

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 checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone			5. Lease Serial No. NMNM0441951 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. JAWBONE FED COM LW 20H 9. API Well No. 30-015-55089	
2. Name of Operator FLAT CREEK RESOURCES LLC 3a. Address 777 MAIN STREET, SUITE 3600, FORT WORTH, TX 761 3b. Phone No. (include area code) (817) 310-8570			10. Field and Pool, or Exploratory PURPLE SAGE/WOLFCAMP 11. Sec., T. R. M. or Blk. and Survey or Area SEC 2/T25S/R26E/NMP	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWSE / 394 FSL / 1991 FEL / LAT 32.152722 / LONG -104.26171 At proposed prod. zone NENE / 330 FNL / 1005 FEL / LAT 32.180032 / LONG -104.258361			12. County or Parish EDDY 13. State NM	
14. Distance in miles and direction from nearest town or post office* 7 miles			15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 394 feet	
16. No of acres in lease 			17. Spacing Unit dedicated to this well 640.32	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet			19. Proposed Depth 9350 feet / 19135 feet	
20. BLM/BIA Bond No. in file FED: NMB001675			21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3385 feet	
22. Approximate date work will start* 05/01/2024			23. Estimated duration 60 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 (Electronic Submission) Title Permitting Agent		Name (Printed/Typed) BRIAN WOOD / Ph: (817) 310-8570 Date 10/31/2023
Approved by (Signature) (Electronic Submission) Title Assistant Field Manager Lands & Minerals		Name (Printed/Typed) CODY LAYTON / Ph: (575) 234-5959 Date 05/10/2024 Office Carlsbad Field 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

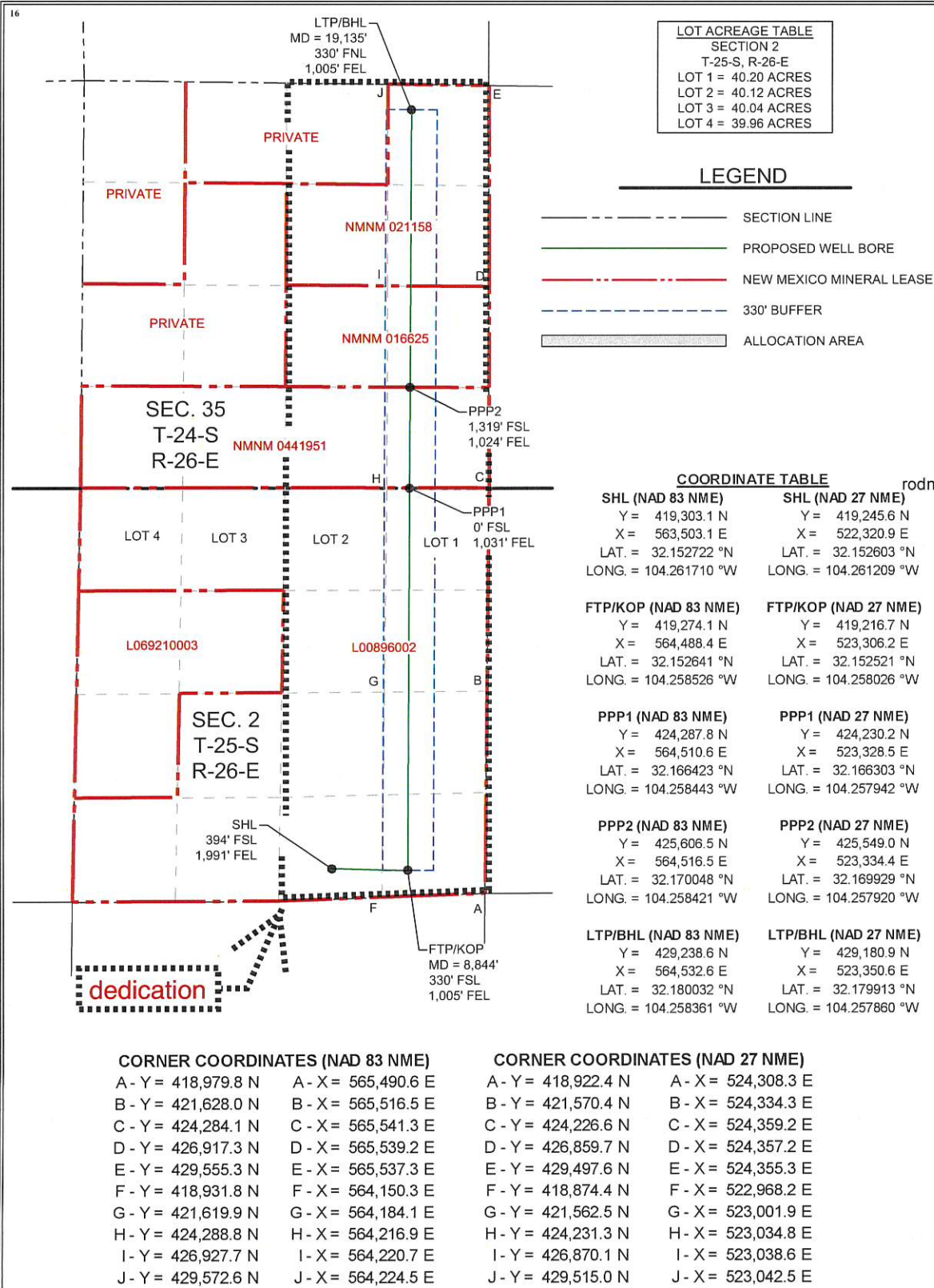
State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-55089		² Pool Code 98220		³ Pool Name PURPLE SAGE; WOLFCAMP (GAS)					
⁴ Property Code 334760		⁵ Property Name JAWBONE FED COM LW						⁶ Well Number 20H	
⁷ OGRID No. 374034		⁸ Operator Name FLAT CREEK RESOURCES, LLC						⁹ Elevation 3,385'	
¹⁰ Surface Location									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	2	25 S	26 E		394	SOUTH	1,991	EAST	EDDY
¹¹ 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
A	35	24 S	26 E		330	NORTH	1,005	EAST	EDDY
¹² Dedicated Acres 640.32		¹³ Joint or Infill		¹⁴ Consolidation Code C		¹⁵ Order No.			

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.



¹⁷ OPERATOR
CERTIFICATION

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.

Rodney Littleton 9/20/2023
Signature Date

Rodney Littleton
Printed Name

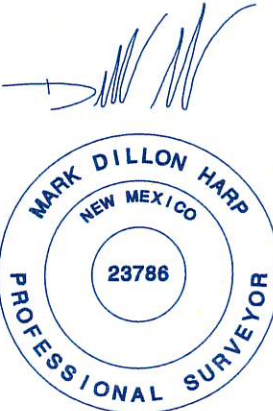
rodney.littleton@flatcreekresources.com
E-mail Address

¹⁸ SURVEYOR
CERTIFICATION

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.

09/19/2023
Date of Survey

Signature and Seal of
Professional Surveyor:



MARK DILLON HARP 23786
Certificate Number

AI 618.005002.00-06

State of New Mexico
Energy, Minerals and Natural Resources DepartmentSubmit Electronically
Via E-permittingOil 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:** 05 / 07 / 2024**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
Jawbone Fed Com LW 19H		O-2-T25S-R26E	393' FSL 1961 FEL	900	1000	1500
Jawbone Fed Com LW 20H		O-2-T25S-R26E	394' FSL 1991' FEL	900	1000	1500
Jawbone Fed Com LW 21H		O-2-T25S-R26E	395' FSL 2021' FEL	900	1000	1500
Jawbone Fed Com LW 22H		O-2-T25S-R26E	396' FSL 2050' FEL	900	1000	1500

IV. Central Delivery Point Name: Jawbone BS Central Tank 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
Jawbone Fed Com LW 19H		May 1, 2025	May 16, 2025	August 1, 2025	September 1, 2025	September 15, 2025
Jawbone Fed Com LW 20H		May 2, 2025	May 30, 2025	August 1, 2025	September 1, 2025	September 15, 2025
Jawbone Fed Com LW 21H		May 3, 2025	June 14, 2025	August 1, 2025	September 1, 2025	September 15, 2025
Jawbone Fed Com LW 22H		May 4, 2025	June 28, 2025	August 1, 2025	September 1, 2025	September 15, 2025

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 Drilling
E-mail Address:	rodney.littleton@flatcreekresources.com
Date:	May 7, 2024
Phone:	817-310-8578
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
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

05/11/2024

APD ID: 10400095550

Submission Date: 10/31/2023

Highlighted data
reflects the most
recent changes

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: JAWBONE FED COM LW

Well Number: 20H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13409125	SALADO	3385	0	0	SALT	USEABLE WATER	N
13409126	BASE OF SALT	1655	1730	1732	ANHYDRITE	NONE	N
13409127	LAMAR	1441	1944	1948	LIMESTONE	NONE	N
13409128	BELL CANYON	1384	2001	2006	SANDSTONE	NATURAL GAS, OIL	N
13409129	CHERRY CANYON	541	2844	2857	SANDSTONE	NATURAL GAS, OIL	N
13409124	BRUSHY CANYON	-506	3891	3914	SANDSTONE	NATURAL GAS	N
13409130	BONE SPRING LIME	-2053	5438	5476	LIMESTONE	NATURAL GAS, OIL	N
13409131	BONE SPRING 1ST	-2970	6355	6402	SANDSTONE	NATURAL GAS, OIL	N
13409132	BONE SPRING 2ND	-3476	6861	6913	SANDSTONE	NATURAL GAS, OIL	N
13409133	BONE SPRING 3RD	-4783	8168	8232	SANDSTONE	NATURAL GAS, OIL	N
13409134	WOLFCAMP	-5116	8501	8568	SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 20000

Equipment: A 20,000, 10,000 psi BOP stack will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer, and an annular preventer (5000-psi WP). Both units will be hydraulically operated. The ram-type will be equipped with blind rams on bottom and drill pipe rams on top. Speed head will be installed by a third-party welder under the supervision of the vendors representative.

Requesting Variance? YES

Variance request: A variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

Testing Procedure: All BOPE will be tested in accordance with Onshore Oil & Gas Order 2. BOP Test Procedures: 1. Use water to test BOPE. 2. Make up test assembly (test plug) and set in the wellhead profile.

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: JAWBONE FED COM LW

Well Number: 20H

Ensure the casing valve is left open. Monitor the casing valve outlet while testing for potential leak past the test plug. 3. Circulate through the choke/kill lines, choke manifold, standpipe manifold, and valves to ensure that all lines are full of water. This will prevent pressure drop (compression) while testing. 4. Line up test unit, test rams, valves, and lines as per the following chart. 5. Pressure tests must be low and high, respectively, and the pressure should stabilize with minimum bleed off within 10 minutes. If a test plug is used, no bleed-off of pressure is acceptable. For a test not using a test plug, if a decline in pressure of more than 10% in 30 minutes occurs, then the test will be considered to have failed. Pressure should be recorded on a chart recorder (add scale to be use). 6. Any equipment that does not pass the pressure test must be reported to the drilling supervisor. Equipment must be repaired and retested. 7. Continue with pressure testing until all equipment has been tested as per the specific rig requirements. 8. Rig down test assembly. 9. All tests and drills will be recorded in the drilling log.

