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.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-039-31414

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

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

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

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

1. Well plat certified by a registered surveyor.
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

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 10/06/2021

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 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, N.M. 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	2 Pool Code	3 Pool Name
30-039-31414	71629	BASIN FRUITLAND COAL

4 Property Code	5 Property Name	6 Well Number
331864	CARSON 32-4-7	1H

7 OGRID No.	8 Operator Name	9 Elevation
4838	COLEMAN OIL & GAS, INC.	7433

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
D	18	32 N	4 W	LOT 1	589	NORTH	176	WEST	RIO ARRIBA

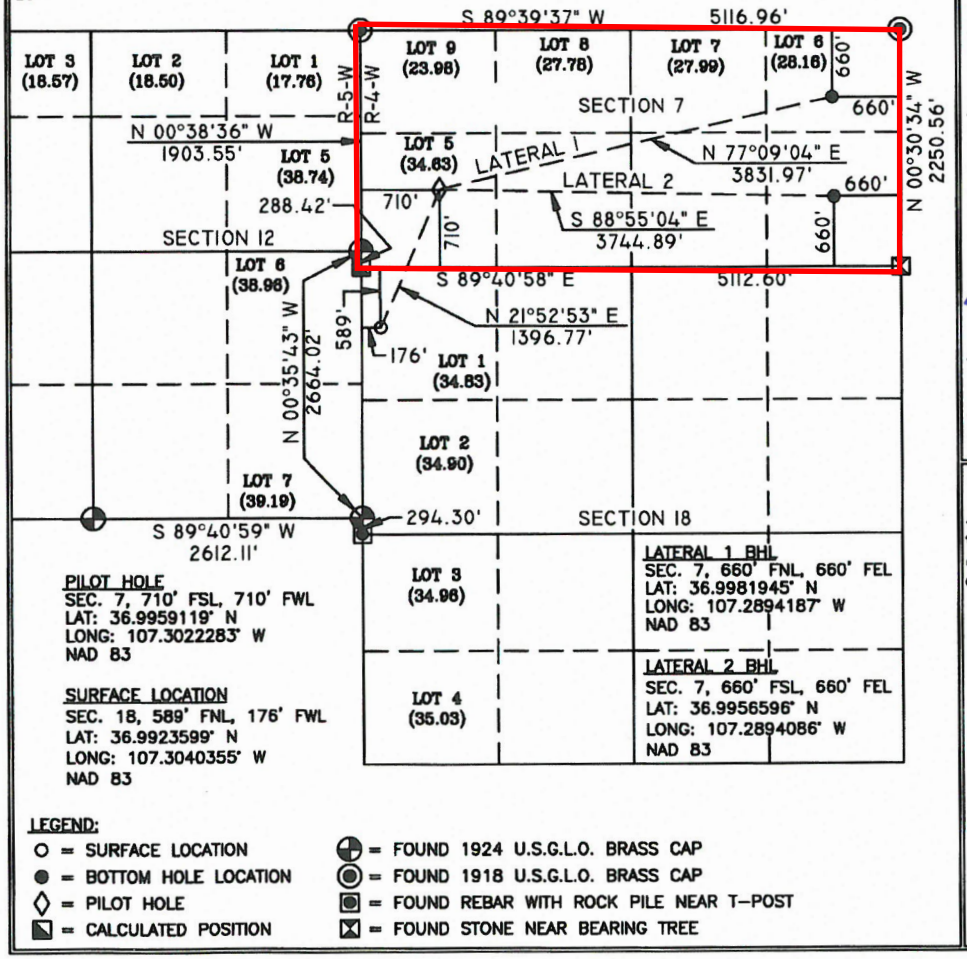
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	7	32 N	4 W	LOT 5	710	SOUTH	710	WEST	RIO ARRIBA
I	7	32 N	4 W	LOT 6	660	NORTH	660	EAST	RIO ARRIBA
P	7	32 N	4 W		660	SOUTH	660	EAST	RIO ARRIBA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
262.54			

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

16



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.

Signature Date: 4/8/21

Printed Name: Michael T. Hanson

E-mail Address: mhansone cog-fmn.com

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.

Date of Survey: 04/15/15

Plat Revised: 4/2/21

Signature and Seal of Professional Surveyor:

MARSHALL W. LINDEEN
NEW MEXICO
17078
4-8-21
PROFESSIONAL SURVEYOR

Certificate Number: 17078

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: _Coleman Oil and Gas, Inc. **OGRID:** 4838 **Date:** 10/12/2021

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
Carson 32-4-7 1H	Pending	D 18 32N R4W Lot 5	SHL 589' FNL 176' FWL	0 BBL/D	2000	150

IV. Central Delivery Point Name: MorningStar Operating, LLC Carracas CDP Meter ID 6009A [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
Carson 32-4-7 1H	Pending	Early 2022	RT 15-20 Days	RDRT	RDCT	RDFB Equip
		04/01/2022	04/20/2022	04/25/2022	05/05/2022	05/15/2022

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. Coleman plans to have natural gas produced water pipeline/gathering system in place prior to initial production. This should minimize lost gas by venting/flaring.

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: Michael Hanson
Printed Name: Michael Hanson
Title: Operations Engineer
E-mail Address:mhanson@cog-fmn.com
Date: 10/12/2021
Phone: (505) 327-0356

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

Attachments:

Separation Equipment: Below is a complete description of how Operator will size separation equipment to optimize gas capture.

Description of how separation equipment will be sized to optimize gas capture:
Well separation equipment is sized to have appropriate residence time and vapor pace to remove gas particles on the micron scale per typical engineering calculations and/or operational experience.. All gas is routed to end uses or the sales pipeline under normal operating conditions.

Operational & Best Management Practices: Below is a complete description of the actions the Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. Additionally, below is a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Drilling Operations:
Coleman Oil and Gas will minimize venting by:

- Gas will only be vented to the atmosphere to avoid risk of immediate substantial adverse impact to employee safety, public health and the environment.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location.

Completion Operations:
Coleman Oil and Gas will minimize venting by:

- Separator operations will commence as soon as technically feasible.
- Gas will route immediately to a collection system applied to other beneficial use, such as a fuel source for onsite equipment.
- During initial flowback and if technically feasible, flaring shall occur rather than venting.
- If natural gas does not meet pipeline standards, gas will be vented or flared. A gas analysis will be performed twice weekly until standards are met (for up to 60 days). This is not anticipated to occur.
- If required, all venting and flaring of natural gas during flowback operations shall be performed in compliance with Subsections B, C and D of 19.15.27.8 NMAC.

