Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM138868

6. If Indian, Allotee or Tribe Name
327168

1a. Type of work: [✓] DRILL [ ] REENTER

1b. Type of Well: [✓] Oil Well [ ] Gas Well [ ] Other

1c. Type of Completion: [ ] Hydraulic Fracturing [ ] Single Zone [✓] Multiple Zone

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

8. Lease Name and Well No.
PHANTOM BANK 31 FED COM
502H

2. Name of Operator
FLAT CREEK RESOURCES LLC

9. API Well No.
30 015 46755

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
777 Main Street, Suite 3600 Fort Worth TX 76102	(817)310-8570	GATUNA CANYON; BONE SPRING / BO

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface LOT D / 650 FNL / 300 FWL / LAT 32.004257 / LONG -103.807475
At proposed prod. zone LOT L1 / 698 FNL / 30 FWL / LAT 32.004113 / LONG -103.826026

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 32 / T26S / R31E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
38 miles	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
300 feet	259.65	264.48

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
4700 feet	9334 feet / 14840 feet	FED: NMB001675

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3127 feet	08/01/2019	30 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Rodney Littleton / Ph: (817)310-8578	04/01/2019
Title: by Vice President Operations		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 01/27/2020
Title: Assistant Field Manager Lands & Minerals	Office: CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

APPROVED WITH CONDITIONS

Approval Date: 01/27/2020

(Continued on page 2)

*(Instructions on page 2)

KS 2-19-20

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

Operator Certification Data Report

01/28/2020

Operator Certification

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

NAME: Rodney Littleton **Signed on:** 03/20/2019

Title: Vice President – Operations

Street Address: 777 Main Street, Suite 3600

City: Fort Worth **State:** TX **Zip:** 76102

Phone: (817)310-8578

Email address: rodney.littleton@flatcreekresources.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

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

Application Data Report

01/28/2020

APD ID: 10400039940 **Submission Date:** 04/01/2019

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400039940 **Tie to previous NOS?** N **Submission Date:** 04/01/2019

BLM Office: CARLSBAD **User:** Rodney Littleton **Title:** Vice President – Operations

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

Lease number: NMNM138868 **Lease Acres:** 259.65

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

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

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** FLAT CREEK RESOURCES LLC

Operator letter of designation:

Operator Info

Operator Organization Name: FLAT CREEK RESOURCES LLC

Operator Address: 777 Main Street, Suite 3600 **Zip:** 76102

Operator PO Box:

Operator City: Fort Worth **State:** TX

Operator Phone: (817)310-8570

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NEW **Master Development Plan name:** Phantom Bank Pad 1

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

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

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** GATUNA CANYON; BONE SPRING **Pool Name:** BONE SPRING

Is the proposed well in an area containing other mineral resources? NONE

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

Is the proposed well in an area containing other mineral resources? NONE

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** PHANTOM BANK PAD **Number:** 1

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 38 Miles **Distance to nearest well:** 4700 FT **Distance to lease line:** 300 FT

Reservoir well spacing assigned acres Measurement: 264.48 Acres

Well plat: PHANTOM_BANK_31_502H_C_102_Signed_20191203085332.pdf

Well work start Date: 08/01/2019 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD27 **Vertical Datum:** NAVD88

Survey number: 2199965 **Reference Datum:**

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	650	FNL	300	FWL	26S	31E	32	Lot D	32.004257	-103.807475	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	3127	14770	9334	
KOP Leg #1	650	FNL	300	FWL	26S	31E	32	Lot D	32.004257	-103.807475	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-5713	8840	8840	
PPP Leg #1-1	698	FNL	100	FEL	26S	31E	31	Lot L1	32.004248	-103.808765	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138868	-6146	9300	9273	

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
EXIT Leg #1	698	FNL	100	FWL	26S	31E	31	Lot L1	32.004115	-103.825325	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138868	-6207	14770	9334	
BHL Leg #1	698	FNL	30	FWL	26S	31E	31	Lot L1	32.004113	-103.826026	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138868	-6207	14840	9334	

