

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**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.
2. Name of Operator		9. API Well No. <b>30-015-49203</b>
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
13. State		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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.<br>2. A Drilling Plan.<br>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).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

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.



(Continued on page 2)

\*(Instructions on page 2)

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720

District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-015-49203</b>	<sup>2</sup> Pool Code <b>98220</b>	<sup>3</sup> Pool Name PURPLE SAGE; WOLFCAMP
<sup>4</sup> Property Code <b>327168</b>	<sup>5</sup> Property Name PHANTOM BANK 31 FED COM	<sup>6</sup> Well Number 701H
<sup>7</sup> OGRID No. <b>374034</b>	<sup>8</sup> Operator Name FLAT CREEK RESOURCES, LLC	<sup>9</sup> Elevation 3135'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	32	26 SOUTH	31 EAST, N.M.P.M.		550'	NORTH	400'	WEST	EDDY

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L1	31	26 SOUTH	31 EAST, N.M.P.M.		330'	NORTH	30'	WEST	EDDY

<sup>12</sup> Dedicated Acres 264.48	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p><sup>16</sup></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>PROPOSED LAST TAKE POINT</b></p> <p>X= 657,472 Y= 365,916 LAT. 32.005001 N LONG. 103.825326 W NAD 27</p> <p>X= 698,659 Y= 365,974 LAT. 32.005126 N LONG. 103.825801 W NAD83/86</p> </div> <div style="width: 45%;"> <p><b>PROPOSED FIRST TAKE POINT</b></p> <p>X= 662,605 Y= 365,990 LAT. 32.005135 N LONG. 103.808766 W NAD 27</p> <p>X= 703,792 Y= 366,047 LAT. 32.005260 N LONG. 103.809240 W NAD83/86</p> </div> </div> <p style="text-align: center;"><b>CORNER COORDINATES TABLE (NAD 27)</b></p> <p>A - Y=366245.06, X=657370.11 B - Y=366283.60, X=660040.51 C - Y=366321.04, X=662703.16 D - Y=366332.89, X=665368.25 E - Y=364109.66, X=657381.51 F - Y=364123.23, X=660052.17 G - Y=364137.17, X=662715.32</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>PROPOSED BOTTOM HOLE LOCATION</b></p> <p>X= 657,402 Y= 365,915 LAT. 32.004999 N LONG. 103.825552 W NAD 27</p> <p>X= 698,589 Y= 365,973 LAT. 32.005124 N LONG. 103.826027 W NAD83/86</p> </div> <div style="width: 45%;"> <p><b>PHANTOM BANK 31 FED COM NO. 701H WELL</b></p> <p>X= 663,106 Y= 365,773 LAT. 32.004532 N LONG. 103.807153 W NAD 27</p> <p>X= 704,293 Y= 365,830 LAT. 32.004657 N LONG. 103.807627 W NAD83/86</p> <p>ELEV. +3135' NAVD88</p> </div> </div>	<p><b><sup>17</sup> OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><u>Rodney Littleton</u> 08/12/2021 Signature Date</p> <p><b>Rodney Littleton</b> Printed Name</p> <p>rodney.littleton@flatcreekresources.com E-mail Address</p> <p><b><sup>18</sup> SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>02/26/2019 Date of Survey</p> <p>Signature and Seal of Professional Surveyor:  Steven M. Coleman Certificate Number</p>
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State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** Flat Creek Resources, LLC **OGRID:** 374034 **Date:** 01 / 19 / 22

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Phantom Bank 31 Fed Com 501H		D-32-T26S-R31E	700' FNL 300' FWL	1049	5250	6300
Phantom Bank 31 Fed Com 701H		D-32-T26S-R31E	610' FNL 300' FWL	770	3850	2700
Phantom Bank 31 Fed Com 702H		D-32-T26S-R31E	640' FNL 300' FWL	1049	5250	6300
Phantom Bank 31 Fed Com 703H		D-32-T26S-R31E	670' FNL 300'FWL	770	3850	2700

**IV. Central Delivery Point Name:** Phantom Bank Battery [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Phantom Bank 31 Fed Com 501H		01/19/22	03/01/22	04/20/22	06/15/22	07/01/22
Phantom Bank 31 Fed Com 701H		01/20/22	04/10/22	04/20/22	06/15/22	07/01/22
Phantom Bank 31 Fed Com 702H		01/20/22	03/15/22	04/20/22	06/15/22	07/01/22
Phantom Bank 31 Fed Com 703H		01/21/22	03/30/22	04/20/22	06/15/22	07/01/22

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

## **Section 2 – Enhanced Plan**

### **EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

#### **IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

#### **X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: <i>Rodney Littleton</i>
Printed Name: Rodney Littleton
Title: VP of Operations
E-mail Address: rodney.littleton@flatcreekresources.com
Date: 01/19/22
Phone: 817-310-8578
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

## VI. SEPARATION EQUIPMENT

Flat Creek Resources, LLC, will install:

- four 48" OD x 15', 500#, 3 phase separators
- one 96" OD x 20', 250# heater treater
- four 750 BBL water tanks
- three 750 BBL oil tanks
- one 15'6" x 30', 1000 BBL gun barrel
- one 72" OD x 15' gas scrubber
- one vapor recovery tower
- one vapor recovery unit
- vapor recovery piping for oil and water tanks

System is designed to capture 120% of the expected gas volume from separation all the way through the vapor recovery equipment.

## VII. OPERATIONAL PRACTICES

### NMAC 19.15.27.8 (A) Venting & Flaring of Natural Gas

1. Flat Creek Resources will comply with NMAC 19.15.27.8 – venting and flaring of gas during drilling, completion, or production that constitutes waste as defined in 19.15.2 is banned.

### NMAC 19.15.27.8 (B) Venting & Flaring During Drilling

1. Flat Creek will combust gas if technically feasible during drilling operations using best industry practices.
2. A flare stack with a 100% capacity for expected volume will be set on the pad greater than 100 feet from the nearest well head and storage tank.
3. In an emergency, Flat Creek will vent the gas in order to avoid substantial impact. Flat Creek will report vented or flared gas to the NMOCD.

### NMAC 19.15.27.8 (C) Venting & Flaring During Completion or Recompletion

1. Facilities will be built and ready from the first day of flowback.
2. Test separator will properly separate gas and liquids. Temporary test separator will be used initially to process volumes. In addition, separator will be tied into flowback tanks which will be tied into the gas processing equipment for sale down a pipeline.
3. Should the facility not be ready to process gas or the gas does not meet quality standards then the flowback will be delayed until the facility and pipeline are ready.

