG RIDGE, N.M. SURVEY N.M.P.M.

CONTOUR INTERVAL:
BOOTLEG RIDGE, N.M. - 10'
THE DIVIDE, N.M. - 10'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

A. Interim Reclamation will take place after the well has been completed. The pad will be downsized by reclaiming the areas not needed for production operations. The portions of the pad that are not needed for production operations will be re-contoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete.

B. Final Reclamation: Upon plugging and abandoning the well all caliche for well pad and lease road will be removed and surface will be recountoured to reflect its surroundings as much as possible. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be re-seeded with a BLM approved mixture and re-vegetated as per BLM orders.

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location: ONLEASE

PWD surface owner: BLM **PWD disturbance (acres):** 1

Injection PWD discharge volume (bbl/day): 150

Injection well mineral owner: FED

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit? YES

UIC Permit attachment:

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

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U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report
09/10/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000764

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

APD ID: 10400013943 **Submission Date:** 07/17/2017

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3512	0	0	ALLUVIUM	NONE	No
2	RUSTLER	2762	750	750	SALT	NONE	No
3	TOP SALT	2332	1180	1180	SALT	NONE	No
4	BASE OF SALT	-938	4450	4450	SALT	NONE	No
5	DELAWARE	-988	4500	4500	SANDSTONE	NATURAL GAS,OIL	No
6	BONE SPRING	-4898	8410	8410	SANDSTONE	NATURAL GAS,OIL	No
7	BONE SPRING 1ST	-6073	9585	9585	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING 2ND	-6638	10150	10150	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M **Rating Depth:** 5000

Equipment: A 13 5/8" 2000 psi Hydril type annular preventer with mud cross, choke manifold, chokes, kill line, Kelly cock, safety valve and subs to fit all drill strings in use as provided for in Onshore Order #2 will be nippled up on the 13 3/8" x 2000 psi SOW X 13 5/8" x 2000 psi casing head (see attached BOPE drawings).
Requesting Variance? NO

Variance request:

Testing Procedure: This unit will be hydraulically operated and will be tested by independent tester using test plug to 250 psig/300 psig low and 1000 psig high. Choke line valve, chokes, upper Kelly cock valve , safety valve shall also be tested to 250 psig/300 psig low and 2000 psig high by independent tester.

Choke Diagram Attachment:

2m_choke_20180103112108.pdf

BOP Diagram Attachment:

2m_BOP_20180103112117.pdf

APD ID: 10400013943 **Submission Date:** 07/17/2017

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

0200_E_Livingston_31_Federal_8H_topographical__access_rd_05-01-2017.pdf
road_map_20180103075245.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

0497TOPO_05-01-2017.pdf
road_map_20180103075344.pdf

New road type: RESOURCE

Length: 1009 Feet **Width (ft.):** 30

Max slope (%): 33 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 15

New road access erosion control: The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns. A. The average grade will be less than 1%. B. No turnouts are planned. C. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary. D. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM approved caliche pit.

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

09/10/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: William Miller **Signed on:** 05/02/2017

Title: Landman

Street Address: 808 W. Main St.

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)736-3535

Email address: wmiller@pvtn.net

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

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U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report
09/10/2018

APD ID: 10400013943 **Submission Date:** 07/17/2017

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400013943 **Tie to previous NOS?** **Submission Date:** 07/17/2017

BLM Office: CARLSBAD **User:** William Miller **Title:** Landman

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM106916 **Lease Acres:** 660.72

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** REGENERATION ENERGY CORPORATION

Operator letter of designation:

Operator Info

Operator Organization Name: REGENERATION ENERGY CORPORATION

Operator Address: 808 W. Main Street **Zip:** 88210

Operator PO Box: PO Box 210

Operator City: Artesia **State:** NM

Operator Phone: (575)736-3535

Operator Internet Address: wmiller@pvtn.net

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** SAND DUNES **Pool Name:** BONE SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,OIL

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: SINGLE WELL **Multiple Well Pad Name:** **Number:**

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: CONFIRMATION

Describe sub-type:

Distance to town: 22.51 Miles **Distance to nearest well:** 1108 FT **Distance to lease line:** 190 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: 0200_E_Livingston_31_Federal_8H_vicinity_map_05-22-2017.pdf

C102A_20180510083315.pdf

Well work start Date: 09/01/2020 **Duration:** 25 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NGVD29

Survey number: 3239

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	190	FSL	2310	FEL	22S	32E	31	Aliquot SWSE	32.341265	-103.712768	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 106916	3512	0	0
KOP Leg #1	190	FSL	2310	FEL	22S	32E	31	Aliquot SWSE	32.341265	-103.712768	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 106916	-6310	9822	9822
PPP Leg #1	667	FSL	2274	FEL	22S	32E	31	Aliquot SWSE	32.358889	-103.711944	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 106916	-6788	10572	10300

Operator Name: REGENERATION ENERGY CORPORATION

Well Name: E. LIVINGSTON 31 FEDERAL **Well Number:** 8H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FNL	2310	FEL	22S	32E	31	Aliquot NWNE	32.354367	-103.712787	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 106916	-6788	14863	10300
BHL Leg #1	330	FNL	2310	FEL	22S	32E	31	Aliquot NWNE	32.354367	-103.712787	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 106916	-7300	14863	10812