Choke Diagram Attachment:

Jawbone_LW_Choke_20231030171036.pdf

BOP Diagram Attachment:

Jawbone_LW_BOP_20231030171048.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	300	0	300	3385	3085	300	J-55	54.5	ST&C	8	19.4	DRY	70.2	DRY	70.2
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	8850	0	8783	0	-5398	8850	OTHER	43.5	LT&C	1.2	1.9	DRY	5.3	DRY	5.3
3	PRODUCTION	8.5	5.5	NEW	API	N	0	19135	0	9350	0	-5965	19135	P-110	17	BUTT	1.7	2.4	DRY	3	DRY	3

Casing Attachments

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: JAWBONE FED COM LWWell Number: 20H

Casing Attachments

Casing ID: 1StringSURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jawbone_LW_20H_Casing_Design_Assumptions_20231030171135.pdf

Casing ID: 2StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jawbone_LW_20H_Casing_Design_Assumptions_20231030171220.pdf

Casing ID: 3StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jawbone_LW_20H_Casing_Design_Assumptions_20231030171259.pdf

Section 4 - Cement

Operator Name: FLAT CREEK RESOURCES LLC**Well Name:** JAWBONE FED COM LW**Well Number:** 20H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	200	270	1.68	12.8	285	100	35/65 Poz Premium C	5% bwow salt + 6% bentonite gel + 0.4% CPT-503P + 1/8 #/sk Dura-fiber
SURFACE	Tail		200	300	110	1.34	14.8	147	100	Class C	1% CaCl2 + ¼ #/sk cellophane flakes
INTERMEDIATE	Lead		0	1500	2340	1.68	12.8	3914	50	35/65 Poz Premium C	5% bwow salt + 6% bentonite gel + 0.4% CPT-503P + 1/8 #/sk Dura-fiber
INTERMEDIATE	Tail		1500	8850	135	1.74	13.5	234	50	Class C	1% CaCl2 + 4% bentonite gel + 0.4% CPT-503P + 1/8 #/sk Dura-fiber
PRODUCTION	Lead		0	7500	705	2.82	10.4	1988	15	Class H	10% bwoc light weight bead + 5% silica fume alternative + 0.2% suspension aid + 0.3% fluid loss additive + 0.3% dispersant + 0.2% retarder
PRODUCTION	Tail		7500	1913 5	2160	1.42	13.2	3067	15	35/65 Poz Premium H	0.2% CPT-23

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: Sufficient mud materials (e. g., barite, bentonite, LCM) to maintain mud properties and meet minimum lost circulation and weight increase requirements will always be on site.

Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) mud system will monitor pit volumes for gains or losses, flow rate, pump pressures, and stroke rate.

Circulating Medium Table

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: JAWBONE FED COM LW

Well Number: 20H

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	300	OTHER : Fresh Water	8.7	8.7							
300	8850	OTHER : Cut Brine	10	10							
8850	19135	OIL-BASED MUD	12.5	12.5							

Section 6 - Test, Logging, Coring

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

GR and resistivity logs will be run.

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

GAMMA RAY LOG,

Coring operation description for the well:

No core or open hole or cased hole log is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4675

Anticipated Surface Pressure: 2617

Anticipated Bottom Hole Temperature(F): 203

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

Jawbone_LW_H2S_Plan_20231030171604.pdf

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: JAWBONE FED COM LW

Well Number: 20H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Jawbone_LW_20H_Horizontal_Plan_20231030171619.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Jawbone_LW_20H_Anticollision_Report_20231030171644.pdf

Jawbone_LW_Speedhead_Specs_20231030171703.pdf

CoFlex_Certs_RDC_20231030171800.pdf

Jawbone_LW_20H_Drill_Plan_Rev_20240125100250.pdf

Other Variance attachment:



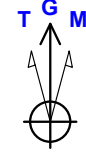
Well: Jawbone Fed Com LW 20H
Site: Jawbone
Project: Eddy County, New Mexico NAD27 NME
Design: rev0

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.000	1200.00	0.00	0.00	0.00	0.00	KOP Begin 2"/100' build
3	1596.30	7.93	91.680	1595.04	-0.80	27.36	2.00	-0.68	Begin 7.93° tangent
4	8347.76	7.93	91.680	8282.00	-28.10	957.95	0.00	-23.83	Begin 2"/100' drop
5	8744.06	0.00	0.000	8677.04	-28.90	985.30	2.00	-24.51	Begin vertical hold
6	8844.06	0.00	0.000	8777.04	-28.90	985.30	0.00	-24.51	Begin 10"/100' build
7	9744.06	90.00	0.255	9350.00	544.05	987.86	10.00	548.44	Begin 90.00° lateral
8	19135.42	90.00	0.255	9350.00	9935.32	1029.70	0.00	9939.80	PBHL/TD @ 19135.42 MD 9350.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Jawbone 20 FTP 330 FSL 1005 FEL	8777.04	-28.90	985.30	419216.700	523306.200
- plan hits target center					
Jawbone 20 LTP 330 FNL 1005 FEL	9350.00	9935.32	1029.70	429180.900	523350.600
- plan hits target center					



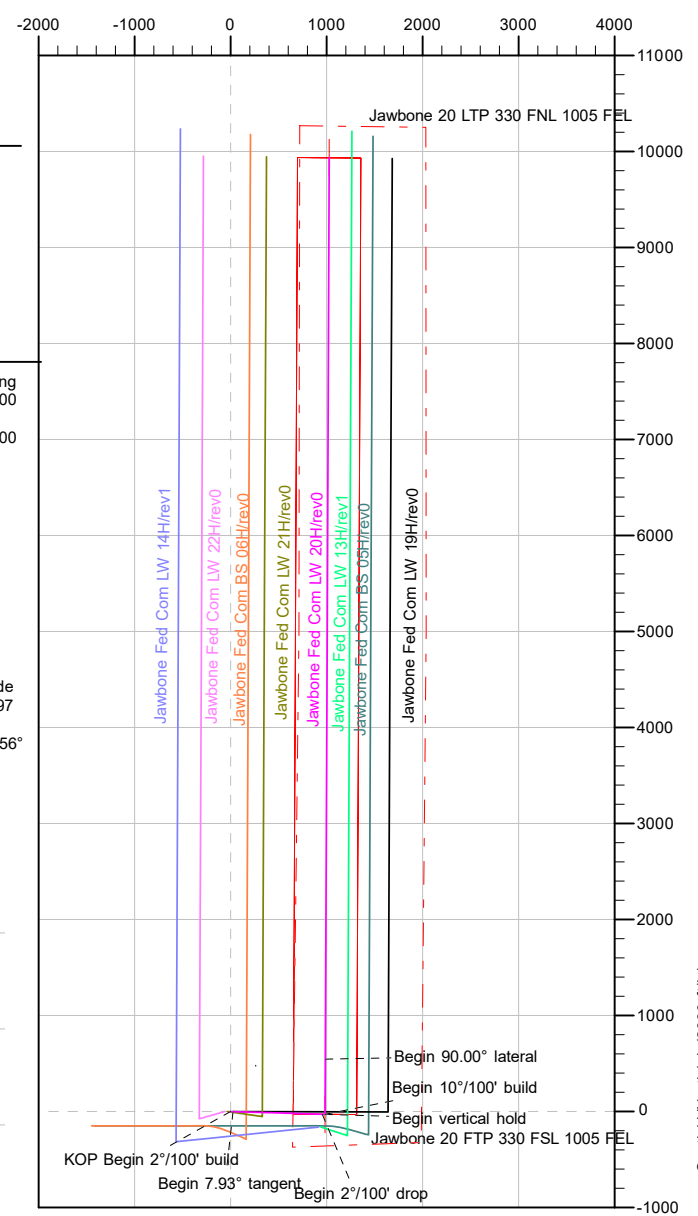
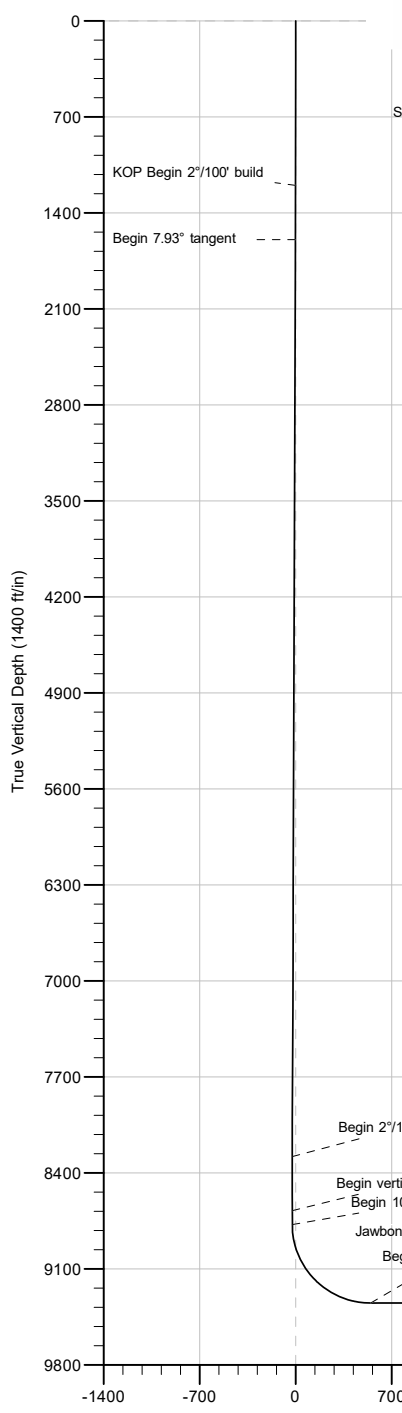
Azimuths to Grid North
True North: -0.04°
Magnetic North: 6.56°

Magnetic Field
Strength: 47148.7nT
Dip Angle: 59.66°
Date: 9/8/2023
Model: IGRF2020

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Depth Reference: RKB=3385+26.5 @ 3411.50ft

Northing	Easting	Latitude	Longitude
419245.600	522320.900	32.152602402	-104.261209497

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Add 6.56°



FLAT CREEK
RESOURCES

Planning Report

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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

Site	Jawbone				
Site Position:		Northing:	419,218.600 usft	Latitude:	32.152532039
From:	Map	Easting:	520,115.600 usft	Longitude:	-104.268335365
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Jawbone Fed Com LW 20H, Surf loc: 394 FSL 1991 FEL Section 02-T25S-R26E					
Well Position	+N/-S	0.00 ft	Northing:	419,245.600 usft	Latitude:	32.152602402
	+E/-W	0.00 ft	Easting:	522,320.900 usft	Longitude:	-104.261209497
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,385.00 ft
Grid Convergence:		0.04 °				

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/8/2023	6.59	59.66	47,148.65936310

Design	rev0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	0.255

Plan Survey Tool Program	Date	9/8/2023			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,134.48	rev0 (Original Hole)	MWD	
				OWSG MWD - Standard	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,596.30	7.93	91.680	1,595.04	-0.80	27.36	2.00	2.00	0.00	91.68	
8,347.76	7.93	91.680	8,282.00	-28.10	957.95	0.00	0.00	0.00	0.00	
8,744.06	0.00	0.000	8,677.04	-28.90	985.30	2.00	-2.00	0.00	180.00	
8,844.06	0.00	0.000	8,777.04	-28.90	985.30	0.00	0.00	0.00	0.00	Jawbone 20 FTP 330
9,744.06	90.00	0.255	9,350.00	544.05	987.86	10.00	10.00	0.03	0.26	
19,135.42	90.00	0.255	9,350.00	9,935.32	1,029.70	0.00	0.00	0.00	0.00	Jawbone 20 LTP 330