### NMAC 19.15.27.8 (D) Venting & Flaring During Production

Flat Creek will not vent or flare natural gas except:

1. During and emergency or malfunction.
2. To unload or clean-up liquid holdup in a well to atmospheric pressure, provided
  - a. Flat Creek does not vent after the well achieves a stabilized rate and pressure
  - b. Flat Creek will be on-site while unloading liquids by manual purging and take all reasonable actions to achieve a stabilized rate and pressure as soon as possible
  - c. Flat Creek will optimize the system to minimize gas venting if the well is equipped with a plunger lift or auto control system
  - d. Best management practices will be used during downhole well maintenance
3. During the following activities unless prohibited
  - a. Gauging or sampling a storage tank or low-pressure production vessel
  - b. Loading out liquids from a storage tank
  - c. Repair and maintenance
  - d. Normal operations of a gas-activated pneumatic controller or pump
  - e. Normal operation of a storage tank but not including venting from a thief hatch
  - f. Normal operation of a dehydration units
  - g. Normal operations of compressors, engines, turbines, valves, flanges, & connectors
  - h. During bradenhead, packer leakage test, or production test lasting less than 24 hours
  - i. When natural gas does not meet the gathering line specifications



- j. Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities

#### NMAC 19.15.27.8 (E) Performance Standards

1. Flat Creek used a safety factor to design the separation and storage equipment. The equipment will be routed to a vapor recovery system and uses a flare as back up to startup, shutdown, maintenance, or malfunction of the VRU system.
2. Flat Creek will install a flare that will handle the full volume of vapors from the facility in case of VRU failure. It will have an auto-ignition system.
3. Flare stacks will be appropriately sized and designed to ensure proper combustion efficiency
  - a. Flare stacks installed or replaced will be equipped with an automatic ignitor or continuous pilot.
  - b. Flare stacks will be located greater than 100 feet from well head and storage tanks and securely anchored
4. Flat Creek will conduct an AVO inspection on all components for leaks and defects every week.
5. Flat Creek will make and keep records of AVO inspection available to the NMOCD for at least 5 years.
6. Flat Creek may use a remote or automated monitoring technology to detect leaks and releases in lieu of AVO inspections with prior NMOCD approval.
7. Facilities will be designed to minimize waste.
8. Flat Creek will resolve emergencies as promptly as possible.

#### NMAC 19.15.27.8 (F) Measuring or Estimating Vented and Flared Natural Gas

1. Flat Creek will have meters on both the low pressure and high-pressure sides of the flares. Volumes will be recorded in the SCADA system.
2. Flat Creek will install equipment to measure the volume of flared natural gas that has an average production of greater than 60 MCFD.
3. Flat Creek's measuring equipment will conform to industry standards.
4. Measurement system will be designed such that it cannot be bypassed except for inspections and servicing the meters.
5. Flat Creek will estimate the volume of vented or flared gas using a methodology that can be independently verified if metering is not practicable due to low flow rate or pressure.
6. Flat Creek will estimate the volume of vented and/or flared gas based on the results of an annual GOR test for wells that do not require measuring equipment reported on form C-116.
7. Flat Creek will install measuring equipment whenever the NMOCD determines that metering is necessary.

### **VIII. BEST MANAGEMENT PRACTICES**

Flat Creek Resources, LLC, will minimize venting during maintenance by:

1. System will be designed and operated to route storage tank and process equipment emissions to the VRU. If the VRU is not operable, then the vapors will be routed to the flare.
2. Scheduling maintenance for multiple tasks to minimize the need for blowdowns.
3. After completion of maintenance, gas will be flared until it meets pipeline specifications.



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

# Drilling Plan Data Report

11/23/2021

APD ID: 10400066622

Submission Date: 12/31/2020

Highlighted data  
reflects the most  
recent changes

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM

Well Number: 701H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1233175	---	3160	25	25	SANDSTONE, SHALE	NONE	N
1233176	RUSTLER	2358	802	802	ANHYDRITE	NONE	N
1233177	TOP SALT	1581	1579	1579	SALT	NONE	N
1233178	BASE OF SALT	-397	3557	3557	ANHYDRITE	NONE	N
1233179	LAMAR	-614	3774	3774	LIMESTONE, SHALE	NATURAL GAS, OIL	N
1233180	BELL CANYON	-652	3812	3812	SANDSTONE, SHALE	NATURAL GAS, OIL	N
1233181	CHERRY CANYON	-1560	4720	4720	SANDSTONE, SHALE	NATURAL GAS, OIL	N
1233182	BRUSHY CANYON	-2861	6021	6021	SANDSTONE, SHALE	NATURAL GAS, OIL	N
1233183	BONE SPRING LIME	-4545	7705	7705	LIMESTONE	NATURAL GAS, OIL	N
1233184	FIRST BONE SPRING SAND	-5471	8631	8631	SANDSTONE	NATURAL GAS, OIL	N
1233185	BONE SPRING 2ND	-5760	8920	8920	LIMESTONE, SHALE	NATURAL GAS, OIL	N
1233186	BONE SPRING 2ND	-6113	9273	9273	SANDSTONE	NATURAL GAS, OIL	N
1233187	BONE SPRING 3RD	-6758	9918	9918	LIMESTONE, SHALE	NATURAL GAS, OIL	N
1233188	BONE SPRING 3RD	-7426	10586	10586	SANDSTONE	NATURAL GAS, OIL	N
1233189	WOLFCAMP	-7821	10981	10982	SANDSTONE, SHALE	NATURAL GAS, OIL	N
1236826	WOLFCAMP	-7989	11149	11162	LIMESTONE, SHALE	NATURAL GAS, OIL	Y
1236827	WOLFCAMP	-8281	11441	11774	LIMESTONE, SHALE	NATURAL GAS, OIL	Y

**Operator Name:** FLAT CREEK RESOURCES LLC**Well Name:** PHANTOM BANK 31 FED COM**Well Number:** 701H**Section 2 - Blowout Prevention****Pressure Rating (PSI):** 10M**Rating Depth:** 20000**Equipment:** 5M Choke Manifold Equipment, kill line, annular 10M Pipe rams and blind rams Rotating head**Requesting Variance?** YES**Variance request:** Variance is requested to use a co-flex line between the BOP and choke manifold instead of using a 4" O.D. steel line. Choke and kill line data book is attached.**Testing Procedure:** All testing will be done in accordance with Onshore Order 2 III.B.1.h. 1. Use water to test BOPs. 2. Make up testing assembly and set in into a wellhead profile. Ensure that the casing valve must be left opened and there must be personnel monitoring the outlet of casing valve all time while testing. You must ensure that personnel who monitor the outlet must stay for from the BOP while it is being tested. The reason behind this step is to prevent pressure build up in the casing if the test plug is leaking. 3. Circulate through choke/kill lines, choke manifold, standpipe manifold, and valves to ensure that all lines are full with water. This practice is for preventing pressure dropping off while testing. 4. Line up cement unit and rig team shut rams and valves as per each rig specific testing sequence 5. Pressure test must be low and high, respectively, and the pressure should be stabilized with minimum bleed off at least 5 minutes. Ensure that pressure recording on a chart is recorded correctly. 6. Ensure that any equipment does not pass a pressure test requirement must be reported to supervisors. 7. Continue pressure testing until all equipment is tested as per each rig specific. 8. Rig down testing assembly. 9. All tests and drills to be recorded in the drilling log. High Test Low Test Test Duration Wellhead test 5000 psi 250 psi 10 min BOP rams 5000 psi 250 psi 10 min Annular 3500 psi 250 psi 10 min HCR 5000 psi 250 psi 10 min Manifold 5000 psi 250 psi 10 min Upper/Lower Kelly Valve 5000 psi 250 psi 10 min TIW safety valves/dart 5000 psi 250 psi 10 min Standpipe/mudlines 5000 psi 250 psi 10 min Orbit valve/rotating head 300 psi 10 min Surface casing 1500 psi 10 min**Choke Diagram Attachment:**