Production Operations:

Coleman Oil and Gas will minimize venting by:

- Shutting in the wells if the pipeline is not available. No flaring of high pressure gas will occur.
- Utilizing gas for equipment fuel, heater fuel, and artificial lift when allowable.
- Capturing low pressure gas via a gas capture system when allowable.
-

In General:

- All venting and flaring from drilling, flowback and operation phases shall be reported in compliance with Subsection G of 19.15.27.8 NMAC.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hold location and 100 feet from the permanent facility storage tanks.

Flowback Strategy:

After the fracture treatment/completion operations, well(s) will be produced to temporary tanks and gas will be flared or vented. During flowback, the fluids and solid content will be monitored. When the produced fluids contain minimal solids, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless, there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that solids and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring:

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - ♦ Only a portion of gas is consumed operating generator remainder of gas will be flared
- Compressed Natural Gas – On lease, No initial plans to compress gas on lease, however it may be necessary later in life of well.
  - ♦ Gas flared would be minimal, but might be uneconomical to operate when gas volume declines.
- NGL Removal – On lease
  - ♦ Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines.
- Power generation for grid; Not Planned.

- Liquids removal on lease; Produced Water will be removed and transferred VIA truck or gathering system to produced water disposal.
- Reinjection for underground storage; Not Planned.
- Reinjection for temporary storage; Not Planned at this time.
- Reinjection for enhanced recovery; Not Planned at this time.
- Fuel cell production; and
- Other alternative beneficial uses approved by the division. Not Planned at this time.

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

Drilling Plan Data Report
10/15/2021

APD ID: 10400073456 **Submission Date:** 04/22/2021

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

Well Type: CONVENTIONAL GAS 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
3788288	SAN JOSE	7433	0	0	OTHER : Unconsolidated Gravels	USEABLE WATER	N
3788291	NACIMIENTO	5183	2250	2374	SANDSTONE, SHALE, SILTSTONE	USEABLE WATER	N
3788292	OJO ALAMO	3983	3450	3679	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, USEABLE WATER	N
3788293	KIRTLAND	3840	3593	3835	OTHER, SANDSTONE : Claystone	OTHER, USEABLE WATER : Clay	N
3788294	FRUITLAND	3378	4055	4332	COAL, MUDSTONE, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, USEABLE WATER	N
3788295	FRUITLAND COAL	3243	4190	4450	COAL	NATURAL GAS, USEABLE WATER	Y
3788296	UNKNOWN	3178	4255	4537	OTHER : Bottom Coal	NATURAL GAS, USEABLE WATER	N
3788297	PICTURED CLIFFS	3170	4263	4545	SANDSTONE	NATURAL GAS, USEABLE WATER	N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M **Rating Depth:** 10000

Equipment: BOP equipment and accessories will meet or exceed BLM requirements outlined in 43 CFR Part 3160. The working pressure of all BOPE shall exceed the anticipated surface pressure to which it may be subjected, assuming a partially evacuated hole with a pressure gradient of 0.22 psi/ft. Expected Maximum Bottom Hole pressure = 0.433 psi/ft. x 4438' = 1921 psi, which is less than 2,000 psi working pressure. Maximum anticipated surface pressure will be 1921 psi (4438' x .22 psi/ft) = 945 psi. Therefore, a 2000 psi Class 2 BOPE system is required that consists of the following: 2 preventers with either double ram (blind and pipe) or annular preventer and blind rams. Kill line (2 minimum) 1 Kill line valve (2 minimum) 1 choke line valve 2 chokes (refer to diagram in Attachment 1) Upper Kelly cock valve with handle available Safety valve and subs to fit all drill strings in use Pressure gauge on choke manifold 2 minimum choke manifold Fill-up line above the uppermost preventer See attached diagram for the proposed BOP systems. Stack #1 will be nippled-up on the 11" 3,000 psi top flange of the wellhead A section for the pilot hole and the dual lateral re-entry. The BOP will be hydraulically operated.

Requesting Variance? NO

Variance request:

Testing Procedure: All ram preventers and related equipment will be tested to 2,000 psi for 10 minutes. Annular preventers will be tested to 70% of rated working pressure for 10 minutes. Surface casing will be tested to 1500 psi. All preventers and surface casing will be tested before drilling out of surface casing. BOP equipment will be tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs and at least once every 30 days. Annular

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

preventers will be functionally operated at least once per week. Rams preventers will be activated each trip, not to exceed once per day

Choke Diagram Attachment:

Carson7_Choke_manifold_diagram_20210422070553.pdf

BOP Diagram Attachment:

Carson7_BOP_stack_20210422070604.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	12.25	9.625	NEW	API	N	0	300	0	300	0	-300	300	J-55	36	LT&C	1	1.1	DRY	1.4	DRY	1.4
2	PRODUCTION	8.75	7.0	NEW	API	N	0	4720	0	4720	0	-4720	4720	J-55	26	LT&C	1	1.1	DRY	1.4	DRY	1.4
3	OTHER	6.125	4.5	NEW	API	N	4168	8190	3914	4237	-3914	-4237	4022	J-55	11.6	LT&C	1	1.1	DRY	1.4	DRY	1.4
4	OTHER	6.125	4.5	NEW	API	N	4198	8447	3942	4263	-3942	-4263	4249	J-55	11.6	LT&C	1	1.1	DRY	1.4	DRY	1.4

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Carson7_Casing_Design_Assumption_20210422070833.pdf

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

Casing Attachments

Casing ID: 2 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Carson7_Casing_Design_Assumption_20210422070935.pdf

Casing ID: 3 **String Type:** OTHER - Lateral 2 Liner

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Carson7_Casing_Design_Assumption_20210422071251.pdf

Casing ID: 4 **String Type:** OTHER - Lateral 1 Liner

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Carson7_Casing_Design_Assumption_20210422071447.pdf

Section 4 - Cement

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	0	0	0	0	0	0	None	None
SURFACE	Tail		0	300	177	1.17	15.8	208	100	Premium	Calcium Chloride - 2% Poly-E-Flake – Lost Circulation Control Agent – 0.125 lbs/sx
PRODUCTION	Lead		0	3300	270	2.4	12.3	648	30	VARICEM	FE-2 – Controls Gel Thickening – 0.30% Kol-Seal – Lost Circulation Control Agent – 5 lbs/sx Poly-E-Flake – Lost Circulation Control Agent – 0.125 lbs/sx
PRODUCTION	Tail		3300	4720	150	1.84	13.5	276	30	VARICEM	Super CBL - Gas Block Additive - 0.30% FE-2 – Controls Gel Thickening – 0.30% Kol-Seal – Lost Circulation Control Agent – 5 lbs/sx Poly-E-Flake – Lost Circulation Control Agent – 0.125 lbs/sx

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: A trip tank equipped with a PVT sensor will be used to monitor trip volumes. Possible lost circulation in the Fruitland Coal and Pictured Cliffs Sand. Lost circulation has been successfully mitigated with lost circulation materials. There will not be a reserve pit for this well. A closed-loop system will be used to recover drilling fluid and dry cuttings during both the pilot hole and laterals hole sections of the well. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. Frac tanks will be on location to store fresh water, produced water, drilling mud and brine.
Describe the mud monitoring system utilized: Pit Volume Totalizer (PVT) equipment (or equivalent) will be on each pit to monitor pit levels.