FLAT CREEK
RESOURCES

Planning Report

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Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 2°/100' build									
1,300.00	2.00	91.680	1,299.98	-0.05	1.74	-0.04	2.00	2.00	0.00
1,400.00	4.00	91.680	1,399.84	-0.20	6.98	-0.17	2.00	2.00	0.00
1,500.00	6.00	91.680	1,499.45	-0.46	15.69	-0.39	2.00	2.00	0.00
1,596.30	7.93	91.680	1,595.04	-0.80	27.36	-0.68	2.00	2.00	0.00
Begin 7.93° tangent									
1,600.00	7.93	91.680	1,598.70	-0.82	27.87	-0.69	0.00	0.00	0.00
1,700.00	7.93	91.680	1,697.75	-1.22	41.65	-1.04	0.00	0.00	0.00
1,800.00	7.93	91.680	1,796.79	-1.63	55.43	-1.38	0.00	0.00	0.00
1,900.00	7.93	91.680	1,895.84	-2.03	69.22	-1.72	0.00	0.00	0.00
2,000.00	7.93	91.680	1,994.88	-2.43	83.00	-2.07	0.00	0.00	0.00
2,100.00	7.93	91.680	2,093.93	-2.84	96.78	-2.41	0.00	0.00	0.00
2,200.00	7.93	91.680	2,192.97	-3.24	110.57	-2.75	0.00	0.00	0.00
2,300.00	7.93	91.680	2,292.01	-3.65	124.35	-3.09	0.00	0.00	0.00
2,400.00	7.93	91.680	2,391.06	-4.05	138.13	-3.44	0.00	0.00	0.00
2,500.00	7.93	91.680	2,490.10	-4.46	151.92	-3.78	0.00	0.00	0.00
2,600.00	7.93	91.680	2,589.15	-4.86	165.70	-4.12	0.00	0.00	0.00
2,700.00	7.93	91.680	2,688.19	-5.26	179.48	-4.47	0.00	0.00	0.00
2,800.00	7.93	91.680	2,787.24	-5.67	193.27	-4.81	0.00	0.00	0.00
2,900.00	7.93	91.680	2,886.28	-6.07	207.05	-5.15	0.00	0.00	0.00
3,000.00	7.93	91.680	2,985.33	-6.48	220.84	-5.49	0.00	0.00	0.00
3,100.00	7.93	91.680	3,084.37	-6.88	234.62	-5.84	0.00	0.00	0.00
3,200.00	7.93	91.680	3,183.42	-7.29	248.40	-6.18	0.00	0.00	0.00
3,300.00	7.93	91.680	3,282.46	-7.69	262.19	-6.52	0.00	0.00	0.00
3,400.00	7.93	91.680	3,381.51	-8.09	275.97	-6.87	0.00	0.00	0.00
3,500.00	7.93	91.680	3,480.55	-8.50	289.75	-7.21	0.00	0.00	0.00
3,600.00	7.93	91.680	3,579.60	-8.90	303.54	-7.55	0.00	0.00	0.00
3,700.00	7.93	91.680	3,678.64	-9.31	317.32	-7.90	0.00	0.00	0.00
3,800.00	7.93	91.680	3,777.69	-9.71	331.10	-8.24	0.00	0.00	0.00
3,900.00	7.93	91.680	3,876.73	-10.12	344.89	-8.58	0.00	0.00	0.00
4,000.00	7.93	91.680	3,975.77	-10.52	358.67	-8.92	0.00	0.00	0.00
4,100.00	7.93	91.680	4,074.82	-10.92	372.45	-9.27	0.00	0.00	0.00
4,200.00	7.93	91.680	4,173.86	-11.33	386.24	-9.61	0.00	0.00	0.00
4,300.00	7.93	91.680	4,272.91	-11.73	400.02	-9.95	0.00	0.00	0.00
4,400.00	7.93	91.680	4,371.95	-12.14	413.80	-10.30	0.00	0.00	0.00
4,500.00	7.93	91.680	4,471.00	-12.54	427.59	-10.64	0.00	0.00	0.00
4,600.00	7.93	91.680	4,570.04	-12.95	441.37	-10.98	0.00	0.00	0.00
4,700.00	7.93	91.680	4,669.09	-13.35	455.16	-11.32	0.00	0.00	0.00
4,800.00	7.93	91.680	4,768.13	-13.75	468.94	-11.67	0.00	0.00	0.00
4,900.00	7.93	91.680	4,867.18	-14.16	482.72	-12.01	0.00	0.00	0.00

FLAT CREEK
RESOURCES

Planning Report

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Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.00	7.93	91.680	4,966.22	-14.56	496.51	-12.35	0.00	0.00	0.00
5,100.00	7.93	91.680	5,065.27	-14.97	510.29	-12.70	0.00	0.00	0.00
5,200.00	7.93	91.680	5,164.31	-15.37	524.07	-13.04	0.00	0.00	0.00
5,300.00	7.93	91.680	5,263.36	-15.78	537.86	-13.38	0.00	0.00	0.00
5,400.00	7.93	91.680	5,362.40	-16.18	551.64	-13.72	0.00	0.00	0.00
5,500.00	7.93	91.680	5,461.44	-16.58	565.42	-14.07	0.00	0.00	0.00
5,600.00	7.93	91.680	5,560.49	-16.99	579.21	-14.41	0.00	0.00	0.00
5,700.00	7.93	91.680	5,659.53	-17.39	592.99	-14.75	0.00	0.00	0.00
5,800.00	7.93	91.680	5,758.58	-17.80	606.77	-15.10	0.00	0.00	0.00
5,900.00	7.93	91.680	5,857.62	-18.20	620.56	-15.44	0.00	0.00	0.00
6,000.00	7.93	91.680	5,956.67	-18.61	634.34	-15.78	0.00	0.00	0.00
6,100.00	7.93	91.680	6,055.71	-19.01	648.13	-16.13	0.00	0.00	0.00
6,200.00	7.93	91.680	6,154.76	-19.41	661.91	-16.47	0.00	0.00	0.00
6,300.00	7.93	91.680	6,253.80	-19.82	675.69	-16.81	0.00	0.00	0.00
6,400.00	7.93	91.680	6,352.85	-20.22	689.48	-17.15	0.00	0.00	0.00
6,500.00	7.93	91.680	6,451.89	-20.63	703.26	-17.50	0.00	0.00	0.00
6,600.00	7.93	91.680	6,550.94	-21.03	717.04	-17.84	0.00	0.00	0.00
6,700.00	7.93	91.680	6,649.98	-21.44	730.83	-18.18	0.00	0.00	0.00
6,800.00	7.93	91.680	6,749.03	-21.84	744.61	-18.53	0.00	0.00	0.00
6,900.00	7.93	91.680	6,848.07	-22.24	758.39	-18.87	0.00	0.00	0.00
7,000.00	7.93	91.680	6,947.12	-22.65	772.18	-19.21	0.00	0.00	0.00
7,100.00	7.93	91.680	7,046.16	-23.05	785.96	-19.55	0.00	0.00	0.00
7,200.00	7.93	91.680	7,145.20	-23.46	799.74	-19.90	0.00	0.00	0.00
7,300.00	7.93	91.680	7,244.25	-23.86	813.53	-20.24	0.00	0.00	0.00
7,400.00	7.93	91.680	7,343.29	-24.27	827.31	-20.58	0.00	0.00	0.00
7,500.00	7.93	91.680	7,442.34	-24.67	841.09	-20.93	0.00	0.00	0.00
7,600.00	7.93	91.680	7,541.38	-25.07	854.88	-21.27	0.00	0.00	0.00
7,700.00	7.93	91.680	7,640.43	-25.48	868.66	-21.61	0.00	0.00	0.00
7,800.00	7.93	91.680	7,739.47	-25.88	882.45	-21.96	0.00	0.00	0.00
7,900.00	7.93	91.680	7,838.52	-26.29	896.23	-22.30	0.00	0.00	0.00
8,000.00	7.93	91.680	7,937.56	-26.69	910.01	-22.64	0.00	0.00	0.00
8,100.00	7.93	91.680	8,036.61	-27.10	923.80	-22.98	0.00	0.00	0.00
8,200.00	7.93	91.680	8,135.65	-27.50	937.58	-23.33	0.00	0.00	0.00
8,300.00	7.93	91.680	8,234.70	-27.90	951.36	-23.67	0.00	0.00	0.00
8,347.76	7.93	91.680	8,282.00	-28.10	957.95	-23.83	0.00	0.00	0.00
Begin 2°/100' drop									
8,400.00	6.88	91.680	8,333.80	-28.30	964.67	-24.00	2.00	-2.00	0.00
8,500.00	4.88	91.680	8,433.27	-28.60	974.92	-24.26	2.00	-2.00	0.00
8,600.00	2.88	91.680	8,533.04	-28.79	981.68	-24.42	2.00	-2.00	0.00
8,700.00	0.88	91.680	8,632.98	-28.89	984.96	-24.51	2.00	-2.00	0.00
8,744.06	0.00	0.000	8,677.04	-28.90	985.30	-24.51	2.00	-2.00	0.00
Begin vertical hold									
8,800.00	0.00	0.000	8,732.98	-28.90	985.30	-24.51	0.00	0.00	0.00
8,844.06	0.00	0.000	8,777.04	-28.90	985.30	-24.51	0.00	0.00	0.00
Begin 10°/100' build									
8,850.00	0.59	0.255	8,782.98	-28.87	985.30	-24.48	10.00	10.00	0.00
8,900.00	5.59	0.255	8,832.89	-26.17	985.31	-21.79	10.00	10.00	0.00
8,950.00	10.59	0.255	8,882.37	-19.13	985.35	-14.75	10.00	10.00	0.00
9,000.00	15.59	0.255	8,931.06	-7.81	985.40	-3.43	10.00	10.00	0.00
9,050.00	20.59	0.255	8,978.57	7.71	985.47	12.10	10.00	10.00	0.00
9,100.00	25.59	0.255	9,024.55	27.32	985.55	31.70	10.00	10.00	0.00
9,150.00	30.59	0.255	9,068.65	50.86	985.66	55.24	10.00	10.00	0.00
9,200.00	35.59	0.255	9,110.52	78.15	985.78	82.53	10.00	10.00	0.00