Choke\_Diagram\_final\_20201210084512.pdf

Choke\_Hose\_SN\_60197\_API\_16C\_20211011083214.pdf

API\_16C\_Hose\_Cert\_20211011083225.jpg

**BOP Diagram Attachment:**

BOP\_Modified\_13\_10M\_20210809124903.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	1150	0	1150	3135	1985	1150	J-55	54.5	ST&C	2.1	7.1	DRY	13.6	DRY	14.5
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5400	0	5400	3130	-2265	5400	N-80	43.5	BUTT	1.5	3.5	DRY	4.2	DRY	4.3
3	PRODUCTION	8.75	5.5	NEW	API	N	0	16929	0	11390	3130	-8255	16929	P-110	23	BUTT	12.7	6.2	DRY	2.1	DRY	2.1

**Operator Name:** FLAT CREEK RESOURCES LLC**Well Name:** PHANTOM BANK 31 FED COM**Well Number:** 701H**Casing Attachments**

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**Casing ID:** 1      **String Type:** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**701H\_Casing\_design\_20201228100638.xlsx

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**Casing ID:** 2      **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**701H\_Casing\_design\_20201228100703.xlsx

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**Casing ID:** 3      **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**701H\_Casing\_design\_20201228100723.xlsx

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**Section 4 - Cement**

**Operator Name:** FLAT CREEK RESOURCES LLC**Well Name:** PHANTOM BANK 31 FED COM**Well Number:** 701H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1150	585	1.89	12.9	197	125	Extended	Kol-Seal (LCM), Poly-E-Flake (LCM)
SURFACE	Tail		0	1150	490	1.33	14.8	47	125	C	Kol-Seal (LCM), Poly-E-Flake (LCM)
INTERMEDIATE	Lead		0	5400	1345	1.75	13.5	419	100	Extended	Kol-Seal (LCM), Poly-E-Flake (LCM), HR-800 (Retarder)
INTERMEDIATE	Tail		0	5400	565	1.35	14.8	135	100	C	Kol-Seal (LCM), poly-E-Flake (LCM), HR-800 (Retarder)
PRODUCTION	Lead		0	1692 9	830	2.13	11.8	314	35	NeoCem	Kol-Seal (LCM), Poly-E-Flake (LCM), WellLife 1094 (Polymer fiber)
PRODUCTION	Tail		0	1692 9	1365	1.44	13.2	1966	35	NeoCem	WellLife 1094 (Polymer fiber)

### Section 5 - Circulating Medium

**Mud System Type:** Closed**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:** 10k BOPE, with pipe rams, blind rams, variable pipe rams, and 5k annular**Describe the mud monitoring system utilized:** Pason PVT

### 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
0	1150	SPUD MUD	9	9.4	67.3		9		500		
1150	5400	SALT SATURATED	9.8	10	74.8		9		180000		

**Operator Name:** FLAT CREEK RESOURCES LLC**Well Name:** PHANTOM BANK 31 FED COM**Well Number:** 701H

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
5400	1692 9	OIL-BASED MUD	9	10.5	67.3				300000	10	

### Section 6 - Test, Logging, Coring

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

Gamma Ray Log, Resistivity Log

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

GAMMA RAY LOG,DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGICAL LITHOLOGY LOG,

**Coring operation description for the well:**

None

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6293

**Anticipated Surface Pressure:** 3787

**Anticipated Bottom Hole Temperature(F):** 200

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

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

H2S\_Plan\_20201210124626.docx

H2S\_pad\_layout\_20201210124615.docx

Phantom\_1mi\_2mi\_H2S\_Buffers\_20201210124606.pdf

**Operator Name:** FLAT CREEK RESOURCES LLC

**Well Name:** PHANTOM BANK 31 FED COM

**Well Number:** 701H

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

PRE\_STAKE\_DETAIL\_20201210130526.pdf

701H\_TOPS\_20201228100904.pdf

MIN\_CURV\_701H\_20201228100912.pdf

**Other proposed operations facets description:**

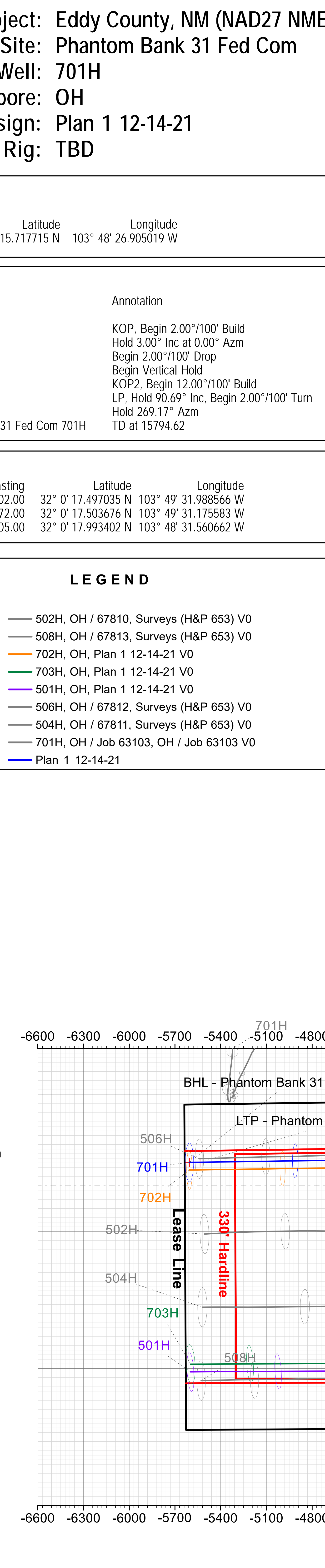
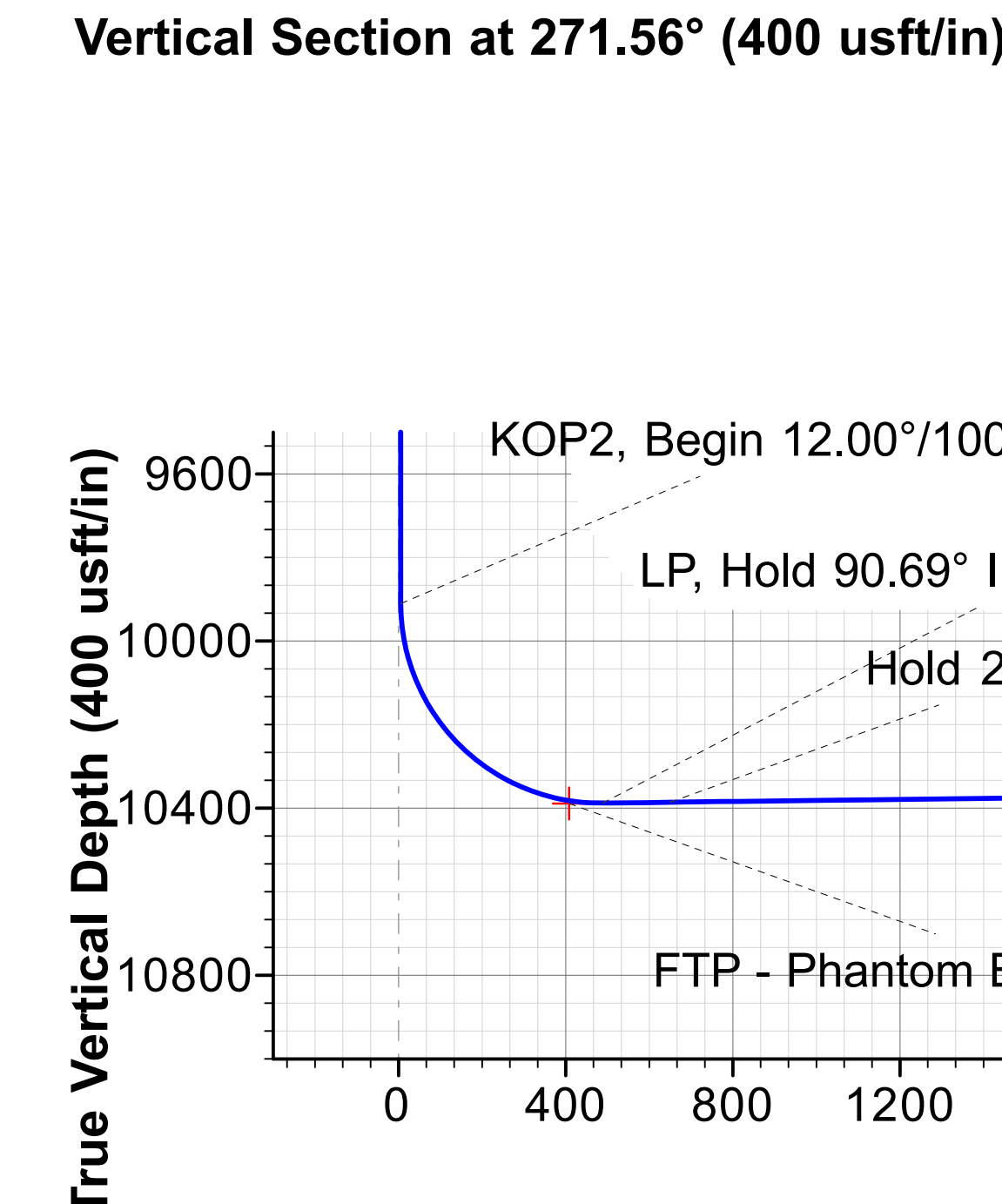
Wellhead equipment