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

Drilling Plan Data Report

01/28/2020

APD ID: 10400039940 **Submission Date:** 04/01/2019

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
418394	---	3159	0	0	ALLUVIUM, SANDSTONE	NONE, OIL	N
600202	RUSTLER ANHYDRITE	2357	802	802	ANHYDRITE	NONE	N
600203	TOP SALT	1580	1579	1579	SALT	NONE	N
600204	BASE OF SALT	-398	3557	3557	ANHYDRITE	NONE	N
600205	LAMAR	-615	3774	3774	LIMESTONE, SHALE	NATURAL GAS, OIL	N
600206	BELL CANYON	-653	3812	3812	SANDSTONE, SHALE	NATURAL GAS, OIL	N
600222	CHERRY CANYON	-1561	4720	4720	SANDSTONE, SHALE	NATURAL GAS, OIL	N
600223	BRUSHY CANYON	-2862	6021	6021	SANDSTONE, SHALE	NATURAL GAS, OIL	N
600224	BONE SPRING LIME	-4546	7705	7705	LIMESTONE	NATURAL GAS, OIL	N
600225	BONE SPRING 1ST	-5472	8631	8631	SANDSTONE	NATURAL GAS, OIL	N
600226	BONE SPRING 2ND	-5761	8920	8920	SHALE	NATURAL GAS, OIL	N
600227	BONE SPRING 2ND	-6114	9273	9300	SANDSTONE	NATURAL GAS, OIL	Y
600228	BONE SPRING 2ND	-6196	9355	14816	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

Pressure Rating (PSI): 10M **Rating Depth:** 20000

Equipment: 5M Choke Manifold Equipment, kill line, annular 10M Pipe rams and blind rams Rotating head

Requesting Variance? YES

Variance request: Variance is requested to use a co-flex line between the BOP and choke manifold instead of using a 4" O.D. steel line. Choke and kill line data book is attached.

Testing Procedure: All testing will be done in accordance with Onshore Order 2 III.B.1.h. 1. Use water to test BOP's. 2. Make up testing assembly and set in into a wellhead profile. Ensure that the casing valve must be left opened and there must be personnel monitoring the outlet of casing valve all time while testing. You must ensure that personnel who monitor the outlet must stay for from the BOP while it is being tested. The reason behind this step is to prevent pressure build up in the casing if the test plug is leaking. 3. Circulate through choke/kill lines, choke manifold, standpipe manifold, and valves to ensure that all lines are full with water. This practice is for preventing pressure dropping off while testing. 4. Line up cement unit and rig team shut rams and valves as per each rig specific testing sequence 5. Pressure test must be low and high, respectively, and the pressure should be stabilized with minimum bleed off at least 5 minutes. Ensure that pressure recording on a chart is recorded correctly. 6. Ensure that any equipment does not pass a pressure test requirement must be reported to supervisors. 7. Continue pressure testing until all equipment is tested as per each rig specific. 8. Rig down testing assembly.

Choke Diagram Attachment:

Choke_Diagram_20191203092716.pdf

Choke_Hose_Certification_20191203092716.pdf

BOP Diagram Attachment:

13_10M_Cameron_Full_Stack_20191203092744.PDF

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1150	0	1150	3127	1977	1150	J-55	54.5	ST&C	2.1	7.1	DRY	13.6	DRY	14.5
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5400	0	5400	3127	-2273	5400	N-80	43.5	BUTT	1.5	3.5	DRY	4.2	DRY	4.3
3	PRODUCTION	8.75	5.5	NEW	API	N	0	14470	0	9334	3127	-6207	14470	P-110	23	BUTT	12.7	6.2	DRY	2.1	DRY	2.1

Casing Attachments

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

502H_Casing_design_20190319102439.xlsx

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

502H_Casing_design_20190319102911.xlsx

Casing ID: 3 **String Type:**PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

502H_Casing_design_20190319103032.xlsx

Section 4 - Cement

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1150	585	1.89	12.9	197	125	Extended	Kol-Seal (LCM), Poly-E-Flake (LCM)
SURFACE	Tail		0	1150	490	1.33	14.8	47	125	C	Kol-Seal (LCM), Poly-E-Flake (LCM)
INTERMEDIATE	Lead		0	5400	1345	1.75	13.5	419	100	Extended	Kol-Seal (LCM), Poly-E-Flake (LCM), HR-800 (Retarder)
INTERMEDIATE	Tail		0	5400	565	1.35	14.8	135	100	C	Kol-Seal (LCM), Poly-E-Flake (LCM), HR-800 (Retarder)
PRODUCTION	Lead		0	14770	830	2.13	11.8	314	35	Portland	Kol-Seal (LCM), Poly-E-Flake (LCM), WellLife 1094 (Polymer fiber)
PRODUCTION	Tail		0	14770	1365	1.44	13.2	349	35	14770	Kol-Seal (LCM), Poly-E-Flake (LCM), WellLife 1094 (Polymer fiber)

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: 10k BOPE, with pipe rams, blind rams, variable pipe rams, and 5k annular

Describe the mud monitoring system utilized: Pason PVT

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
5400	14770	OTHER : Cut Brine	8.6	9	67.3		9		180000	12	

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

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
1150	5400	SALT SATURATED	9	9.4	67.3		9		180000	15	
0	1150	SALT SATURATED	9.8	10.1	74.8		9		186000	30	

Section 6 - Test, Logging, Coring

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

Gamma Ray Log, Resistivity Log

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

CALIPER,CBL,DS,GR,MWD,MUDLOG,MICROLO

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4236 **Anticipated Surface Pressure:** 2182.52