FLAT CREEK
RESOURCES

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Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,250.00	40.59	0.255	9,149.86	108.98	985.92	113.37	10.00	10.00	0.00
9,300.00	45.59	0.255	9,186.36	143.13	986.07	147.52	10.00	10.00	0.00
9,350.00	50.59	0.255	9,219.74	180.33	986.23	184.72	10.00	10.00	0.00
9,400.00	55.59	0.255	9,249.76	220.30	986.41	224.69	10.00	10.00	0.00
9,450.00	60.59	0.255	9,276.18	262.73	986.60	267.12	10.00	10.00	0.00
9,500.00	65.59	0.255	9,298.80	307.31	986.80	311.69	10.00	10.00	0.00
9,550.00	70.59	0.255	9,317.45	353.68	987.01	358.07	10.00	10.00	0.00
9,600.00	75.59	0.255	9,331.98	401.50	987.22	405.89	10.00	10.00	0.00
9,650.00	80.59	0.255	9,342.29	450.41	987.44	454.80	10.00	10.00	0.00
9,700.00	85.59	0.255	9,348.30	500.03	987.66	504.42	10.00	10.00	0.00
9,744.06	90.00	0.255	9,350.00	544.05	987.86	548.44	10.00	10.00	0.00
Begin 90.00° lateral									
9,800.00	90.00	0.255	9,350.00	599.99	988.10	604.38	0.00	0.00	0.00
9,900.00	90.00	0.255	9,350.00	699.99	988.55	704.38	0.00	0.00	0.00
10,000.00	90.00	0.255	9,350.00	799.99	989.00	804.38	0.00	0.00	0.00
10,100.00	90.00	0.255	9,350.00	899.99	989.44	904.38	0.00	0.00	0.00
10,200.00	90.00	0.255	9,350.00	999.98	989.89	1,004.38	0.00	0.00	0.00
10,300.00	90.00	0.255	9,350.00	1,099.98	990.33	1,104.38	0.00	0.00	0.00
10,400.00	90.00	0.255	9,350.00	1,199.98	990.78	1,204.38	0.00	0.00	0.00
10,500.00	90.00	0.255	9,350.00	1,299.98	991.22	1,304.38	0.00	0.00	0.00
10,600.00	90.00	0.255	9,350.00	1,399.98	991.67	1,404.38	0.00	0.00	0.00
10,700.00	90.00	0.255	9,350.00	1,499.98	992.11	1,504.38	0.00	0.00	0.00
10,800.00	90.00	0.255	9,350.00	1,599.98	992.56	1,604.38	0.00	0.00	0.00
10,900.00	90.00	0.255	9,350.00	1,699.98	993.01	1,704.38	0.00	0.00	0.00
11,000.00	90.00	0.255	9,350.00	1,799.98	993.45	1,804.38	0.00	0.00	0.00
11,100.00	90.00	0.255	9,350.00	1,899.98	993.90	1,904.38	0.00	0.00	0.00
11,200.00	90.00	0.255	9,350.00	1,999.97	994.34	2,004.38	0.00	0.00	0.00
11,300.00	90.00	0.255	9,350.00	2,099.97	994.79	2,104.38	0.00	0.00	0.00
11,400.00	90.00	0.255	9,350.00	2,199.97	995.23	2,204.38	0.00	0.00	0.00
11,500.00	90.00	0.255	9,350.00	2,299.97	995.68	2,304.38	0.00	0.00	0.00
11,600.00	90.00	0.255	9,350.00	2,399.97	996.12	2,404.38	0.00	0.00	0.00
11,700.00	90.00	0.255	9,350.00	2,499.97	996.57	2,504.38	0.00	0.00	0.00
11,800.00	90.00	0.255	9,350.00	2,599.97	997.02	2,604.38	0.00	0.00	0.00
11,900.00	90.00	0.255	9,350.00	2,699.97	997.46	2,704.38	0.00	0.00	0.00
12,000.00	90.00	0.255	9,350.00	2,799.97	997.91	2,804.38	0.00	0.00	0.00
12,100.00	90.00	0.255	9,350.00	2,899.97	998.35	2,904.38	0.00	0.00	0.00
12,200.00	90.00	0.255	9,350.00	2,999.96	998.80	3,004.38	0.00	0.00	0.00
12,300.00	90.00	0.255	9,350.00	3,099.96	999.24	3,104.38	0.00	0.00	0.00
12,400.00	90.00	0.255	9,350.00	3,199.96	999.69	3,204.38	0.00	0.00	0.00
12,500.00	90.00	0.255	9,350.00	3,299.96	1,000.14	3,304.38	0.00	0.00	0.00
12,600.00	90.00	0.255	9,350.00	3,399.96	1,000.58	3,404.38	0.00	0.00	0.00
12,700.00	90.00	0.255	9,350.00	3,499.96	1,001.03	3,504.38	0.00	0.00	0.00
12,800.00	90.00	0.255	9,350.00	3,599.96	1,001.47	3,604.38	0.00	0.00	0.00
12,900.00	90.00	0.255	9,350.00	3,699.96	1,001.92	3,704.38	0.00	0.00	0.00
13,000.00	90.00	0.255	9,350.00	3,799.96	1,002.36	3,804.38	0.00	0.00	0.00
13,100.00	90.00	0.255	9,350.00	3,899.96	1,002.81	3,904.38	0.00	0.00	0.00
13,200.00	90.00	0.255	9,350.00	3,999.95	1,003.25	4,004.38	0.00	0.00	0.00
13,300.00	90.00	0.255	9,350.00	4,099.95	1,003.70	4,104.38	0.00	0.00	0.00
13,400.00	90.00	0.255	9,350.00	4,199.95	1,004.15	4,204.38	0.00	0.00	0.00
13,500.00	90.00	0.255	9,350.00	4,299.95	1,004.59	4,304.38	0.00	0.00	0.00
13,600.00	90.00	0.255	9,350.00	4,399.95	1,005.04	4,404.38	0.00	0.00	0.00
13,700.00	90.00	0.255	9,350.00	4,499.95	1,005.48	4,504.38	0.00	0.00	0.00
13,800.00	90.00	0.255	9,350.00	4,599.95	1,005.93	4,604.38	0.00	0.00	0.00
13,900.00	90.00	0.255	9,350.00	4,699.95	1,006.37	4,704.38	0.00	0.00	0.00



FLAT CREEK
RESOURCES

Planning Report

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,000.00	90.00	0.255	9,350.00	4,799.95	1,006.82	4,804.38	0.00	0.00	0.00
14,100.00	90.00	0.255	9,350.00	4,899.95	1,007.26	4,904.38	0.00	0.00	0.00
14,200.00	90.00	0.255	9,350.00	4,999.94	1,007.71	5,004.38	0.00	0.00	0.00
14,300.00	90.00	0.255	9,350.00	5,099.94	1,008.16	5,104.38	0.00	0.00	0.00
14,400.00	90.00	0.255	9,350.00	5,199.94	1,008.60	5,204.38	0.00	0.00	0.00
14,500.00	90.00	0.255	9,350.00	5,299.94	1,009.05	5,304.38	0.00	0.00	0.00
14,600.00	90.00	0.255	9,350.00	5,399.94	1,009.49	5,404.38	0.00	0.00	0.00
14,700.00	90.00	0.255	9,350.00	5,499.94	1,009.94	5,504.38	0.00	0.00	0.00
14,800.00	90.00	0.255	9,350.00	5,599.94	1,010.38	5,604.38	0.00	0.00	0.00
14,900.00	90.00	0.255	9,350.00	5,699.94	1,010.83	5,704.38	0.00	0.00	0.00
15,000.00	90.00	0.255	9,350.00	5,799.94	1,011.28	5,804.38	0.00	0.00	0.00
15,100.00	90.00	0.255	9,350.00	5,899.94	1,011.72	5,904.38	0.00	0.00	0.00
15,200.00	90.00	0.255	9,350.00	5,999.94	1,012.17	6,004.38	0.00	0.00	0.00
15,300.00	90.00	0.255	9,350.00	6,099.93	1,012.61	6,104.38	0.00	0.00	0.00
15,400.00	90.00	0.255	9,350.00	6,199.93	1,013.06	6,204.38	0.00	0.00	0.00
15,500.00	90.00	0.255	9,350.00	6,299.93	1,013.50	6,304.38	0.00	0.00	0.00
15,600.00	90.00	0.255	9,350.00	6,399.93	1,013.95	6,404.38	0.00	0.00	0.00
15,700.00	90.00	0.255	9,350.00	6,499.93	1,014.39	6,504.38	0.00	0.00	0.00
15,800.00	90.00	0.255	9,350.00	6,599.93	1,014.84	6,604.38	0.00	0.00	0.00
15,900.00	90.00	0.255	9,350.00	6,699.93	1,015.29	6,704.38	0.00	0.00	0.00
16,000.00	90.00	0.255	9,350.00	6,799.93	1,015.73	6,804.38	0.00	0.00	0.00
16,100.00	90.00	0.255	9,350.00	6,899.93	1,016.18	6,904.38	0.00	0.00	0.00
16,200.00	90.00	0.255	9,350.00	6,999.93	1,016.62	7,004.38	0.00	0.00	0.00
16,300.00	90.00	0.255	9,350.00	7,099.92	1,017.07	7,104.38	0.00	0.00	0.00
16,400.00	90.00	0.255	9,350.00	7,199.92	1,017.51	7,204.38	0.00	0.00	0.00
16,500.00	90.00	0.255	9,350.00	7,299.92	1,017.96	7,304.38	0.00	0.00	0.00
16,600.00	90.00	0.255	9,350.00	7,399.92	1,018.40	7,404.38	0.00	0.00	0.00
16,700.00	90.00	0.255	9,350.00	7,499.92	1,018.85	7,504.38	0.00	0.00	0.00
16,800.00	90.00	0.255	9,350.00	7,599.92	1,019.30	7,604.38	0.00	0.00	0.00
16,900.00	90.00	0.255	9,350.00	7,699.92	1,019.74	7,704.38	0.00	0.00	0.00
17,000.00	90.00	0.255	9,350.00	7,799.92	1,020.19	7,804.38	0.00	0.00	0.00
17,100.00	90.00	0.255	9,350.00	7,899.92	1,020.63	7,904.38	0.00	0.00	0.00
17,200.00	90.00	0.255	9,350.00	7,999.92	1,021.08	8,004.38	0.00	0.00	0.00
17,300.00	90.00	0.255	9,350.00	8,099.91	1,021.52	8,104.38	0.00	0.00	0.00
17,400.00	90.00	0.255	9,350.00	8,199.91	1,021.97	8,204.38	0.00	0.00	0.00
17,500.00	90.00	0.255	9,350.00	8,299.91	1,022.41	8,304.38	0.00	0.00	0.00
17,600.00	90.00	0.255	9,350.00	8,399.91	1,022.86	8,404.38	0.00	0.00	0.00
17,700.00	90.00	0.255	9,350.00	8,499.91	1,023.31	8,504.38	0.00	0.00	0.00
17,800.00	90.00	0.255	9,350.00	8,599.91	1,023.75	8,604.38	0.00	0.00	0.00
17,900.00	90.00	0.255	9,350.00	8,699.91	1,024.20	8,704.38	0.00	0.00	0.00
18,000.00	90.00	0.255	9,350.00	8,799.91	1,024.64	8,804.38	0.00	0.00	0.00
18,100.00	90.00	0.255	9,350.00	8,899.91	1,025.09	8,904.38	0.00	0.00	0.00
18,200.00	90.00	0.255	9,350.00	8,999.91	1,025.53	9,004.38	0.00	0.00	0.00
18,300.00	90.00	0.255	9,350.00	9,099.90	1,025.98	9,104.38	0.00	0.00	0.00
18,400.00	90.00	0.255	9,350.00	9,199.90	1,026.43	9,204.38	0.00	0.00	0.00
18,500.00	90.00	0.255	9,350.00	9,299.90	1,026.87	9,304.38	0.00	0.00	0.00
18,600.00	90.00	0.255	9,350.00	9,399.90	1,027.32	9,404.38	0.00	0.00	0.00
18,700.00	90.00	0.255	9,350.00	9,499.90	1,027.76	9,504.38	0.00	0.00	0.00
18,800.00	90.00	0.255	9,350.00	9,599.90	1,028.21	9,604.38	0.00	0.00	0.00
18,900.00	90.00	0.255	9,350.00	9,699.90	1,028.65	9,704.38	0.00	0.00	0.00
19,000.00	90.00	0.255	9,350.00	9,799.90	1,029.10	9,804.38	0.00	0.00	0.00
19,100.00	90.00	0.255	9,350.00	9,899.90	1,029.54	9,904.38	0.00	0.00	0.00
19,135.42	90.00	0.255	9,350.00	9,935.32	1,029.70	9,939.80	0.00	0.00	0.00