**Other proposed operations facets attachment:**

Cactus\_Wellhead\_Equipment\_20201210125113.pdf

**Other Variance attachment:**









## **Flat Creek Resources, LLC**

**Eddy County, NM (NAD27 NME)**

**Phantom Bank 31 Fed Com**

**701H**

**OH**

**Plan: Plan 1 12-14-21**

## **Standard Planning Report**

**14 December, 2021**





## Planning Report



<b>Database:</b>	USA Compass	<b>Local Co-ordinate Reference:</b>	Well 701H
<b>Company:</b>	Flat Creek Resources, LLC	<b>TVD Reference:</b>	RKB @ 3155.00usft (TBD)
<b>Project:</b>	Eddy County, NM (NAD27 NME)	<b>MD Reference:</b>	RKB @ 3155.00usft (TBD)
<b>Site:</b>	Phantom Bank 31 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1 12-14-21		

<b>Project</b>	Eddy County, NM (NAD27 NME)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

Site	Phantom Bank 31 Fed Com					
Site Position:		Northing:	364,789.00 usft	Latitude:	32° 0' 6.583176 N	
From:	Map	Easting:	663,012.00 usft	Longitude:	103° 48' 26.899092 W	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.28

Well	701H					
Well Position	+N/-S	923.00 usft	Northing:	365,712.00 usft	Latitude:	32° 0' 15.717715 N
	+E/-W	-5.00 usft	Easting:	663,007.00 usft	Longitude:	103° 48' 26.905019 W
Position Uncertainty		1.00 usft	Wellhead Elevation:		Ground Level:	3,129.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	MVHD	2/13/2022	6.45	59.49	47,415.95341741

<b>Design</b>	Plan 1 12-14-21			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	271.56

<b>Plan Survey Tool Program</b>	<b>Date</b>	12/14/2021		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	15,793.88	Plan 1 12-14-21 (OH)	MWD+HRGM
				OWSG MWD + HRGM

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,150.00	3.00	0.00	4,149.93	3.93	0.00	2.00	2.00	0.00	0.00	
7,870.00	3.00	0.00	7,864.83	198.62	0.00	0.00	0.00	0.00	0.00	
8,020.00	0.00	0.00	8,014.76	202.54	0.00	2.00	-2.00	0.00	180.00	
9,915.74	0.00	0.00	9,910.50	202.54	0.00	0.00	0.00	0.00	0.00	
10,671.49	90.69	272.40	10,387.93	222.78	-482.79	12.00	12.00	0.00	272.40	
10,833.04	90.69	269.17	10,385.99	224.99	-644.30	2.00	0.00	-2.00	-90.00	
15,794.62	90.69	269.17	10,326.33	153.00	-5,605.00	0.00	0.00	0.00	0.00	BHL - Phantom Bank