Circulating Medium Table

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

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 gel	8.4	9							
300	4720	LSND/GEL	8.4	9							
4198	8190	OTHER : Brine	8.6	9.8							
4168	8447	OTHER : Brine	8.6	9.8							

Section 6 - Test, Logging, Coring

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

Open Hole Logging: LWD gamma ray for all lateral hole sections (from casing exit to TD).
Mud Logging: All lateral hole sections. Samples taken every 90'.

Cased Hole Logging: If cement is not brought to surface on the surface casing string, then a cement bond log (CBL) will be run to determine the quality of the job prior to drilling ahead. A Cement Bond Log (CBL) will be run after the drilling of the well has been completed and as the start of the completion process. The CBL will confirm the quality of the cement bond and the actual TOC. Gamma ray and density logs may be obtained with the CBL to describe the stratigraphy of the wellbore

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

GAMMA RAY LOG,CEMENT BOND LOG,

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 1921 **Anticipated Surface Pressure:** 983

Anticipated Bottom Hole Temperature(F): 140

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? NO

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

Hydrogen sulfide drilling operations plan:

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Carson7_Lateral1_Horizontal_Plan_20210422072948.pdf

Carson7_Lateral2_Horizontal_Plan_20210422073002.pdf

Other proposed operations facets description:

Timing:
The operation is expected to start August 2021. The pilot hole drilling operations will last approximately 7 days. After the pilot hole has been perforated and acid stimulated the drilling rig will re-enter the 7" production casing, set whipstock(s), sidetrack and drill the 6-1/8" lateral hole sections. The pilot hole and laterals may be drilled in one drilling rig event. Upon completion of the drilling and completion events, the completion rig will be on location approximately two to three weeks to run tubing and set artificial lift.

Directional Plans:
Pilot hole, Lateral #1, Lateral #2 directional plans and proposed wellbore schematic attached.

Completion:
The vertical pilot hole well will be perforated, and acid stimulated to the economic coal seams, identified by cased hole logs, within the Fruitland coal interval estimated from 4450-4480 MD. It will be cased and cementing with 7" production casing and stimulated with a small volume of acid to ensure perforations are open. The laterals will be cased with 4-1/2" pre-perforated un-cemented tubing to maintain hole stability for natural open hole completion.

Horizontal Re-entry Procedure:
Drill vertical pilot hole.
Completed with 7" production casing and cement to surface.
Pilot hole will be perforated and may be stimulated with a light acid treatment in the Fruitland Coal.
Run gyro survey, orient and set whipstock for casing exit #1 @ +/-4177 MD
Mill window and TOOH for curve BHA.
Planned KOP #1 @ 4198 MD / 3942 TVD.
Drill 6-1/8" curve from 4198 MD / 3942 TVD to landing point @ 4913 MD / 4322 TVD at 87.07o.
TOOH and PU lateral BHA.
Drill from 4913 MD / 4322 TVD to 8447 MD / 4263 TVD.
TOOH and run 4-1/2" pre-perforated liner from 4203 MD to TD @ 8442 MD.
Run gyro survey, orient and set whipstock for casing exit #2 @ +/-4147 MD
Mill window and TOOH for curve BHA.
Planned KOP #2 @ 4168 MD / 3914 TVD.
Drill 6-1/8 curve from 4168 MD / 3914 TVD to landing point @ 4821 MD / 3612 TVD at 94.88o.
TOOH and PU lateral BHA.
Drill from 4821 MD / 4269 TVD to 8190 MD / 4237 TVD.
TOOH and run 4-1/2" pre-perforated liner from 4173 MD to TD @ 8185 MD.
TIH and Set Retrievable Kill Plug.
Test Plug.
Secure well, rig down and move off location.

NOTE: Depths and directional plans are based on estimated formation tops. Corrections for KOP and landing points will be made based on actual formation tops from logs and BHA selection.

Other proposed operations facets attachment:

Carson7_Lateral1_Anticollision_Report_20210422073102.pdf

Operator Name: COLEMAN OIL & GAS INCORPORATED

Well Name: CARSON 32-4-7 **Well Number:** 1H

Carson7_Lateral2_Anticollision_Report_20210422073114.pdf
Carson7_Drill_Plan_20210422073151.pdf
Carson7_Wellhead_Diagram_20210422073219.pdf
Carson7_Additional_Attachment_20210422083610.pdf

Other Variance attachment:

Company: Coleman Oil & Gas Inc.
Project: Rio Arriba County, NMW NAD83
Site: Carson 32-4-7 Pad
Well: Carson 32-4-7
Wellbore: Lateral 1
Design: Plan #2

PROJECT DETAILS: Rio Arriba County, NMW NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True

LONESTAR CONSULTING

WELL DETAILS: Carson 32-4-7

GL 7433' & RKB 15' @ 7448.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	2180980.97	2877667.01	36.9923599	-107.3040355

Plan: Plan #2 (Carson 32-4-7/Lateral 1)

Created By: Janie Collins Date: 15:12, November 17 2021

Azimuths to True North
Magnetic North: 8.68°
Magnetic Field
Strength: 49767.9nT
Dip Angle: 63.44°
Date: 1/26/2021
Model: HDGM2021_FILE

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Carson 32-4-7 Lat 1 BHL Rev 1	4248.00	2124.59	4268.45	2183129.24	2881923.58	36.9981945	-107.2894187