FLAT CREEK
RESOURCES

Planning Report

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
PBHL/TD @ 19135.42 MD 9350.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Jawbone 20 FTP 330 F5	0.00	0.255	8,777.04	-28.90	985.30	419,216.700	523,306.200	32.152521101	-104.258025839
- plan hits target center									
- Rectangle (sides W660.00 H9,964.31 D0.00)									
Jawbone 20 LTP 330 FN	0.00	0.000	9,350.00	9,935.32	1,029.70	429,180.900	523,350.600	32.179912785	-104.257859794
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.00	1,200.00	0.00	0.00	KOP Begin 2°/100' build	
1,596.30	1,595.04	-0.80	27.36	Begin 7.93° tangent	
8,347.76	8,282.00	-28.10	957.95	Begin 2°/100' drop	
8,744.06	8,677.04	-28.90	985.30	Begin vertical hold	
8,844.06	8,777.04	-28.90	985.30	Begin 10°/100' build	
9,744.06	9,350.00	544.05	987.86	Begin 90.00° lateral	
19,135.42	9,350.00	9,935.32	1,029.70	PBHL/TD @ 19135.42 MD 9350.00 TVD	

FLAT CREEK
RESOURCES

Planning Report - Geographic

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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

Site	Jawbone				
Site Position:		Northing:	419,218.600 usft	Latitude:	32.152532039
From:	Map	Easting:	520,115.600 usft	Longitude:	-104.268335365
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Jawbone Fed Com LW 20H, Surf loc: 394 FSL 1991 FEL Section 02-T25S-R26E					
Well Position	+N/-S	0.00 ft	Northing:	419,245.600 usft	Latitude:	32.152602402
	+E/-W	0.00 ft	Easting:	522,320.900 usft	Longitude:	-104.261209497
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,385.00 ft
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/8/2023	6.59	59.66	47,148.65936310

Design	rev0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	0.255

Plan Survey Tool Program	Date			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,134.48 rev0 (Original Hole)		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,596.30	7.93	91.680	1,595.04	-0.80	27.36	2.00	2.00	0.00	91.68	
8,347.76	7.93	91.680	8,282.00	-28.10	957.95	0.00	0.00	0.00	0.00	
8,744.06	0.00	0.000	8,677.04	-28.90	985.30	2.00	-2.00	0.00	180.00	
8,844.06	0.00	0.000	8,777.04	-28.90	985.30	0.00	0.00	0.00	0.00	Jawbone 20 FTP 330
9,744.06	90.00	0.255	9,350.00	544.05	987.86	10.00	10.00	0.03	0.26	
19,135.42	90.00	0.255	9,350.00	9,935.32	1,029.70	0.00	0.00	0.00	0.00	Jawbone 20 LTP 330

FLAT CREEK
RESOURCES

Planning Report - Geographic

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
100.00	0.00	0.000	100.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
200.00	0.00	0.000	200.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
300.00	0.00	0.000	300.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
400.00	0.00	0.000	400.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
500.00	0.00	0.000	500.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
600.00	0.00	0.000	600.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
700.00	0.00	0.000	700.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
800.00	0.00	0.000	800.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
900.00	0.00	0.000	900.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
1,000.00	0.00	0.000	1,000.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
1,100.00	0.00	0.000	1,100.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
1,200.00	0.00	0.000	1,200.00	0.00	0.00	419,245.600	522,320.900	32.152602402	-104.261209497
KOP Begin 2°/100' build									
1,300.00	2.00	91.680	1,299.98	-0.05	1.74	419,245.549	522,322.645	32.152602258	-104.261203860
1,400.00	4.00	91.680	1,399.84	-0.20	6.98	419,245.395	522,327.876	32.152601827	-104.261186958
1,500.00	6.00	91.680	1,499.45	-0.46	15.69	419,245.140	522,336.587	32.152601108	-104.261158810
1,596.30	7.93	91.680	1,595.04	-0.80	27.36	419,244.798	522,348.256	32.152600146	-104.261121106
Begin 7.93° tangent									
1,600.00	7.93	91.680	1,598.70	-0.82	27.87	419,244.783	522,348.766	32.152600104	-104.261119459
1,700.00	7.93	91.680	1,697.75	-1.22	41.65	419,244.378	522,362.549	32.152598967	-104.261074922
1,800.00	7.93	91.680	1,796.79	-1.63	55.43	419,243.974	522,376.333	32.152597830	-104.261030385
1,900.00	7.93	91.680	1,895.84	-2.03	69.22	419,243.570	522,390.116	32.152596694	-104.260985849
2,000.00	7.93	91.680	1,994.88	-2.43	83.00	419,243.166	522,403.900	32.152595557	-104.260941312
2,100.00	7.93	91.680	2,093.93	-2.84	96.78	419,242.761	522,417.683	32.152594420	-104.260896775
2,200.00	7.93	91.680	2,192.97	-3.24	110.57	419,242.357	522,431.467	32.152593283	-104.260852239
2,300.00	7.93	91.680	2,292.01	-3.65	124.35	419,241.953	522,445.250	32.152592146	-104.260807702
2,400.00	7.93	91.680	2,391.06	-4.05	138.13	419,241.548	522,459.034	32.152591009	-104.260763165
2,500.00	7.93	91.680	2,490.10	-4.46	151.92	419,241.144	522,472.817	32.152589872	-104.260718628
2,600.00	7.93	91.680	2,589.15	-4.86	165.70	419,240.740	522,486.601	32.152588735	-104.260674092
2,700.00	7.93	91.680	2,688.19	-5.26	179.48	419,240.336	522,500.384	32.152587598	-104.260629555
2,800.00	7.93	91.680	2,787.24	-5.67	193.27	419,239.931	522,514.168	32.152586461	-104.260585018
2,900.00	7.93	91.680	2,886.28	-6.07	207.05	419,239.527	522,527.951	32.152585324	-104.260540482
3,000.00	7.93	91.680	2,985.33	-6.48	220.84	419,239.123	522,541.735	32.152584187	-104.260495945
3,100.00	7.93	91.680	3,084.37	-6.88	234.62	419,238.718	522,555.518	32.152583050	-104.260451408
3,200.00	7.93	91.680	3,183.42	-7.29	248.40	419,238.314	522,569.302	32.152581913	-104.260406871
3,300.00	7.93	91.680	3,282.46	-7.69	262.19	419,237.910	522,583.085	32.152580776	-104.260362335
3,400.00	7.93	91.680	3,381.51	-8.09	275.97	419,237.506	522,596.869	32.152579639	-104.260317798
3,500.00	7.93	91.680	3,480.55	-8.50	289.75	419,237.101	522,610.652	32.152578502	-104.260273261
3,600.00	7.93	91.680	3,579.60	-8.90	303.54	419,236.697	522,624.436	32.152577365	-104.260228725
3,700.00	7.93	91.680	3,678.64	-9.31	317.32	419,236.293	522,638.220	32.152576228	-104.260184188
3,800.00	7.93	91.680	3,777.69	-9.71	331.10	419,235.888	522,652.003	32.152575090	-104.260139651
3,900.00	7.93	91.680	3,876.73	-10.12	344.89	419,235.484	522,665.787	32.152573953	-104.260095115
4,000.00	7.93	91.680	3,975.77	-10.52	358.67	419,235.080	522,679.570	32.152572816	-104.260050578
4,100.00	7.93	91.680	4,074.82	-10.92	372.45	419,234.676	522,693.354	32.152571679	-104.260006041
4,200.00	7.93	91.680	4,173.86	-11.33	386.24	419,234.271	522,707.137	32.152570542	-104.259961504
4,300.00	7.93	91.680	4,272.91	-11.73	400.02	419,233.867	522,720.921	32.152569404	-104.259916968
4,400.00	7.93	91.680	4,371.95	-12.14	413.80	419,233.463	522,734.704	32.152568267	-104.259872431
4,500.00	7.93	91.680	4,471.00	-12.54	427.59	419,233.058	522,748.488	32.152567130	-104.259827894
4,600.00	7.93	91.680	4,570.04	-12.95	441.37	419,232.654	522,762.271	32.152565993	-104.259783358
4,700.00	7.93	91.680	4,669.09	-13.35	455.16	419,232.250	522,776.055	32.152564855	-104.259738821
4,800.00	7.93	91.680	4,768.13	-13.75	468.94	419,231.846	522,789.838	32.152563718	-104.259694284
4,900.00	7.93	91.680	4,867.18	-14.16	482.72	419,231.441	522,803.622	32.152562581	-104.259649748
5,000.00	7.93	91.680	4,966.22	-14.56	496.51	419,231.037	522,817.405	32.152561443	-104.259605211