## Planning Report



<b>Database:</b>	USA Compass	<b>Local Co-ordinate Reference:</b>	Well 701H
<b>Company:</b>	Flat Creek Resources, LLC	<b>TVD Reference:</b>	RKB @ 3155.00usft (TBD)
<b>Project:</b>	Eddy County, NM (NAD27 NME)	<b>MD Reference:</b>	RKB @ 3155.00usft (TBD)
<b>Site:</b>	Phantom Bank 31 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1 12-14-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>KOP, Begin 2.00°/100' Build</b>									
4,100.00	2.00	0.00	4,099.98	1.75	0.00	0.05	2.00	2.00	0.00
4,150.00	3.00	0.00	4,149.93	3.93	0.00	0.11	2.00	2.00	0.00
<b>Hold 3.00° Inc at 0.00° Azm</b>									
4,200.00	3.00	0.00	4,199.86	6.54	0.00	0.18	0.00	0.00	0.00
4,300.00	3.00	0.00	4,299.73	11.78	0.00	0.32	0.00	0.00	0.00
4,400.00	3.00	0.00	4,399.59	17.01	0.00	0.46	0.00	0.00	0.00
4,500.00	3.00	0.00	4,499.45	22.24	0.00	0.61	0.00	0.00	0.00
4,600.00	3.00	0.00	4,599.31	27.48	0.00	0.75	0.00	0.00	0.00
4,700.00	3.00	0.00	4,699.18	32.71	0.00	0.89	0.00	0.00	0.00
4,800.00	3.00	0.00	4,799.04	37.94	0.00	1.04	0.00	0.00	0.00
4,900.00	3.00	0.00	4,898.90	43.18	0.00	1.18	0.00	0.00	0.00
5,000.00	3.00	0.00	4,998.77	48.41	0.00	1.32	0.00	0.00	0.00
5,100.00	3.00	0.00	5,098.63	53.65	0.00	1.46	0.00	0.00	0.00
5,200.00	3.00	0.00	5,198.49	58.88	0.00	1.61	0.00	0.00	0.00
5,300.00	3.00	0.00	5,298.36	64.11	0.00	1.75	0.00	0.00	0.00
5,400.00	3.00	0.00	5,398.22	69.35	0.00	1.89	0.00	0.00	0.00
5,500.00	3.00	0.00	5,498.08	74.58	0.00	2.04	0.00	0.00	0.00
5,600.00	3.00	0.00	5,597.94	79.81	0.00	2.18	0.00	0.00	0.00
5,700.00	3.00	0.00	5,697.81	85.05	0.00	2.32	0.00	0.00	0.00
5,800.00	3.00	0.00	5,797.67	90.28	0.00	2.46	0.00	0.00	0.00
5,900.00	3.00	0.00	5,897.53	95.51	0.00	2.61	0.00	0.00	0.00
6,000.00	3.00	0.00	5,997.40	100.75	0.00	2.75	0.00	0.00	0.00
6,100.00	3.00	0.00	6,097.26	105.98	0.00	2.89	0.00	0.00	0.00
6,200.00	3.00	0.00	6,197.12	111.21	0.00	3.03	0.00	0.00	0.00
6,300.00	3.00	0.00	6,296.99	116.45	0.00	3.18	0.00	0.00	0.00
6,400.00	3.00	0.00	6,396.85	121.68	0.00	3.32	0.00	0.00	0.00
6,500.00	3.00	0.00	6,496.71	126.92	0.00	3.46	0.00	0.00	0.00
6,600.00	3.00	0.00	6,596.57	132.15	0.00	3.61	0.00	0.00	0.00
6,700.00	3.00	0.00	6,696.44	137.38	0.00	3.75	0.00	0.00	0.00
6,800.00	3.00	0.00	6,796.30	142.62	0.00	3.89	0.00	0.00	0.00
6,900.00	3.00	0.00	6,896.16	147.85	0.00	4.03	0.00	0.00	0.00
7,000.00	3.00	0.00	6,996.03	153.08	0.00	4.18	0.00	0.00	0.00
7,100.00	3.00	0.00	7,095.89	158.32	0.00	4.32	0.00	0.00	0.00
7,200.00	3.00	0.00	7,195.75	163.55	0.00	4.46	0.00	0.00	0.00
7,300.00	3.00	0.00	7,295.61	168.78	0.00	4.61	0.00	0.00	0.00
7,400.00	3.00	0.00	7,395.48	174.02	0.00	4.75	0.00	0.00	0.00
7,500.00	3.00	0.00	7,495.34	179.25	0.00	4.89	0.00	0.00	0.00
7,600.00	3.00	0.00	7,595.20	184.49	0.00	5.03	0.00	0.00	0.00
7,700.00	3.00	0.00	7,695.07	189.72	0.00	5.18	0.00	0.00	0.00
7,800.00	3.00	0.00	7,794.93	194.95	0.00	5.32	0.00	0.00	0.00
7,870.00	3.00	0.00	7,864.83	198.62	0.00	5.42	0.00	0.00	0.00
<b>Begin 2.00°/100' Drop</b>									
7,900.00	2.40	0.00	7,894.80	200.03	0.00	5.46	2.00	-2.00	0.00
8,000.00	0.40	0.00	7,994.77	202.47	0.00	5.52	2.00	-2.00	0.00
8,020.00	0.00	0.00	8,014.76	202.54	0.00	5.53	2.00	-2.00	0.00
<b>Begin Vertical Hold</b>									
9,915.74	0.00	0.00	9,910.50	202.54	0.00	5.53	0.00	0.00	0.00
<b>KOP2, Begin 12.00°/100' Build</b>									
10,000.00	10.11	272.40	9,994.33	202.85	-7.41	12.94	12.00	12.00	-103.96
10,100.00	22.11	272.40	10,090.23	204.01	-35.09	40.64	12.00	12.00	0.00



## Planning Report



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<b>Well:</b>	701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1 12-14-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,200.00	34.11	272.40	10,178.27	205.98	-82.08	87.67	12.00	12.00	0.00
10,300.00	46.11	272.40	10,254.61	208.68	-146.33	151.97	12.00	12.00	0.00
10,400.00	58.11	272.40	10,315.91	211.97	-225.04	230.74	12.00	12.00	0.00
10,500.00	70.11	272.40	10,359.49	215.73	-314.76	320.53	12.00	12.00	0.00
10,600.00	82.11	272.40	10,383.45	219.79	-411.58	417.42	12.00	12.00	0.00
10,671.49	90.69	272.40	10,387.93	222.78	-482.79	488.69	12.00	12.00	0.00
<b>LP, Hold 90.69° Inc, Begin 2.00°/100' Turn</b>									
10,700.00	90.69	271.83	10,387.59	223.83	-511.28	517.20	2.00	0.00	-2.00
10,800.00	90.69	269.83	10,386.38	225.28	-611.26	617.18	2.00	0.00	-2.00
10,833.04	90.69	269.17	10,385.99	224.99	-644.30	650.20	2.00	0.00	-2.00
<b>Hold 269.17° Azm</b>									
10,900.00	90.69	269.17	10,385.18	224.02	-711.25	717.09	0.00	0.00	0.00
11,000.00	90.69	269.17	10,383.98	222.57	-811.23	817.00	0.00	0.00	0.00
11,100.00	90.69	269.17	10,382.78	221.11	-911.21	916.90	0.00	0.00	0.00
11,200.00	90.69	269.17	10,381.57	219.66	-1,011.19	1,016.81	0.00	0.00	0.00
11,300.00	90.69	269.17	10,380.37	218.21	-1,111.17	1,116.72	0.00	0.00	0.00
11,400.00	90.69	269.17	10,379.17	216.76	-1,211.16	1,216.62	0.00	0.00	0.00
11,500.00	90.69	269.17	10,377.97	215.31	-1,311.14	1,316.53	0.00	0.00	0.00
11,600.00	90.69	269.17	10,376.76	213.86	-1,411.12	1,416.43	0.00	0.00	0.00
11,700.00	90.69	269.17	10,375.56	212.41	-1,511.10	1,516.34	0.00	0.00	0.00
11,800.00	90.69	269.17	10,374.36	210.96	-1,611.09	1,616.24	0.00	0.00	0.00
11,900.00	90.69	269.17	10,373.16	209.51	-1,711.07	1,716.15	0.00	0.00	0.00
12,000.00	90.69	269.17	10,371.95	208.06	-1,811.05	1,816.05	0.00	0.00	0.00
12,100.00	90.69	269.17	10,370.75	206.61	-1,911.03	1,915.96	0.00	0.00	0.00
12,200.00	90.69	269.17	10,369.55	205.15	-2,011.01	2,015.86	0.00	0.00	0.00
12,300.00	90.69	269.17	10,368.35	203.70	-2,111.00	2,115.77	0.00	0.00	0.00
12,400.00	90.69	269.17	10,367.15	202.25	-2,210.98	2,215.67	0.00	0.00	0.00
12,500.00	90.69	269.17	10,365.94	200.80	-2,310.96	2,315.58	0.00	0.00	0.00
12,600.00	90.69	269.17	10,364.74	199.35	-2,410.94	2,415.49	0.00	0.00	0.00
12,700.00	90.69	269.17	10,363.54	197.90	-2,510.93	2,515.39	0.00	0.00	0.00
12,800.00	90.69	269.17	10,362.34	196.45	-2,610.91	2,615.30	0.00	0.00	0.00
12,900.00	90.69	269.17	10,361.13	195.00	-2,710.89	2,715.20	0.00	0.00	0.00
13,000.00	90.69	269.17	10,359.93	193.55	-2,810.87	2,815.11	0.00	0.00	0.00
13,100.00	90.69	269.17	10,358.73	192.10	-2,910.85	2,915.01	0.00	0.00	0.00
13,200.00	90.69	269.17	10,357.53	190.65	-3,010.84	3,014.92	0.00	0.00	0.00
13,300.00	90.69	269.17	10,356.32	189.19	-3,110.82	3,114.82	0.00	0.00	0.00
13,400.00	90.69	269.17	10,355.12	187.74	-3,210.80	3,214.73	0.00	0.00	0.00
13,500.00	90.69	269.17	10,353.92	186.29	-3,310.78	3,314.63	0.00	0.00	0.00
13,600.00	90.69	269.17	10,352.72	184.84	-3,410.77	3,414.54	0.00	0.00	0.00
13,700.00	90.69	269.17	10,351.51	183.39	-3,510.75	3,514.45	0.00	0.00	0.00
13,800.00	90.69	269.17	10,350.31	181.94	-3,610.73	3,614.35	0.00	0.00	0.00
13,900.00	90.69	269.17	10,349.11	180.49	-3,710.71	3,714.26	0.00	0.00	0.00
14,000.00	90.69	269.17	10,347.91	179.04	-3,810.70	3,814.16	0.00	0.00	0.00
14,100.00	90.69	269.17	10,346.71	177.59	-3,910.68	3,914.07	0.00	0.00	0.00
14,200.00	90.69	269.17	10,345.50	176.14	-4,010.66	4,013.97	0.00	0.00	0.00
14,300.00	90.69	269.17	10,344.30	174.69	-4,110.64	4,113.88	0.00	0.00	0.00
14,400.00	90.69	269.17	10,343.10	173.23	-4,210.62	4,213.78	0.00	0.00	0.00
14,500.00	90.69	269.17	10,341.90	171.78	-4,310.61	4,313.69	0.00	0.00	0.00
14,600.00	90.69	269.17	10,340.69	170.33	-4,410.59	4,413.59	0.00	0.00	0.00
14,700.00	90.69	269.17	10,339.49	168.88	-4,510.57	4,513.50	0.00	0.00	0.00
14,800.00	90.69	269.17	10,338.29	167.43	-4,610.55	4,613.41	0.00	0.00	0.00
14,900.00	90.69	269.17	10,337.09	165.98	-4,710.54	4,713.31	0.00	0.00	0.00
15,000.00	90.69	269.17	10,335.88	164.53	-4,810.52	4,813.22	0.00	0.00	0.00
15,100.00	90.69	269.17	10,334.68	163.08	-4,910.50	4,913.12	0.00	0.00	0.00