SECTION DETAILS

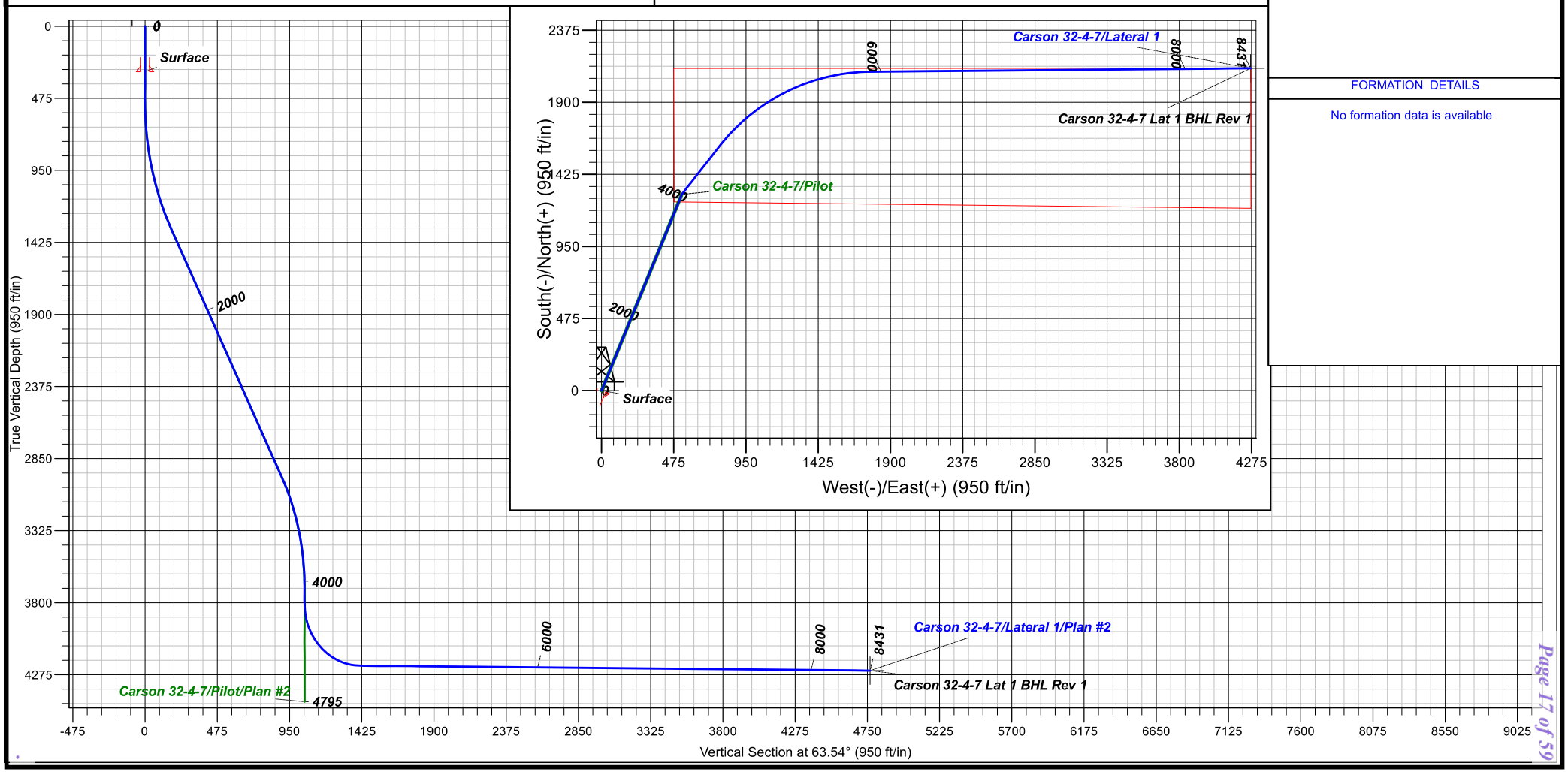
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
4148.00	0.00	0.00	3805.79	1293.21	527.76	0.00	0.00	1048.72
4787.21	89.49	38.00	4215.03	1612.84	777.48	14.00	38.00	1414.70
5931.27	89.49	89.48	4225.92	2102.10	1769.26	4.50	90.24	2520.59
8430.65	89.49	89.48	4248.00	2124.59	4268.45	0.00	0.00	4767.97

CASING DETAILS

TVD	MD	Name

FORMATION DETAILS

No formation data is available



Coleman Oil & Gas Inc.

Rio Arriba County, NMW NAD83
Carson 32-4-7 Pad
Carson 32-4-7

Lateral 1

Plan: Plan #2

Standard Planning Report

17 November, 2021

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #2		

Project Rio Arriba County, NMW NAD83

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site Carson 32-4-7 Pad

Site Position:		**Northing:**	2,180,980.97 usft	**Latitude:**	36.9923599
From:	Lat/Long	**Easting:**	2,877,667.01 usft	**Longitude:**	-107.3040355
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.32 °

Well Carson 32-4-7

Well Position	**+N/-S**	0.00 ft	**Northing:**	2,180,980.97 usft	**Latitude:**	36.9923599
	+E/-W	0.00 ft	**Easting:**	2,877,667.01 usft	**Longitude:**	-107.3040355
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	7,433.00 ft

Wellbore Lateral 1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021_FILE	1/26/2021	8.68	63.47	49,767.50000000

Design Plan #2

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	4,148.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	63.54

Plan Survey Tool Program **Date** 11/17/2021

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	4,148.00	8,430.65	Plan #2 (Lateral 1)	MWD+HDGM	
				OWSG MWD + HDGM	

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
4,148.00	0.00	0.00	3,805.79	1,293.21	527.76	0.00	0.00	0.00	0.00	
4,787.21	89.49	38.00	4,215.03	1,612.84	777.48	14.00	14.00	0.00	38.00	
5,931.27	89.49	89.48	4,225.92	2,102.10	1,769.26	4.50	0.00	4.50	90.24	
8,430.65	89.49	89.48	4,248.00	2,124.59	4,268.45	0.00	0.00	0.00	0.00	Carson 32-4-7 Lat 1 E