FLAT CREEK
RESOURCES

Planning Report - Geographic

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	7.93	91.680	5,065.27	-14.97	510.29	419,230.633	522,831.189	32.152560306	-104.259560674
5,200.00	7.93	91.680	5,164.31	-15.37	524.07	419,230.228	522,844.972	32.152559169	-104.259516138
5,300.00	7.93	91.680	5,263.36	-15.78	537.86	419,229.824	522,858.756	32.152558031	-104.259471601
5,400.00	7.93	91.680	5,362.40	-16.18	551.64	419,229.420	522,872.539	32.152556894	-104.259427064
5,500.00	7.93	91.680	5,461.44	-16.58	565.42	419,229.016	522,886.323	32.152555757	-104.259382528
5,600.00	7.93	91.680	5,560.49	-16.99	579.21	419,228.611	522,900.106	32.152554619	-104.259337991
5,700.00	7.93	91.680	5,659.53	-17.39	592.99	419,228.207	522,913.890	32.152553482	-104.259293454
5,800.00	7.93	91.680	5,758.58	-17.80	606.77	419,227.803	522,927.673	32.152552344	-104.259248918
5,900.00	7.93	91.680	5,857.62	-18.20	620.56	419,227.398	522,941.457	32.152551207	-104.259204381
6,000.00	7.93	91.680	5,956.67	-18.61	634.34	419,226.994	522,955.240	32.152550069	-104.259159844
6,100.00	7.93	91.680	6,055.71	-19.01	648.13	419,226.590	522,969.024	32.152548932	-104.259115307
6,200.00	7.93	91.680	6,154.76	-19.41	661.91	419,226.186	522,982.807	32.152547794	-104.259070771
6,300.00	7.93	91.680	6,253.80	-19.82	675.69	419,225.781	522,996.591	32.152546657	-104.259026234
6,400.00	7.93	91.680	6,352.85	-20.22	689.48	419,225.377	523,010.374	32.152545519	-104.258981697
6,500.00	7.93	91.680	6,451.89	-20.63	703.26	419,224.973	523,024.158	32.152544382	-104.258937161
6,600.00	7.93	91.680	6,550.94	-21.03	717.04	419,224.568	523,037.941	32.152543244	-104.258892624
6,700.00	7.93	91.680	6,649.98	-21.44	730.83	419,224.164	523,051.725	32.152542106	-104.258848087
6,800.00	7.93	91.680	6,749.03	-21.84	744.61	419,223.760	523,065.508	32.152540969	-104.258803551
6,900.00	7.93	91.680	6,848.07	-22.24	758.39	419,223.356	523,079.292	32.152539831	-104.258759014
7,000.00	7.93	91.680	6,947.12	-22.65	772.18	419,222.951	523,093.076	32.152538693	-104.258714477
7,100.00	7.93	91.680	7,046.16	-23.05	785.96	419,222.547	523,106.859	32.152537556	-104.258669941
7,200.00	7.93	91.680	7,145.20	-23.46	799.74	419,222.143	523,120.643	32.152536418	-104.258625404
7,300.00	7.93	91.680	7,244.25	-23.86	813.53	419,221.738	523,134.426	32.152535280	-104.258580867
7,400.00	7.93	91.680	7,343.29	-24.27	827.31	419,221.334	523,148.210	32.152534143	-104.258536331
7,500.00	7.93	91.680	7,442.34	-24.67	841.09	419,220.930	523,161.993	32.152533005	-104.258491794
7,600.00	7.93	91.680	7,541.38	-25.07	854.88	419,220.526	523,175.777	32.152531867	-104.258447258
7,700.00	7.93	91.680	7,640.43	-25.48	868.66	419,220.121	523,189.560	32.152530730	-104.258402721
7,800.00	7.93	91.680	7,739.47	-25.88	882.45	419,219.717	523,203.344	32.152529592	-104.258358184
7,900.00	7.93	91.680	7,838.52	-26.29	896.23	419,219.313	523,217.127	32.152528454	-104.258313648
8,000.00	7.93	91.680	7,937.56	-26.69	910.01	419,218.908	523,230.911	32.152527316	-104.258269111
8,100.00	7.93	91.680	8,036.61	-27.10	923.80	419,218.504	523,244.694	32.152526178	-104.258224574
8,200.00	7.93	91.680	8,135.65	-27.50	937.58	419,218.100	523,258.478	32.152525041	-104.258180038
8,300.00	7.93	91.680	8,234.70	-27.90	951.36	419,217.696	523,272.261	32.152523903	-104.258135501
8,347.76	7.93	91.680	8,282.00	-28.10	957.95	419,217.502	523,278.844	32.152523359	-104.258114230
Begin 2°/100' drop									
8,400.00	6.88	91.680	8,333.80	-28.30	964.67	419,217.305	523,285.573	32.152522804	-104.258092489
8,500.00	4.88	91.680	8,433.27	-28.60	974.92	419,217.005	523,295.815	32.152521958	-104.258059396
8,600.00	2.88	91.680	8,533.04	-28.79	981.68	419,216.806	523,302.580	32.152521400	-104.258037536
8,700.00	0.88	91.680	8,632.98	-28.89	984.96	419,216.710	523,305.861	32.152521129	-104.258026933
8,744.06	0.00	0.000	8,677.04	-28.90	985.30	419,216.700	523,306.200	32.152521101	-104.258025839
Begin vertical hold									
8,800.00	0.00	0.000	8,732.98	-28.90	985.30	419,216.700	523,306.200	32.152521101	-104.258025839
8,844.06	0.00	0.000	8,777.04	-28.90	985.30	419,216.700	523,306.200	32.152521101	-104.258025839
Begin 10°/100' build									
8,850.00	0.59	0.255	8,782.98	-28.87	985.30	419,216.731	523,306.200	32.152521185	-104.258025839
8,900.00	5.59	0.255	8,832.89	-26.17	985.31	419,219.428	523,306.212	32.152528601	-104.258025794
8,950.00	10.59	0.255	8,882.37	-19.13	985.35	419,226.466	523,306.244	32.152547947	-104.258025676
9,000.00	15.59	0.255	8,931.06	-7.81	985.40	419,237.789	523,306.294	32.152579075	-104.258025488
9,050.00	20.59	0.255	8,978.57	7.71	985.47	419,253.313	523,306.363	32.152621749	-104.258025229
9,100.00	25.59	0.255	9,024.55	27.32	985.55	419,272.918	523,306.451	32.152675645	-104.258024903
9,150.00	30.59	0.255	9,068.65	50.86	985.66	419,296.456	523,306.556	32.152740351	-104.258024510
9,200.00	35.59	0.255	9,110.52	78.15	985.78	419,323.748	523,306.677	32.152815376	-104.258024056
9,250.00	40.59	0.255	9,149.86	108.98	985.92	419,354.585	523,306.815	32.152900148	-104.258023542
9,300.00	45.59	0.255	9,186.36	143.13	986.07	419,388.733	523,306.967	32.152994023	-104.258022973

FLAT CREEK
RESOURCES

Planning Report - Geographic

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,350.00	50.59	0.255	9,219.74	180.33	986.23	419,425.933	523,307.132	32.153096285	-104.258022354
9,400.00	55.59	0.255	9,249.76	220.30	986.41	419,465.901	523,307.311	32.153206157	-104.258021688
9,450.00	60.59	0.255	9,276.18	262.73	986.60	419,508.332	523,307.500	32.153322803	-104.258020981
9,500.00	65.59	0.255	9,298.80	307.31	986.80	419,552.905	523,307.698	32.153445334	-104.258020238
9,550.00	70.59	0.255	9,317.45	353.68	987.01	419,599.280	523,307.905	32.153572818	-104.258019466
9,600.00	75.59	0.255	9,331.98	401.50	987.22	419,647.103	523,308.118	32.153704285	-104.258018669
9,650.00	80.59	0.255	9,342.29	450.41	987.44	419,696.011	523,308.336	32.153838735	-104.258017854
9,700.00	85.59	0.255	9,348.30	500.03	987.66	419,745.632	523,308.557	32.153975143	-104.258017028
9,744.06	90.00	0.255	9,350.00	544.05	987.86	419,789.651	523,308.753	32.154096152	-104.258016294
Begin 90.00° lateral									
9,800.00	90.00	0.255	9,350.00	599.99	988.10	419,845.587	523,309.002	32.154249922	-104.258015363
9,900.00	90.00	0.255	9,350.00	699.99	988.55	419,945.586	523,309.448	32.154524820	-104.258013697
10,000.00	90.00	0.255	9,350.00	799.99	989.00	420,045.585	523,309.894	32.154799718	-104.258012031
10,100.00	90.00	0.255	9,350.00	899.99	989.44	420,145.584	523,310.339	32.155074617	-104.258010365
10,200.00	90.00	0.255	9,350.00	999.98	989.89	420,245.583	523,310.785	32.155349515	-104.258008699
10,300.00	90.00	0.255	9,350.00	1,099.98	990.33	420,345.581	523,311.230	32.155624413	-104.258007033
10,400.00	90.00	0.255	9,350.00	1,199.98	990.78	420,445.580	523,311.676	32.155899311	-104.258005367
10,500.00	90.00	0.255	9,350.00	1,299.98	991.22	420,545.579	523,312.122	32.156174209	-104.258003701
10,600.00	90.00	0.255	9,350.00	1,399.98	991.67	420,645.578	523,312.567	32.156449107	-104.258002035
10,700.00	90.00	0.255	9,350.00	1,499.98	992.11	420,745.577	523,313.013	32.156724006	-104.258000369
10,800.00	90.00	0.255	9,350.00	1,599.98	992.56	420,845.575	523,313.458	32.156998904	-104.257998703
10,900.00	90.00	0.255	9,350.00	1,699.98	993.01	420,945.574	523,313.904	32.157273802	-104.257997037
11,000.00	90.00	0.255	9,350.00	1,799.98	993.45	421,045.573	523,314.350	32.157548700	-104.257995371
11,100.00	90.00	0.255	9,350.00	1,899.98	993.90	421,145.572	523,314.795	32.157823598	-104.257993705
11,200.00	90.00	0.255	9,350.00	1,999.97	994.34	421,245.571	523,315.241	32.158098496	-104.257992039
11,300.00	90.00	0.255	9,350.00	2,099.97	994.79	421,345.569	523,315.686	32.158373393	-104.257990373
11,400.00	90.00	0.255	9,350.00	2,199.97	995.23	421,445.568	523,316.132	32.158648291	-104.257988707
11,500.00	90.00	0.255	9,350.00	2,299.97	995.68	421,545.567	523,316.577	32.158923189	-104.257987041
11,600.00	90.00	0.255	9,350.00	2,399.97	996.12	421,645.566	523,317.023	32.159198087	-104.257985375
11,700.00	90.00	0.255	9,350.00	2,499.97	996.57	421,745.565	523,317.469	32.159472985	-104.257983709
11,800.00	90.00	0.255	9,350.00	2,599.97	997.02	421,845.563	523,317.914	32.159747883	-104.257982043
11,900.00	90.00	0.255	9,350.00	2,699.97	997.46	421,945.562	523,318.360	32.160022781	-104.257980376
12,000.00	90.00	0.255	9,350.00	2,799.97	997.91	422,045.561	523,318.805	32.160297679	-104.257978710
12,100.00	90.00	0.255	9,350.00	2,899.97	998.35	422,145.560	523,319.251	32.160572577	-104.257977044
12,200.00	90.00	0.255	9,350.00	2,999.96	998.80	422,245.559	523,319.697	32.160847475	-104.257975378
12,300.00	90.00	0.255	9,350.00	3,099.96	999.24	422,345.557	523,320.142	32.161122373	-104.257973712
12,400.00	90.00	0.255	9,350.00	3,199.96	999.69	422,445.556	523,320.588	32.161397271	-104.257972046
12,500.00	90.00	0.255	9,350.00	3,299.96	1,000.14	422,545.555	523,321.033	32.161672169	-104.257970379
12,600.00	90.00	0.255	9,350.00	3,399.96	1,000.58	422,645.554	523,321.479	32.161947067	-104.257968713
12,700.00	90.00	0.255	9,350.00	3,499.96	1,001.03	422,745.553	523,321.925	32.162221965	-104.257967047
12,800.00	90.00	0.255	9,350.00	3,599.96	1,001.47	422,845.551	523,322.370	32.162496863	-104.257965381
12,900.00	90.00	0.255	9,350.00	3,699.96	1,001.92	422,945.550	523,322.816	32.162771761	-104.257963715
13,000.00	90.00	0.255	9,350.00	3,799.96	1,002.36	423,045.549	523,323.261	32.163046658	-104.257962048
13,100.00	90.00	0.255	9,350.00	3,899.96	1,002.81	423,145.548	523,323.707	32.163321556	-104.257960382
13,200.00	90.00	0.255	9,350.00	3,999.95	1,003.25	423,245.547	523,324.152	32.163596454	-104.257958716
13,300.00	90.00	0.255	9,350.00	4,099.95	1,003.70	423,345.545	523,324.598	32.163871352	-104.257957049
13,400.00	90.00	0.255	9,350.00	4,199.95	1,004.15	423,445.544	523,325.044	32.164146250	-104.257955383
13,500.00	90.00	0.255	9,350.00	4,299.95	1,004.59	423,545.543	523,325.489	32.164421148	-104.257953717
13,600.00	90.00	0.255	9,350.00	4,399.95	1,005.04	423,645.542	523,325.935	32.164696045	-104.257952051
13,700.00	90.00	0.255	9,350.00	4,499.95	1,005.48	423,745.541	523,326.380	32.164970943	-104.257950384
13,800.00	90.00	0.255	9,350.00	4,599.95	1,005.93	423,845.539	523,326.826	32.165245841	-104.257948718
13,900.00	90.00	0.255	9,350.00	4,699.95	1,006.37	423,945.538	523,327.272	32.165520739	-104.257947051
14,000.00	90.00	0.255	9,350.00	4,799.95	1,006.82	424,045.537	523,327.717	32.165795636	-104.257945385
14,100.00	90.00	0.255	9,350.00	4,899.95	1,007.26	424,145.536	523,328.163	32.166070534	-104.257943719