## Planning Report



<b>Database:</b>	USA Compass	<b>Local Co-ordinate Reference:</b>	Well 701H
<b>Company:</b>	Flat Creek Resources, LLC	<b>TVD Reference:</b>	RKB @ 3155.00usft (TBD)
<b>Project:</b>	Eddy County, NM (NAD27 NME)	<b>MD Reference:</b>	RKB @ 3155.00usft (TBD)
<b>Site:</b>	Phantom Bank 31 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1 12-14-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,200.00	90.69	269.17	10,333.48	161.63	-5,010.48	5,013.03	0.00	0.00	0.00
15,300.00	90.69	269.17	10,332.28	160.18	-5,110.46	5,112.93	0.00	0.00	0.00
15,400.00	90.69	269.17	10,331.07	158.73	-5,210.45	5,212.84	0.00	0.00	0.00
15,500.00	90.69	269.17	10,329.87	157.27	-5,310.43	5,312.74	0.00	0.00	0.00
15,600.00	90.69	269.17	10,328.67	155.82	-5,410.41	5,412.65	0.00	0.00	0.00
15,700.00	90.69	269.17	10,327.47	154.37	-5,510.39	5,512.55	0.00	0.00	0.00
15,794.62	90.69	269.17	10,326.33	153.00	-5,605.00	5,607.09	0.00	0.00	0.00
TD at 15794.62									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - Phantom Bank 31 - plan hits target center - Point	0.00	0.00	10,326.33	153.00	-5,605.00	365,865.00	657,402.00	32° 0' 17.497035 N 103° 49' 31.988566 W	
LTP - Phantom Bank 31 - plan misses target center by 24.61usft at 15700.00usft MD (10327.47 TVD, 154.37 N, -5510.39 E) - Point	0.00	0.00	10,327.17	154.00	-5,535.00	365,866.00	657,472.00	32° 0' 17.503676 N 103° 49' 31.175583 W	
FTP - Phantom Bank 31 - plan misses target center by 11.01usft at 10592.36usft MD (10382.34 TVD, 219.48 N, -404.03 E) - Point	0.00	0.00	10,389.00	228.00	-402.00	365,940.00	662,605.00	32° 0' 17.993402 N 103° 48' 31.560663 W	

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
15,795.15		20" Casing	20	24

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,000.00	4,000.00	0.00	0.00	KOP, Begin 2.00°/100' Build
4,150.00	4,149.93	3.93	0.00	Hold 3.00° Inc at 0.00° Azm
7,870.00	7,864.83	198.62	0.00	Begin 2.00°/100' Drop
8,020.00	8,014.76	202.54	0.00	Begin Vertical Hold
9,915.74	9,910.50	202.54	0.00	KOP2, Begin 12.00°/100' Build
10,671.49	10,387.93	222.78	-482.79	LP, Hold 90.69° Inc, Begin 2.00°/100' Turn
10,833.04	10,385.99	224.99	-644.30	Hold 269.17° Azm
15,794.62	10,326.33	153.00	-5,605.00	TD at 15794.62

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Flat Creek Resources LLC</b>
<b>LEASE NO.:</b>	<b>NMNM138868</b>
<b>WELL NAME &amp; NO.:</b>	Phantom Bank 31 Fed Com 701H
<b>SURFACE HOLE FOOTAGE:</b>	550'/N & 400'/W
<b>BOTTOM HOLE FOOTAGE:</b>	330'/N & 30'/W
<b>LOCATION:</b>	Section 32, T.26 S., R.31 E., NMPM
<b>COUNTY:</b>	Eddy County, New Mexico

COA

H2S	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Potash	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Secretary	<input checked="" type="checkbox"/> R-111-P
Cave/Karst Potential	<input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input checked="" type="checkbox"/> High
Cave/Karst Potential	<input checked="" type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	<input checked="" type="checkbox"/> Conventional	<input checked="" type="checkbox"/> Multibowl	<input checked="" type="checkbox"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **662 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

- hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **3800 feet** is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.  
**Cement excess is less than 25%, more cement might be required.**

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.



**D. SPECIAL REQUIREMENT (S)****Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)  
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

## A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

## B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

## Hydrogen Sulfide Drilling

### Operations Plan

#### Flat Creek Resources

##### 1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system and briefing areas
- Evacuation procedures, routes and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30min pressure demand air packs

##### 2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
- An audio alarm system will be installed on the derrick floor and in the doghouse

##### 3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible
- Windsock on the rig floor and / top of doghouse should be high enough to be visible

##### 4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
  - Green Flag – Normal Safe Operation Condition
  - Yellow Flag – Potential Pressure and Danger
  - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

##### 5 Well Control Equipment:

- See Drilling Operations Plan Schematics

##### 6 Communication:

- While working under masks chalkboards will be used for communications
- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

**7 Drilling Stem Testing:**

- No DST cores are planned at this time

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubulars good and other mechanical equipment