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #2		

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)
4,148.00	0.00	0.00	3,805.79	1,293.21	527.76	1,048.72	0.00	0.00	0.00
4,200.01	7.28	38.00	3,857.66	1,295.81	529.79	1,051.69	14.00	14.00	0.00
4,300.01	21.28	38.00	3,954.33	1,315.20	544.94	1,073.90	14.00	14.00	0.00
4,400.01	35.28	38.00	4,042.18	1,352.44	574.04	1,116.54	14.00	14.00	0.00
4,500.01	49.28	38.00	4,115.98	1,405.33	615.36	1,177.10	14.00	14.00	0.00
4,600.01	63.28	38.00	4,171.35	1,470.71	666.44	1,251.96	14.00	14.00	0.00
4,700.01	77.28	38.00	4,205.01	1,544.71	724.25	1,336.69	14.00	14.00	0.00
4,787.21	89.49	38.00	4,215.03	1,612.84	777.48	1,414.70	14.00	14.00	0.00
4,800.01	89.49	38.58	4,215.15	1,622.88	785.41	1,426.27	4.50	-0.02	4.50
4,900.01	89.47	43.08	4,216.06	1,698.53	850.76	1,518.49	4.50	-0.02	4.50
5,000.01	89.46	47.58	4,216.99	1,768.81	921.86	1,613.45	4.50	-0.01	4.50
5,100.01	89.45	52.08	4,217.95	1,833.30	998.24	1,710.57	4.50	-0.01	4.50
5,200.01	89.44	56.58	4,218.92	1,891.60	1,079.45	1,809.25	4.50	-0.01	4.50
5,300.01	89.44	61.08	4,219.90	1,943.35	1,164.99	1,908.88	4.50	0.00	4.50
5,400.01	89.44	65.58	4,220.89	1,988.23	1,254.32	2,008.85	4.50	0.00	4.50
5,500.01	89.44	70.08	4,221.87	2,025.96	1,346.90	2,108.54	4.50	0.00	4.50
5,600.01	89.45	74.58	4,222.84	2,056.30	1,442.15	2,207.34	4.50	0.01	4.50
5,700.01	89.46	79.08	4,223.80	2,079.09	1,539.49	2,304.63	4.50	0.01	4.50
5,800.01	89.47	83.58	4,224.73	2,094.16	1,638.31	2,399.82	4.50	0.01	4.50
5,900.01	89.49	88.08	4,225.64	2,101.43	1,738.02	2,492.32	4.50	0.02	4.50
5,931.27	89.49	89.48	4,225.92	2,102.10	1,769.26	2,520.59	4.50	0.02	4.50
6,000.01	89.49	89.48	4,226.53	2,102.72	1,838.00	2,582.41	0.00	0.00	0.00
6,100.01	89.49	89.48	4,227.41	2,103.62	1,938.00	2,672.32	0.00	0.00	0.00
6,200.01	89.49	89.48	4,228.29	2,104.52	2,037.99	2,762.24	0.00	0.00	0.00
6,300.01	89.49	89.48	4,229.18	2,105.42	2,137.98	2,852.16	0.00	0.00	0.00
6,400.01	89.49	89.48	4,230.06	2,106.32	2,237.97	2,942.08	0.00	0.00	0.00
6,500.01	89.49	89.48	4,230.95	2,107.21	2,337.97	3,031.99	0.00	0.00	0.00
6,600.01	89.49	89.48	4,231.83	2,108.11	2,437.96	3,121.91	0.00	0.00	0.00
6,700.01	89.49	89.48	4,232.71	2,109.01	2,537.95	3,211.83	0.00	0.00	0.00
6,800.01	89.49	89.48	4,233.60	2,109.91	2,637.94	3,301.75	0.00	0.00	0.00
6,900.01	89.49	89.48	4,234.48	2,110.81	2,737.94	3,391.66	0.00	0.00	0.00
7,000.01	89.49	89.48	4,235.36	2,111.71	2,837.93	3,481.58	0.00	0.00	0.00
7,100.01	89.49	89.48	4,236.25	2,112.61	2,937.92	3,571.50	0.00	0.00	0.00
7,200.01	89.49	89.48	4,237.13	2,113.51	3,037.91	3,661.41	0.00	0.00	0.00
7,300.01	89.49	89.48	4,238.01	2,114.41	3,137.90	3,751.33	0.00	0.00	0.00
7,400.01	89.49	89.48	4,238.90	2,115.31	3,237.90	3,841.25	0.00	0.00	0.00
7,500.02	89.49	89.48	4,239.78	2,116.21	3,337.89	3,931.17	0.00	0.00	0.00
7,600.02	89.49	89.48	4,240.66	2,117.11	3,437.88	4,021.08	0.00	0.00	0.00
7,700.02	89.49	89.48	4,241.55	2,118.01	3,537.87	4,111.00	0.00	0.00	0.00
7,800.02	89.49	89.48	4,242.43	2,118.91	3,637.87	4,200.92	0.00	0.00	0.00
7,900.02	89.49	89.48	4,243.31	2,119.81	3,737.86	4,290.84	0.00	0.00	0.00
8,000.02	89.49	89.48	4,244.20	2,120.71	3,837.85	4,380.75	0.00	0.00	0.00
8,100.02	89.49	89.48	4,245.08	2,121.61	3,937.84	4,470.67	0.00	0.00	0.00
8,200.02	89.49	89.48	4,245.96	2,122.51	4,037.83	4,560.59	0.00	0.00	0.00
8,300.02	89.49	89.48	4,246.85	2,123.41	4,137.83	4,650.51	0.00	0.00	0.00
8,400.02	89.49	89.48	4,247.73	2,124.31	4,237.82	4,740.42	0.00	0.00	0.00
8,430.65	89.49	89.48	4,248.00	2,124.59	4,268.45	4,767.97	0.00	0.00	0.00

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #2		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Carson 32-4-7 Lat 1 BHl - plan hits target center - Point	0.00	0.00	4,248.00	2,124.59	4,268.45	2,183,129.24	2,881,923.58	36.9981945	-107.2894187

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,148.00	3,805.79	1,293.21	527.76	Start Build 14.00
4,787.21	4,215.03	1,612.84	777.48	Start DLS 4.50 TFO 90.24
5,931.27	4,225.92	2,102.10	1,769.26	Start 2499.39 hold at 5931.27 MD
8,430.65	4,248.00	2,124.59	4,268.45	TD at 8430.65

Company: Coleman Oil & Gas Inc.
Project: Rio Arriba County, NMW NAD83
Site: Carson 32-4-7 Pad
Well: Carson 32-4-7
Wellbore: Lateral 2
Design: Plan #2

PROJECT DETAILS: Rio Arriba County, NMW NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True

LONESTAR CONSULTING

WELL DETAILS: Carson 32-4-7

GL 7433' & RKB 15' @ 7448.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	2180980.97	2877667.01	36.9923599	-107.3040355

Plan: Plan #2 (Carson 32-4-7/Lateral 2)