FLAT CREEK
RESOURCES

Planning Report - Geographic

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,200.00	90.00	0.255	9,350.00	4,999.94	1,007.71	424,245.535	523,328.608	32.166345432	-104.257942052
14,300.00	90.00	0.255	9,350.00	5,099.94	1,008.16	424,345.533	523,329.054	32.166620330	-104.257940386
14,400.00	90.00	0.255	9,350.00	5,199.94	1,008.60	424,445.532	523,329.500	32.166895227	-104.257938719
14,500.00	90.00	0.255	9,350.00	5,299.94	1,009.05	424,545.531	523,329.945	32.167170125	-104.257937053
14,600.00	90.00	0.255	9,350.00	5,399.94	1,009.49	424,645.530	523,330.391	32.167445023	-104.257935387
14,700.00	90.00	0.255	9,350.00	5,499.94	1,009.94	424,745.529	523,330.836	32.167719920	-104.257933720
14,800.00	90.00	0.255	9,350.00	5,599.94	1,010.38	424,845.528	523,331.282	32.167994818	-104.257932054
14,900.00	90.00	0.255	9,350.00	5,699.94	1,010.83	424,945.526	523,331.728	32.168269716	-104.257930387
15,000.00	90.00	0.255	9,350.00	5,799.94	1,011.28	425,045.525	523,332.173	32.168544613	-104.257928721
15,100.00	90.00	0.255	9,350.00	5,899.94	1,011.72	425,145.524	523,332.619	32.168819511	-104.257927054
15,200.00	90.00	0.255	9,350.00	5,999.94	1,012.17	425,245.523	523,333.064	32.169094408	-104.257925388
15,300.00	90.00	0.255	9,350.00	6,099.93	1,012.61	425,345.522	523,333.510	32.169369306	-104.257923721
15,400.00	90.00	0.255	9,350.00	6,199.93	1,013.06	425,445.520	523,333.955	32.169644203	-104.257922055
15,500.00	90.00	0.255	9,350.00	6,299.93	1,013.50	425,545.519	523,334.401	32.169919101	-104.257920388
15,600.00	90.00	0.255	9,350.00	6,399.93	1,013.95	425,645.518	523,334.847	32.170193999	-104.257918722
15,700.00	90.00	0.255	9,350.00	6,499.93	1,014.39	425,745.517	523,335.292	32.170468896	-104.257917055
15,800.00	90.00	0.255	9,350.00	6,599.93	1,014.84	425,845.516	523,335.738	32.170743794	-104.257915388
15,900.00	90.00	0.255	9,350.00	6,699.93	1,015.29	425,945.514	523,336.183	32.171018691	-104.257913722
16,000.00	90.00	0.255	9,350.00	6,799.93	1,015.73	426,045.513	523,336.629	32.171293589	-104.257912055
16,100.00	90.00	0.255	9,350.00	6,899.93	1,016.18	426,145.512	523,337.075	32.171568486	-104.257910389
16,200.00	90.00	0.255	9,350.00	6,999.93	1,016.62	426,245.511	523,337.520	32.171843384	-104.257908722
16,300.00	90.00	0.255	9,350.00	7,099.92	1,017.07	426,345.510	523,337.966	32.172118281	-104.257907055
16,400.00	90.00	0.255	9,350.00	7,199.92	1,017.51	426,445.508	523,338.411	32.172393178	-104.257905389
16,500.00	90.00	0.255	9,350.00	7,299.92	1,017.96	426,545.507	523,338.857	32.172668076	-104.257903722
16,600.00	90.00	0.255	9,350.00	7,399.92	1,018.40	426,645.506	523,339.303	32.172942973	-104.257902055
16,700.00	90.00	0.255	9,350.00	7,499.92	1,018.85	426,745.505	523,339.748	32.173217871	-104.257900389
16,800.00	90.00	0.255	9,350.00	7,599.92	1,019.30	426,845.504	523,340.194	32.173492768	-104.257898722
16,900.00	90.00	0.255	9,350.00	7,699.92	1,019.74	426,945.502	523,340.639	32.173767666	-104.257897055
17,000.00	90.00	0.255	9,350.00	7,799.92	1,020.19	427,045.501	523,341.085	32.174042563	-104.257895389
17,100.00	90.00	0.255	9,350.00	7,899.92	1,020.63	427,145.500	523,341.530	32.174317460	-104.257893722
17,200.00	90.00	0.255	9,350.00	7,999.92	1,021.08	427,245.499	523,341.976	32.174592358	-104.257892055
17,300.00	90.00	0.255	9,350.00	8,099.91	1,021.52	427,345.498	523,342.422	32.174867255	-104.257890388
17,400.00	90.00	0.255	9,350.00	8,199.91	1,021.97	427,445.496	523,342.867	32.175142152	-104.257888721
17,500.00	90.00	0.255	9,350.00	8,299.91	1,022.41	427,545.495	523,343.313	32.175417050	-104.257887055
17,600.00	90.00	0.255	9,350.00	8,399.91	1,022.86	427,645.494	523,343.758	32.175691947	-104.257885388
17,700.00	90.00	0.255	9,350.00	8,499.91	1,023.31	427,745.493	523,344.204	32.175966844	-104.257883721
17,800.00	90.00	0.255	9,350.00	8,599.91	1,023.75	427,845.492	523,344.650	32.176241741	-104.257882054
17,900.00	90.00	0.255	9,350.00	8,699.91	1,024.20	427,945.490	523,345.095	32.176516639	-104.257880387
18,000.00	90.00	0.255	9,350.00	8,799.91	1,024.64	428,045.489	523,345.541	32.176791536	-104.257878721
18,100.00	90.00	0.255	9,350.00	8,899.91	1,025.09	428,145.488	523,345.986	32.177066433	-104.257877054
18,200.00	90.00	0.255	9,350.00	8,999.91	1,025.53	428,245.487	523,346.432	32.177341330	-104.257875387
18,300.00	90.00	0.255	9,350.00	9,099.90	1,025.98	428,345.486	523,346.878	32.177616228	-104.257873720
18,400.00	90.00	0.255	9,350.00	9,199.90	1,026.43	428,445.484	523,347.323	32.177891125	-104.257872053
18,500.00	90.00	0.255	9,350.00	9,299.90	1,026.87	428,545.483	523,347.769	32.178166022	-104.257870386
18,600.00	90.00	0.255	9,350.00	9,399.90	1,027.32	428,645.482	523,348.214	32.178440919	-104.257868719
18,700.00	90.00	0.255	9,350.00	9,499.90	1,027.76	428,745.481	523,348.660	32.178715816	-104.257867052
18,800.00	90.00	0.255	9,350.00	9,599.90	1,028.21	428,845.480	523,349.106	32.178990714	-104.257865385
18,900.00	90.00	0.255	9,350.00	9,699.90	1,028.65	428,945.478	523,349.551	32.179265611	-104.257863719
19,000.00	90.00	0.255	9,350.00	9,799.90	1,029.10	429,045.477	523,349.997	32.179540508	-104.257862052
19,100.00	90.00	0.255	9,350.00	9,899.90	1,029.54	429,145.476	523,350.442	32.179815405	-104.257860385
19,135.42	90.00	0.255	9,350.00	9,935.32	1,029.70	429,180.900	523,350.600	32.179912785	-104.257859794
PBHL/TD @ 19135.42 MD 9350.00 TVD									



FLAT CREEK
RESOURCES


Planning Report - Geographic

Database:	DT_Aug2923v16	Local Co-ordinate Reference:	Well Jawbone Fed Com LW 20H
Company:	Flat Creek Resources, LLC	TVD Reference:	RKB=3385+26.5 @ 3411.50ft
Project:	Eddy County, New Mexico NAD27 NME	MD Reference:	RKB=3385+26.5 @ 3411.50ft
Site:	Jawbone	North Reference:	Grid
Well:	Jawbone Fed Com LW 20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
Jawbone 20 FTP 330 FS	0.00	0.255	8,777.04	-28.90	985.30	419,216.700	523,306.200	32.152521101	-104.258025839
- plan hits target center									
- Rectangle (sides W660.00 H9,964.31 D0.00)									
Jawbone 20 LTP 330 FN	0.00	0.000	9,350.00	9,935.32	1,029.70	429,180.900	523,350.600	32.179912785	-104.257859794
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	KOP Begin 2°/100' build
1,596.30	1,595.04	-0.80	27.36	Begin 7.93° tangent
8,347.76	8,282.00	-28.10	957.95	Begin 2°/100' drop
8,744.06	8,677.04	-28.90	985.30	Begin vertical hold
8,844.06	8,777.04	-28.90	985.30	Begin 10°/100' build
9,744.06	9,350.00	544.05	987.86	Begin 90.00° lateral
19,135.42	9,350.00	9,935.32	1,029.70	PBHL/TD @ 19135.42 MD 9350.00 TVD

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Flat Creek Resources LLC
LEASE NO.:	NMNM0441951
LOCATION:	Section 2, T.25 S., R.26 E., NMPM
COUNTY:	Eddy County, New Mexico 

WELL NAME & NO.:	Jawbone Fed Com LW 20H
SURFACE HOLE FOOTAGE:	394'/S & 1991'/E
BOTTOM HOLE FOOTAGE	330'/N & 1005'/E
ATS/API ID:	ATS-24-276
APD ID:	10400095550
Sundry ID:	N/a

WELL NAME & NO.:	Jawbone Fed Com LW 21H
SURFACE HOLE FOOTAGE:	395'/S & 2021'/E
BOTTOM HOLE FOOTAGE	330'/N & 1660'/E
ATS/API ID:	ATS-24-277
APD ID:	10400095552
Sundry ID:	N/a

WELL NAME & NO.:	Jawbone Fed Com LW 22H
SURFACE HOLE FOOTAGE:	396'/S & 2050'/E
BOTTOM HOLE FOOTAGE	330'/N & 2264'/E
ATS/API ID:	ATS-24-302
APD ID:	10400095659
Sundry ID:	N/a

COA

H2S	Yes		
Potash	None		
Cave/Karst Potential	High		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	Conventional and Multibowl		
Other	<input type="checkbox"/> 4 String	Capitan Reef None	<input type="checkbox"/> WIPP
Other	Pilot Hole None	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **650 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - 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.

Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing 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 High 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.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

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.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch 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 43 CFR 3172.6(b)(9) 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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- 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

EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

BLM_NM_CFO_DrillingNotifications@BLM.GOV

(575) 361-2822

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 2nd 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 **43 CFR part 3170 Subpart 3172** 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 when present.

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 **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.
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 43 CFR 3172.6(b)(9) 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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172**.