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary

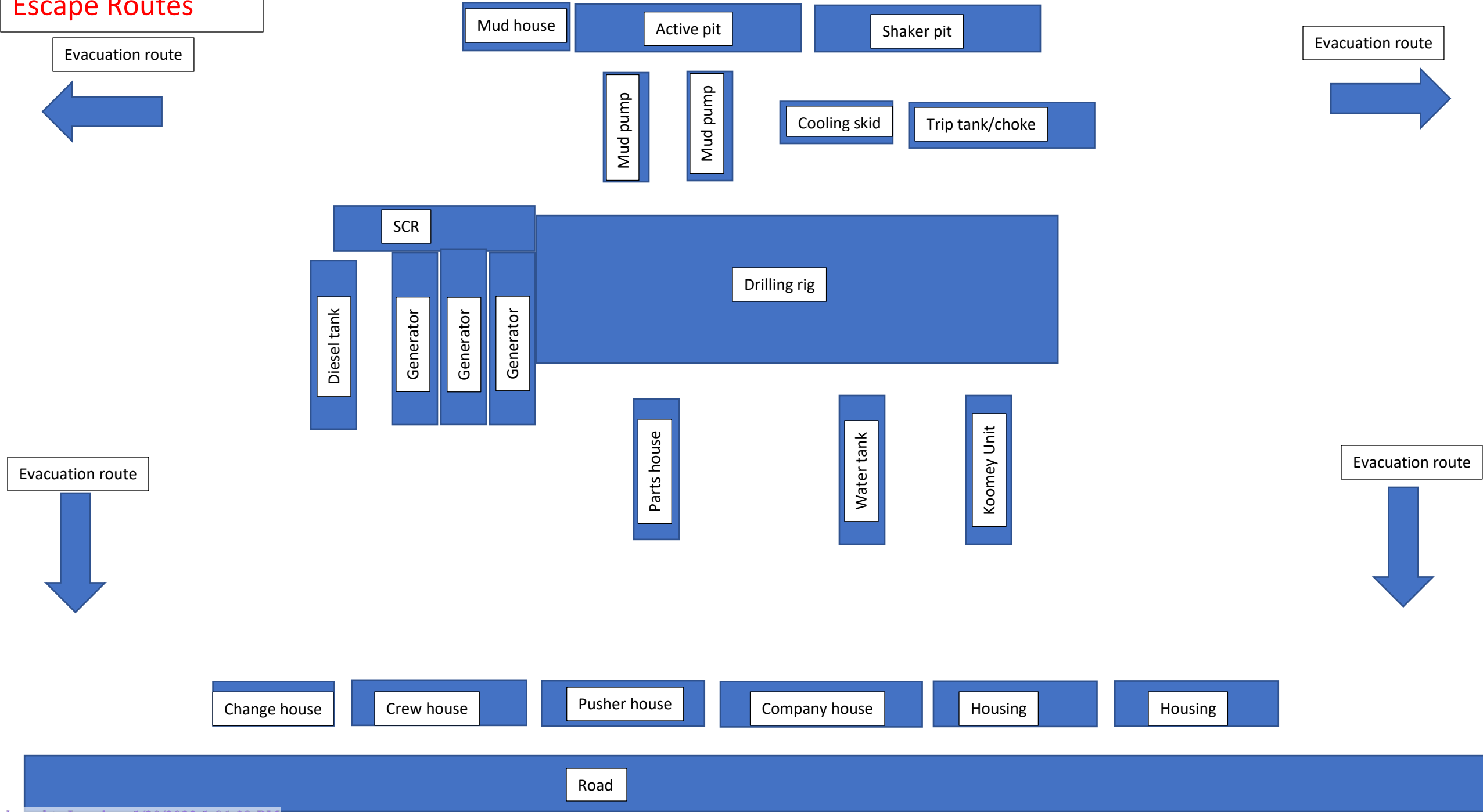
**11 Emergency Contacts**

<b>Emergency Contacts</b>		
Carlsbad Police Department	575.887.7551	911
Carlsbad Medical Center	575.887.4100	911
Eddy County Fire Service	575.628.5450	911
Eddy County Sherriff	575.887.7551	911
Lea County Fire Service	575.391.2983	911
Lea County Sherriff	575.396.3611	911
Jal Police Department	575.395.2121	911
Jal Fire Department	575.395.2221	911
Flat Creek Resources	817.731.4100	