Created By: Janie Collins Date: 15:51, November 17 2021

Azimuths to True North
Magnetic North: 8.68°
Magnetic Field
Strength: 49767.9nT
Dip Angle: 63.42°
Date: 1/26/2021
Model: HDGM2021_FILE

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Carson 32-4-7 Lat 2 BHL Rev 1	4222.00	1201.74	4271.80	2182206.43	2881932.05	36.9956598	-107.2894077

SECTION DETAILS

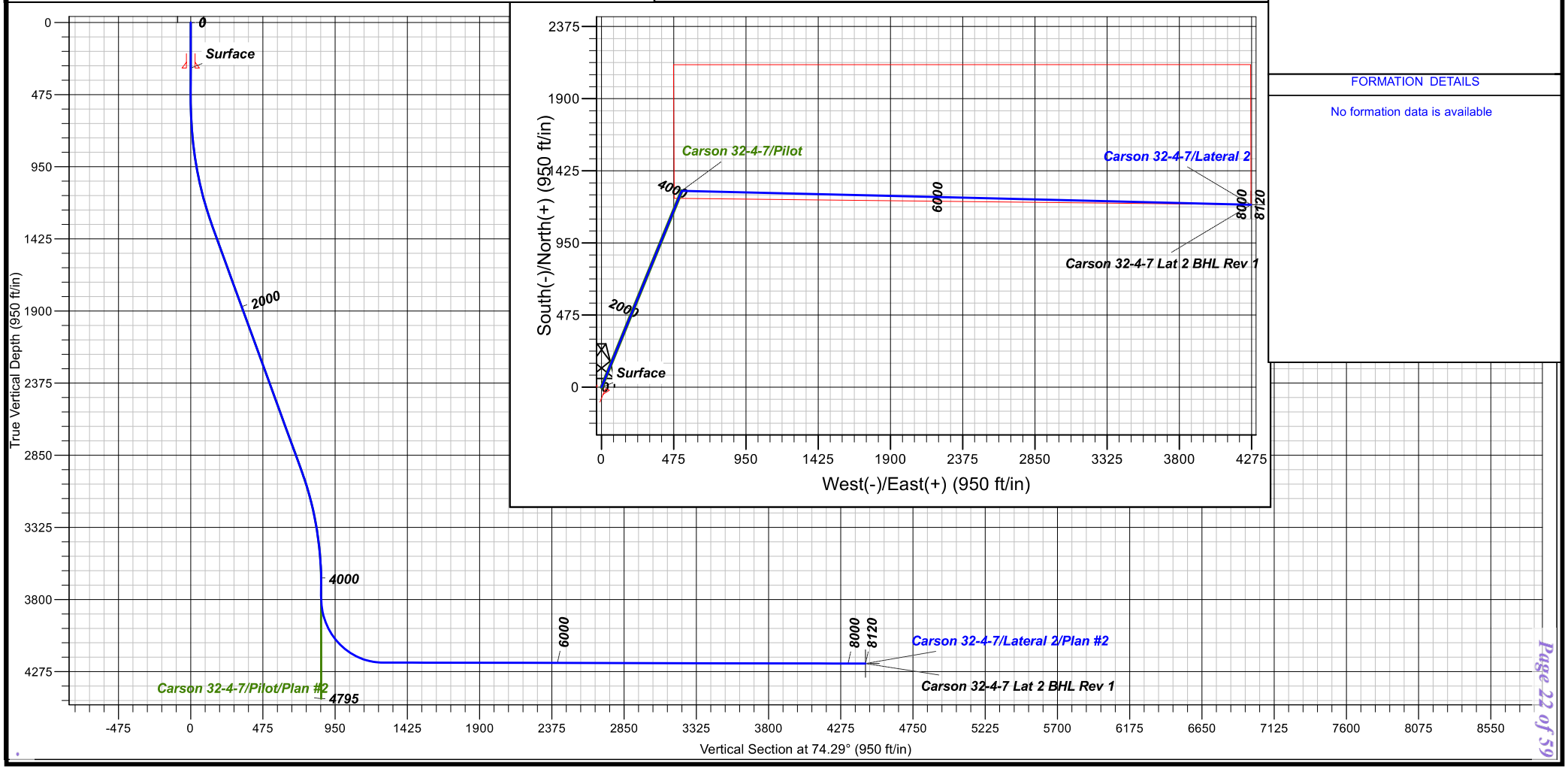
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
4133.00	0.00	0.00	3790.79	1293.21	527.76	0.00	0.00	858.25
4798.78	89.88	91.40	4215.21	1282.86	951.16	13.50	91.40	1263.03
8120.42	89.89	91.40	4222.00	1201.74	4271.80	0.00	-11.22	4437.62

CASING DETAILS

No casing data is available

FORMATION DETAILS

No formation data is available



Coleman Oil & Gas Inc.

Rio Arriba County, NMW NAD83
Carson 32-4-7 Pad
Carson 32-4-7

Lateral 2

Plan: Plan #2

Standard Planning Report

17 November, 2021

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #2		

Project Rio Arriba County, NMW NAD83

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site Carson 32-4-7 Pad

Site Position:		**Northing:**	2,180,980.97 usft	**Latitude:**	36.9923599
From:	Lat/Long	**Easting:**	2,877,667.01 usft	**Longitude:**	-107.3040355
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.32 °

Well Carson 32-4-7

Well Position	**+N/-S**	0.00 ft	**Northing:**	2,180,980.97 usft	**Latitude:**	36.9923599
	+E/-W	0.00 ft	**Easting:**	2,877,667.01 usft	**Longitude:**	-107.3040355
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	7,433.00 ft

Wellbore Lateral 2

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021_FILE	1/26/2021	8.68	63.47	49,767.50000000

Design Plan #2

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	4,133.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	74.29

Plan Survey Tool Program **Date** 11/17/2021

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	4,133.00	8,120.42	Plan #2 (Lateral 2)	MWD+HDGM OWSG MWD + HDGM	

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
4,133.00	0.00	0.00	3,790.79	1,293.21	527.76	0.00	0.00	0.00	0.00	
4,798.78	89.88	91.40	4,215.21	1,282.86	951.16	13.50	13.50	0.00	91.40	
8,120.42	89.89	91.40	4,222.00	1,201.74	4,271.80	0.00	0.00	0.00	-11.22	Carson 32-4-7 Lat 2 E