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_pad_layout_20191203093948.docx

H2S_Plan_20191203093949.docx

Phantom_1mi_2mi_Buffers_20191203093950.pdf

Operator Name: FLAT CREEK RESOURCES LLC

Well Name: PHANTOM BANK 31 FED COM **Well Number:** 502H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

PRE_STAKE_DETAIL_20190320195123.pdf

502H_Directional_20191203094700.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Cactus_Wellhead_Equipment_20190924121633.pdf

Other Variance attachment:

Phantom Bank 31 Fed Com
Well: 502H
Casing Design Data

	Surface
Top Setting Depth MD	0
Top Setting Depth TVD	0
Top Setting Depth MSL	3127
Bottom Setting Depth MD	1150
Bottom Setting Depth TVD	1150
Bottom Setting Depth MSL	1977
Calculated Casing Length MD	1150
Size	13.375
Grade	J-55
Weight	54.5
Joint	STC
Condition (new or used)	New
Standard (API, Non-API)	API
Tapered (Yes, No)	No
Collapse Design Safety Factor	2.1
Burst Design Safety Factor	7.1
Body Tensile Design Safety Factor type (Dry or Buoyant)	Dry
Body Tensile Design Safety Factor type	14.5
Joint Tensile Design Safety Factor type (Dry or Buoyant)	Dry
Joint Tensile Design Safety Factor type	13.6

Intermediate 1	Intermediate 2 or Liner	Production or Liner
0		0
0		0
3127		3127
5400		14770
5400		9334
-2273		-6207
5400		14770
9.625		5.5
N-80		P-110
43.5		23
Butt		Butt
New		New
API		API
No		No
1.5		12.7
3.5		6.2
Dry		Dry
4.3		2.1
Dry		Dry
4.2		2.1

Phantom Bank 31 Fed Com
Well: 502H
Casing Design Data

	Surface
Top Setting Depth MD	0
Top Setting Depth TVD	0
Top Setting Depth MSL	3127
Bottom Setting Depth MD	1150
Bottom Setting Depth TVD	1150
Bottom Setting Depth MSL	1977
Calculated Casing Length MD	1150
Size	13.375
Grade	J-55
Weight	54.5
Joint	STC
Condition (new or used)	New
Standard (API, Non-API)	API
Tapered (Yes, No)	No
Collapse Design Safety Factor	2.1
Burst Design Safety Factor	7.1
Body Tensile Design Safety Factor type (Dry or Buoyant)	Dry
Body Tensile Design Safety Factor type	14.5
Joint Tensile Design Safety Factor type (Dry or Buoyant)	Dry
Joint Tensile Design Safety Factor type	13.6

Intermediate 1	Intermediate 2 or Liner	Production or Liner
0		0
0		0
3127		3127
5400		14770
5400		9334
-2273		-6207
5400		14770
9.625		5.5
N-80		P-110
43.5		23
Butt		Butt
New		New
API		API
No		No
1.5		12.7
3.5		6.2
Dry		Dry
4.3		2.1
Dry		Dry
4.2		2.1

Phantom Bank 31 Fed Com
Well: 502H
Casing Design Data

	Surface
Top Setting Depth MD	0
Top Setting Depth TVD	0
Top Setting Depth MSL	3127
Bottom Setting Depth MD	1150
Bottom Setting Depth TVD	1150
Bottom Setting Depth MSL	1977
Calculated Casing Length MD	1150
Size	13.375
Grade	J-55
Weight	54.5
Joint	STC
Condition (new or used)	New
Standard (API, Non-API)	API
Tapered (Yes, No)	No
Collapse Design Safety Factor	2.1
Burst Design Safety Factor	7.1
Body Tensile Design Safety Factor type (Dry or Buoyant)	Dry
Body Tensile Design Safety Factor type	14.5
Joint Tensile Design Safety Factor type (Dry or Buoyant)	Dry
Joint Tensile Design Safety Factor type	13.6

Intermediate 1	Intermediate 2 or Liner	Production or Liner
0		0
0		0
3127		3127
5400		14770
5400		9334
-2273		-6207
5400		14770
9.625		5.5
N-80		P-110
43.5		23
Butt		Butt
New		New
API		API
No		No
1.5		12.7
3.5		6.2
Dry		Dry
4.3		2.1
Dry		Dry
4.2		2.1