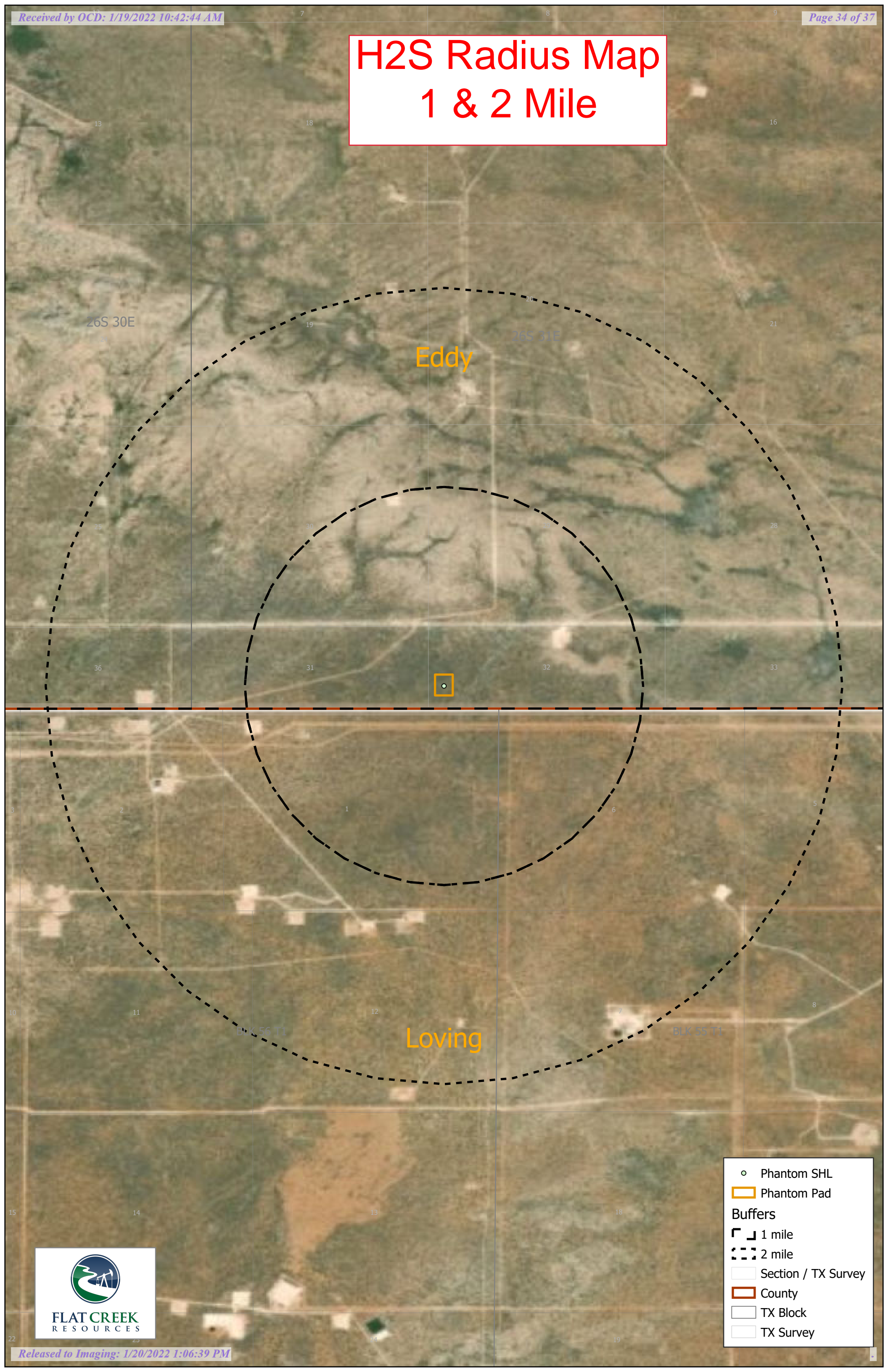


Wellsite Layout  
Escape Routes

Evacuation routes will depend on current wind direction



# H2S Radius Map 1 & 2 Mile



Phantom SHL

Phantom Pad

Buffers

1 mile

2 mile

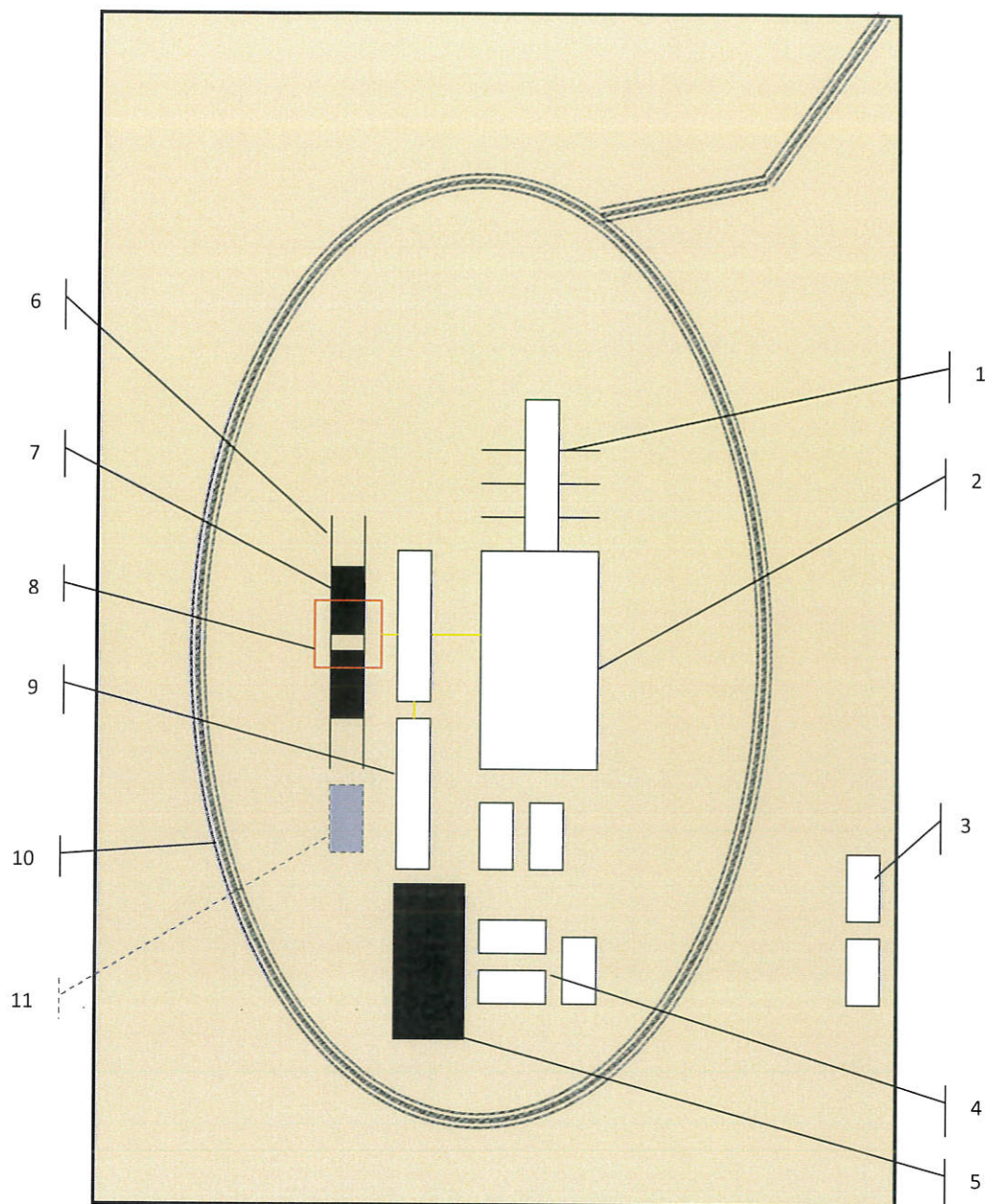
Section / TX Survey

County

TX Block

TX Survey





Schematic Closed Loop Drilling Rig\*

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

\*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

**PERMITS WEST, INC.**  
 PROVIDING PERMITS for LAND USERS  
 37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120



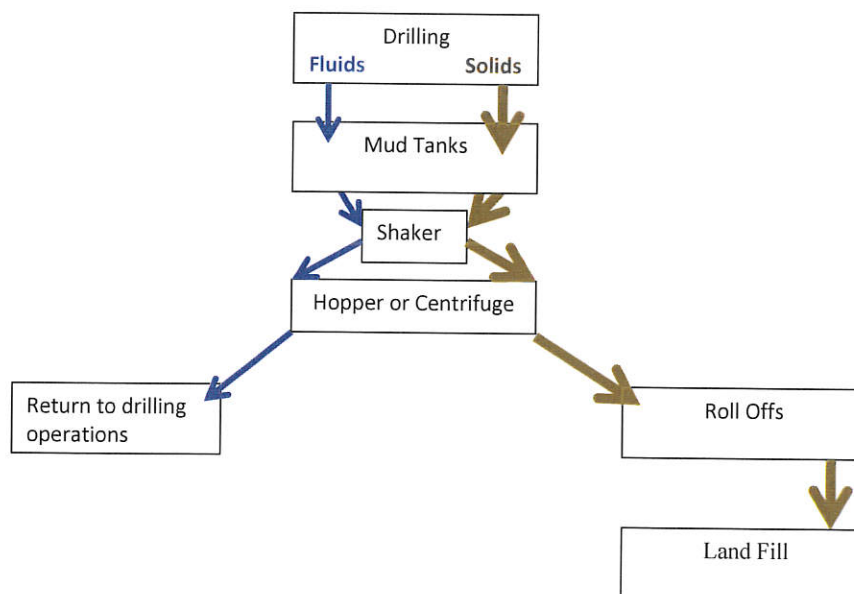
Above: Centrifugal Closed Loop System





Closed Loop Drilling System: Mud tanks to right (1)  
 Hopper in air to settle out solids (2)  
 Water return pipe (3)  
 Shaker between hopper and mud tanks (4)  
 Roll offs on skids (5)

#### Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil  
 Field Service

**PERMITS WEST**, INC.  
 PROVIDING PERMITS for LAND USERS  
 37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 73452

**CONDITIONS**

Operator: Flat Creek Resources, LLC 777 Main St. Fort Worth, TX 76102	OGRID:
	374034
	Action Number:
	73452
Action Type:	
[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)	

**CONDITIONS**

Created By	Condition	Condition Date
kpickford	Will require a administrative order for non-standard location prior to placing the well on production	1/20/2022
kpickford	Notify OCD 24 hours prior to casing & cement	1/20/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	1/20/2022
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	1/20/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	1/20/2022
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	1/20/2022