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #2		

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)
4,133.00	0.00	0.00	3,790.79	1,293.21	527.76	858.25	0.00	0.00	0.00
4,200.01	9.05	91.40	3,857.52	1,293.08	533.04	863.30	13.50	13.50	0.00
4,300.01	22.55	91.40	3,953.53	1,292.42	560.19	889.25	13.50	13.50	0.00
4,400.01	36.05	91.40	4,040.53	1,291.22	608.99	935.91	13.50	13.50	0.00
4,500.01	49.55	91.40	4,113.74	1,289.57	676.75	1,000.69	13.50	13.50	0.00
4,600.01	63.05	91.40	4,169.10	1,287.54	759.73	1,080.02	13.50	13.50	0.00
4,700.01	76.55	91.40	4,203.56	1,285.25	853.33	1,169.50	13.50	13.50	0.00
4,798.78	89.88	91.40	4,215.21	1,282.86	951.16	1,263.03	13.50	13.50	0.00
4,800.01	89.88	91.40	4,215.21	1,282.83	952.39	1,264.20	0.00	0.00	0.00
4,900.01	89.88	91.40	4,215.42	1,280.39	1,052.36	1,359.78	0.00	0.00	0.00
5,000.01	89.88	91.40	4,215.63	1,277.95	1,152.33	1,455.35	0.00	0.00	0.00
5,100.01	89.88	91.40	4,215.84	1,275.50	1,252.30	1,550.92	0.00	0.00	0.00
5,200.01	89.88	91.40	4,216.04	1,273.06	1,352.27	1,646.49	0.00	0.00	0.00
5,300.01	89.88	91.40	4,216.25	1,270.62	1,452.24	1,742.07	0.00	0.00	0.00
5,400.01	89.88	91.40	4,216.46	1,268.17	1,552.21	1,837.64	0.00	0.00	0.00
5,500.01	89.88	91.40	4,216.67	1,265.73	1,652.18	1,933.21	0.00	0.00	0.00
5,600.01	89.88	91.40	4,216.88	1,263.29	1,752.15	2,028.79	0.00	0.00	0.00
5,700.01	89.88	91.40	4,217.08	1,260.85	1,852.12	2,124.36	0.00	0.00	0.00
5,800.01	89.88	91.40	4,217.29	1,258.40	1,952.09	2,219.93	0.00	0.00	0.00
5,900.01	89.88	91.40	4,217.49	1,255.96	2,052.06	2,315.51	0.00	0.00	0.00
6,000.01	89.88	91.40	4,217.70	1,253.52	2,152.03	2,411.08	0.00	0.00	0.00
6,100.01	89.88	91.40	4,217.91	1,251.08	2,252.00	2,506.65	0.00	0.00	0.00
6,200.01	89.88	91.40	4,218.11	1,248.63	2,351.97	2,602.23	0.00	0.00	0.00
6,300.01	89.88	91.40	4,218.32	1,246.19	2,451.94	2,697.80	0.00	0.00	0.00
6,400.01	89.88	91.40	4,218.52	1,243.75	2,551.91	2,793.37	0.00	0.00	0.00
6,500.01	89.88	91.40	4,218.73	1,241.31	2,651.88	2,888.95	0.00	0.00	0.00
6,600.01	89.88	91.40	4,218.93	1,238.86	2,751.85	2,984.52	0.00	0.00	0.00
6,700.01	89.88	91.40	4,219.13	1,236.42	2,851.82	3,080.09	0.00	0.00	0.00
6,800.01	89.88	91.40	4,219.34	1,233.98	2,951.79	3,175.67	0.00	0.00	0.00
6,900.01	89.88	91.40	4,219.54	1,231.54	3,051.76	3,271.24	0.00	0.00	0.00
7,000.01	89.88	91.40	4,219.75	1,229.10	3,151.73	3,366.81	0.00	0.00	0.00
7,100.01	89.88	91.40	4,219.95	1,226.65	3,251.70	3,462.39	0.00	0.00	0.00
7,200.01	89.88	91.40	4,220.15	1,224.21	3,351.67	3,557.96	0.00	0.00	0.00
7,300.01	89.88	91.40	4,220.35	1,221.77	3,451.64	3,653.53	0.00	0.00	0.00
7,400.01	89.88	91.40	4,220.55	1,219.33	3,551.61	3,749.11	0.00	0.00	0.00
7,500.02	89.88	91.40	4,220.76	1,216.89	3,651.58	3,844.68	0.00	0.00	0.00
7,600.02	89.88	91.40	4,220.96	1,214.45	3,751.55	3,940.25	0.00	0.00	0.00
7,700.02	89.88	91.40	4,221.16	1,212.00	3,851.52	4,035.83	0.00	0.00	0.00
7,800.02	89.89	91.40	4,221.36	1,209.56	3,951.49	4,131.40	0.00	0.00	0.00
7,900.02	89.89	91.40	4,221.56	1,207.12	4,051.46	4,226.97	0.00	0.00	0.00
8,000.02	89.89	91.40	4,221.76	1,204.68	4,151.43	4,322.55	0.00	0.00	0.00
8,100.02	89.89	91.40	4,221.96	1,202.24	4,251.40	4,418.12	0.00	0.00	0.00
8,120.42	89.89	91.40	4,222.00	1,201.74	4,271.80	4,437.62	0.00	0.00	0.00

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #2		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Carson 32-4-7 Lat 2 BHl - plan hits target center - Point	0.00	0.00	4,222.00	1,201.74	4,271.80	2,182,206.43	2,881,932.06	36.9956597	-107.2894078

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
300.00	300.00	Surface	9.625	12.250

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,133.00	3,790.79	1,293.21	527.76	Start Build 13.50
4,798.78	4,215.21	1,282.86	951.16	Start DLS 0.00 TFO -11.22
8,120.42	4,222.00	1,201.74	4,271.80	TD at 8120.42

Company: Coleman Oil & Gas Inc.
Project: Rio Arriba County, NMW NAD83
Site: Carson 32-4-7 Pad
Well: Carson 32-4-7
Wellbore: Pilot
Design: Plan #2