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.

Long Vo (LVO) 3/7/2024

Hydrogen Sulfide Plan Summary

- A. All personnel shall receive proper H₂S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- Well control equipment
 - a. Flare line 150' from wellhead to be ignited by flare gun.
 - b. Choke manifold with a remotely operated choke.
 - c. Mud/gas separator

- Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor th sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

- H₂S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
 - a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
 - c. Two wind socks will be placed in strategic locations, visible from all angles.



FLAT CREEK
RESOURCES

- **Mud program:**
The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.
- **Metallurgy:**
All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- **Communication:**
Communication will be via cell phones and land lines where available.

Company Personnel to be Notified

Rodney Littleton, Vice President of Operations Office: (817) 310-8578
Mobile: (972) 672-4461

Local & County Agencies

Whites City Fire Department	911 or (575) 746-5000
Malaga Fire Department	911 or (575) 745-2311
Carlsbad Fire Department	911 or (575) 885-3125
Eddy County Sheriff (Carlsbad)	911 (575) 887-7551
Eddy County Emergency Management (Carlsbad)	(575) 887-9511
Carlsbad Medical Center Hospital	(575) 887-4100
Eddy County South Road Department (Carlsbad)	(575) 885-4835

State Agencies

NM State Police (Carlsbad)	(575) 885-3138
NM Oil Conservation (Artesia)	(575) 748-1283
NM Oil Conservation (Santa Fe)	(505) 476-3440
NM Dept. of Transportation (Roswell)	(575) 637-7201



Federal Agencies

BLM Carlsbad Field Office	(575) 234-5972
National Response Center	(800) 424-8802
US EPA Region 6 (Dallas)	(800) 887-6063
(214) 665-6444	

Residents within 2 miles

No

Air Evacuation

Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256

Veterinarians

Desert Willow Veterinary Services (Carlsbad)	(575) 885-3399
Animal Care Center (Carlsbad)	(575) 885-5352



NORTH

$$1'' = 100$$

PREVAILING WINDS
BLOW FROM SOUTH

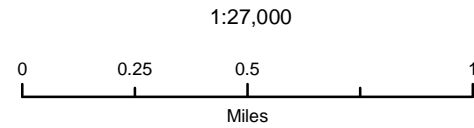


Flat Creek Resources

Jawbone LW Fed Com Pad
H2S Contingency Plan:
2 Mile Radius Map

Sec. 2, Township 25S, Range 26E
Eddy County, New Mexico

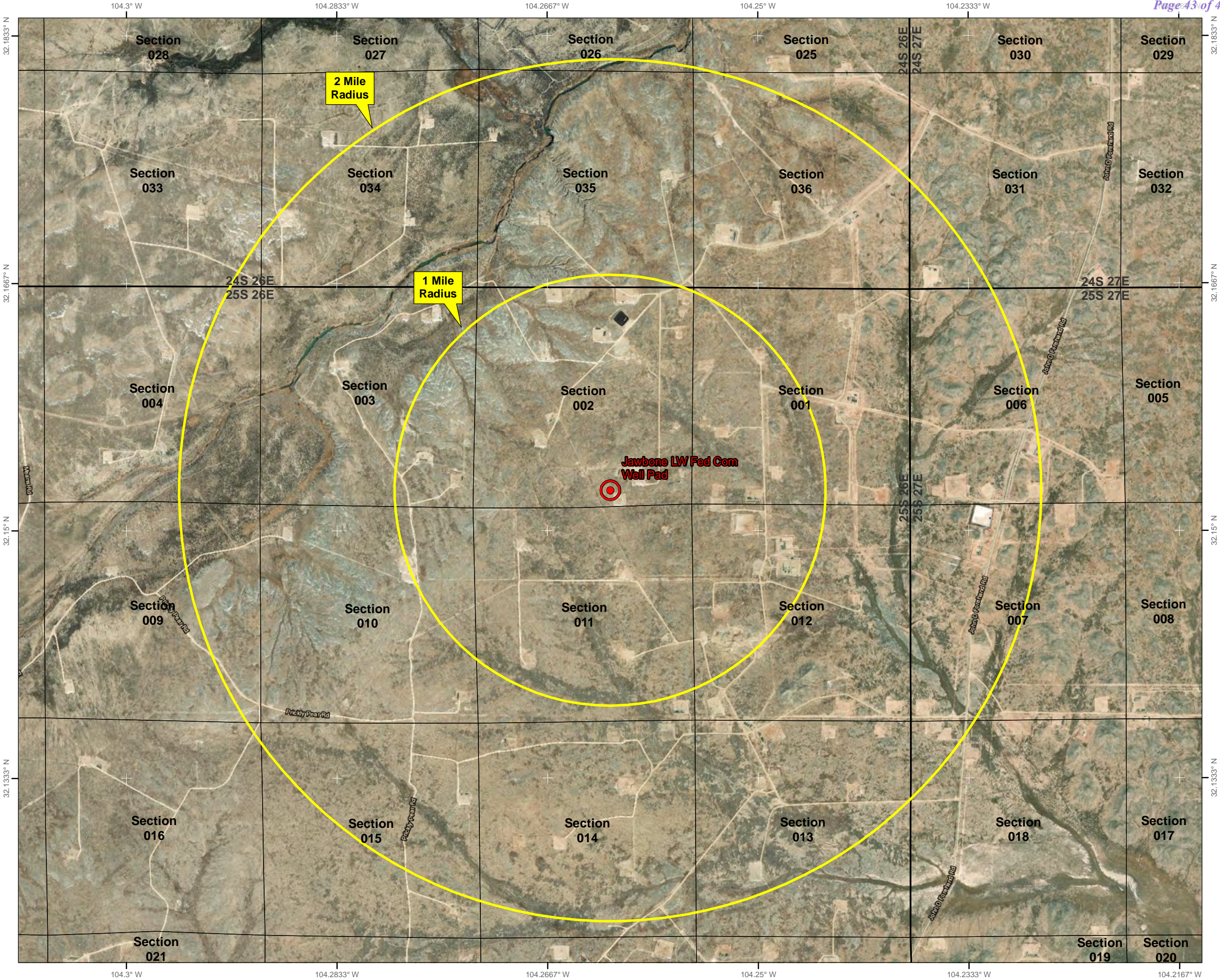
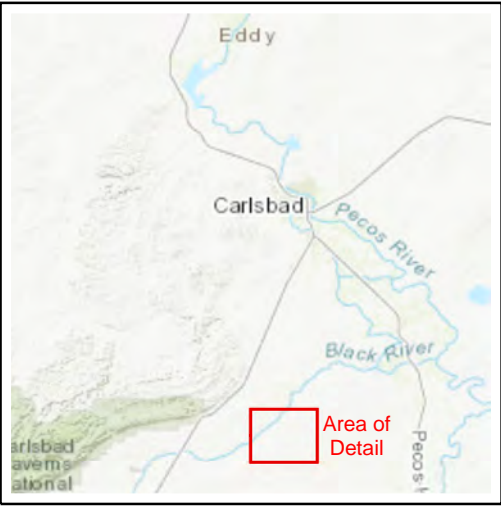
 Well Pad Location

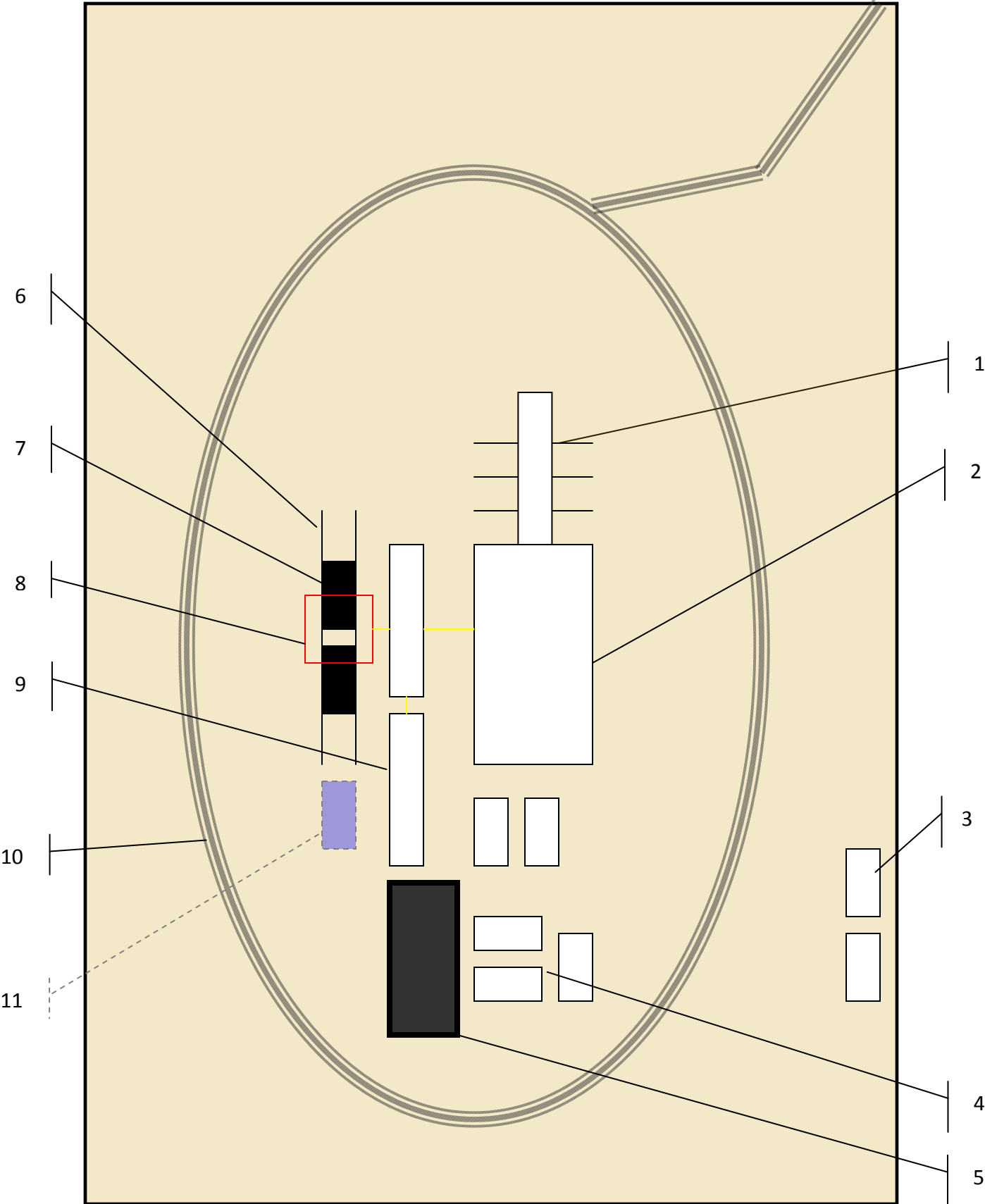


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., October 30, 2023
for Flat Creek Resources, LLC





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



Above: Centrifugal Closed Loop System



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



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

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 343266

CONDITIONS

Operator: Flat Creek Resources, LLC 777 Main St. Fort Worth, TX 76102	OGRID: 374034
	Action Number: 343266
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	5/31/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/31/2024
ward.rikala	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	5/31/2024
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	5/31/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	5/31/2024
ward.rikala	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	5/31/2024