Hydrogen Sulfide Drilling

Operations Plan

Flat Creek Resources

1 H2S safety instructions to the following:

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

2 H2S Detection and Alarm Systems:

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

3 Windsocks and / Wind Streamers:

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

4 Condition Flags and Signs:

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

5 Well Control Equipment:

- See Drilling Operations Plan Schematics

6 Communication:

- While working under masks chalkboards will be used for communications

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

7 Drilling Stem Testing:

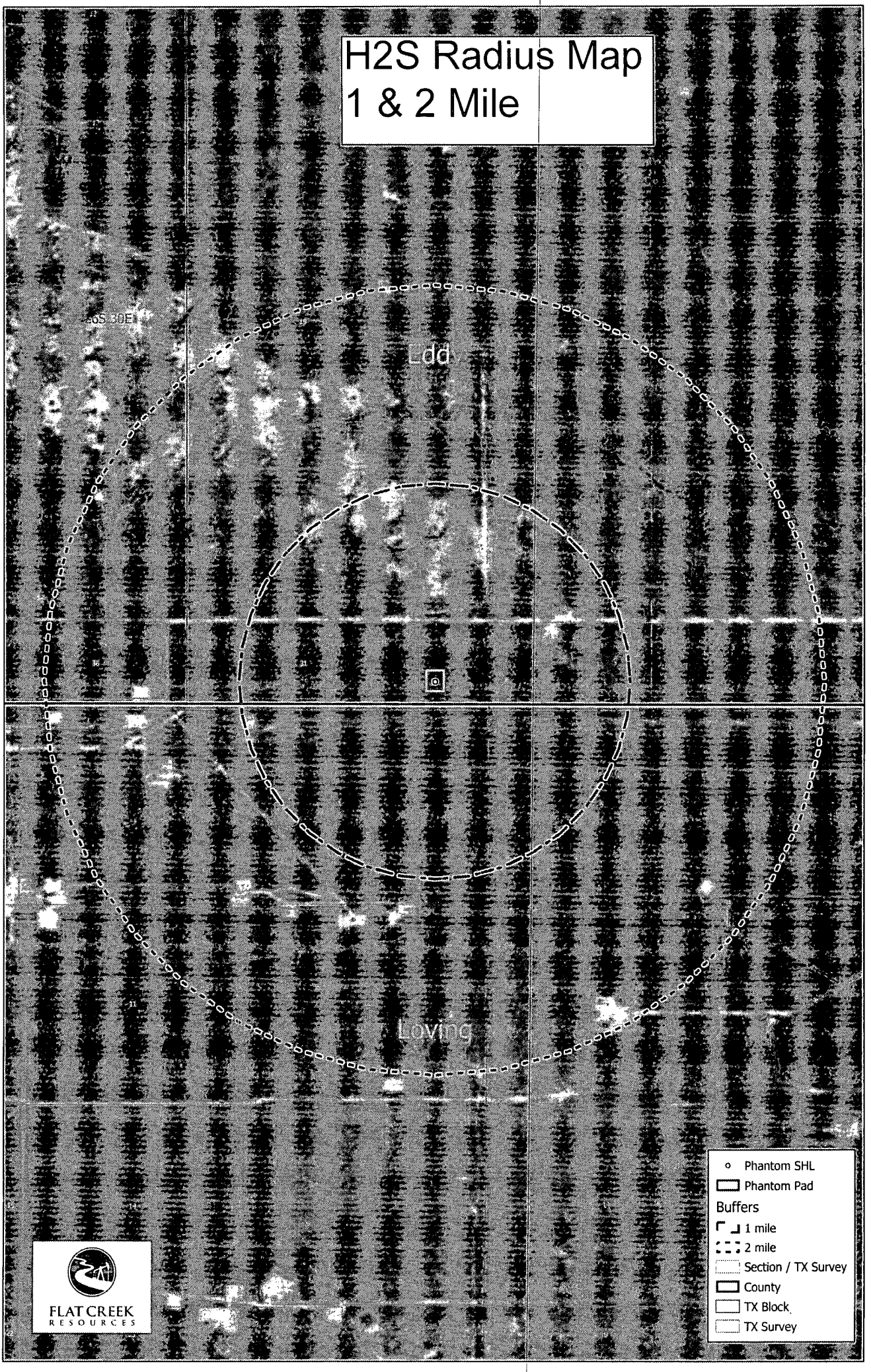
- No DST cores are planned at this time

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

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

11 Emergency Contacts

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


H2S Radius Map
1 & 2 Mile
30S 30E
Ldd
Loving
Phantom SHL
Phantom Pad
Buffers
1 mile
2 mile
Section / TX Survey
County
TX Block
TX Survey
FLAT CREEK
RESOURCES

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Flat Creek Resources LLC**
LEASE NO.:	**NMNM138868**
WELL NAME & NO.:	Phantom Bank 31 Fed Com 502H
SURFACE HOLE FOOTAGE:	650'/N & 300'/W
BOTTOM HOLE FOOTAGE	598'/N & 30'/W
LOCATION:	Section 32, T.26 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	○ Multibowl	◉ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **675 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **3825 feet** is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

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 **2000 (2M)** psi.

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

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the

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

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 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 Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity 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 intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

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

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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