LONESTAR CONSULTING

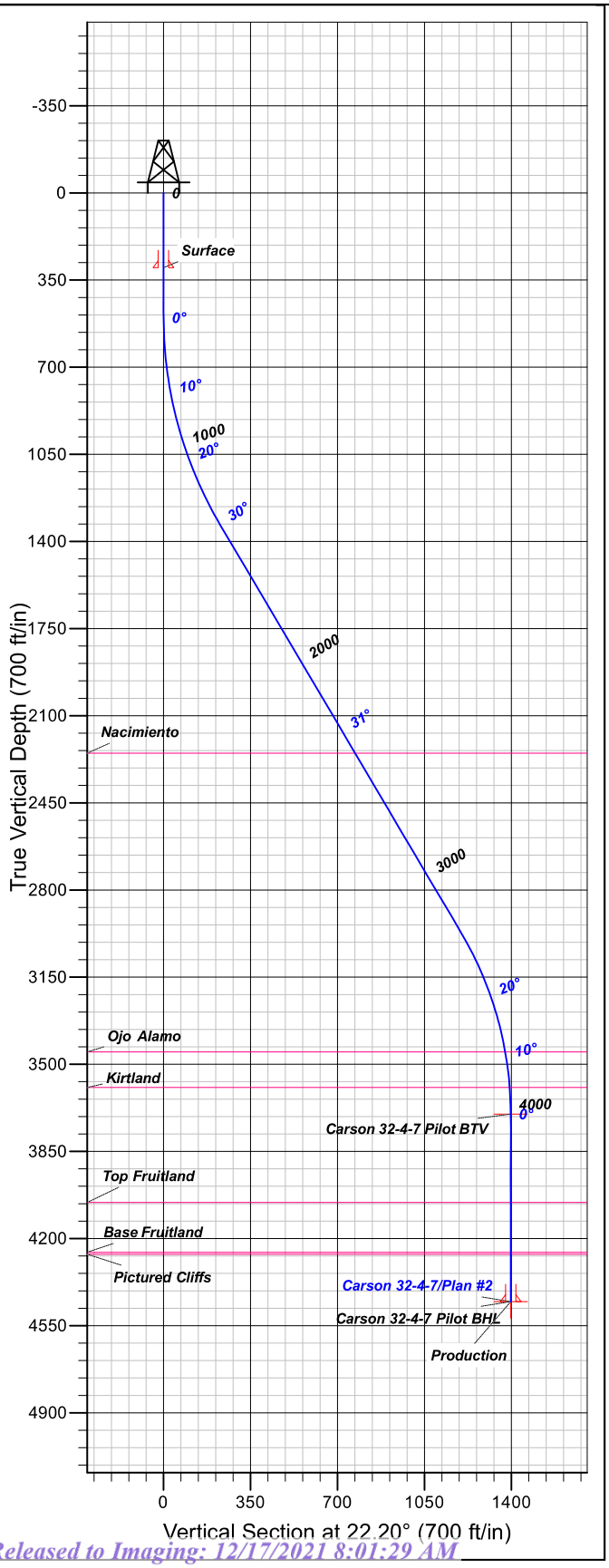
Well Details: Carson 32-4-7

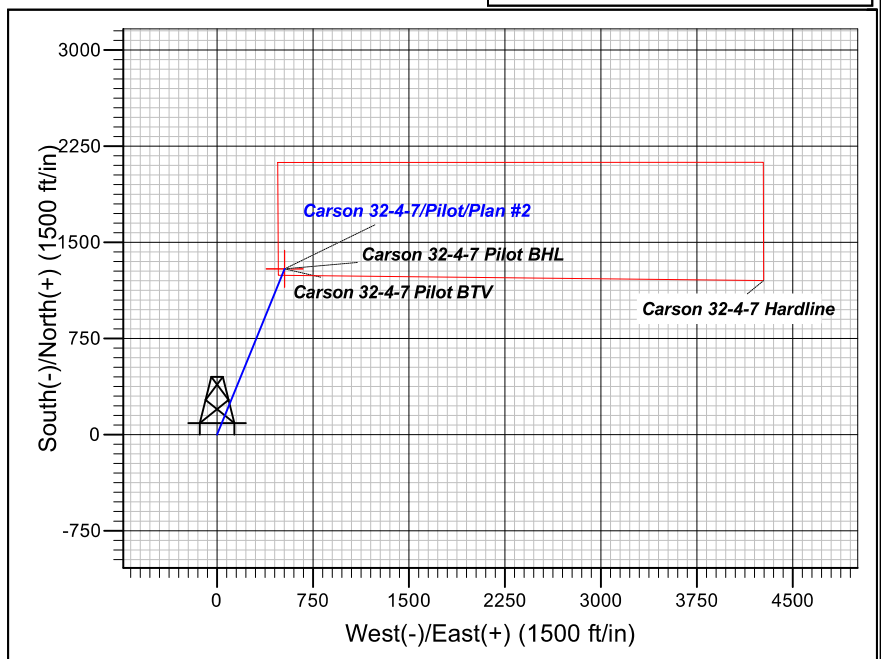
GL 7433' & RKB 15' @ 7448.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	2180980.97	2877667.01	36.9923599	-107.3040355	

Azimuths to True North
Magnetic North: 8.68°

Magnetic Field
Strength: 49767.5nT
Dip Angle: 63.47°
Date: 1/26/2021
Model: HDGM2021_FILE





FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2250.00	2439.53	Nacimiento
3450.00	3790.92	Ojo Alamo
3593.00	3935.11	Kirtland
4055.00	4397.21	Top Fruitland
4255.00	4597.21	Base Fruitland
4263.00	4605.21	Pictured Cliffs

CASING DETAILS

TVD	MD	Name	Size
300.00	300.00	Surface	9.625
4453.00	4795.21	Production	7.000

Plan: Plan #2

14:55, November 17 2021
Created By: Janie Collins

PROJECT DETAILS: Rio Arriba County, NMW NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone

System Datum: Mean Sea Level

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
1374.93	30.62	22.20	1333.87	211.37	86.26	3.50	22.20	228.30	
3276.64	30.62	22.20	2970.36	1108.26	452.28	0.00	0.00	1196.99	
4042.21	0.00	0.00	3700.00	1293.21	527.76	4.00	180.00	1396.75	Carson 32-4-7 Pilot BTV
4795.21	0.00	0.00	4453.00	1293.21	527.76	0.00	0.00	1396.75	Carson 32-4-7 Pilot BHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Carson 32-4-7 Pilot BTV - plan hits target center	3700.00	1293.21	527.76	2182277.09	2878187.57	36.9959119	-107.3022283
Carson 32-4-7 Pilot BHL - plan hits target center	4453.00	1293.21	527.76	2182277.09	2878187.57	36.9959119	-107.3022283

Coleman Oil & Gas Inc.

Rio Arriba County, NMW NAD83
Carson 32-4-7 Pad
Carson 32-4-7

Pilot

Plan: Plan #2

Standard Planning Report

17 November, 2021

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #2		

Project Rio Arriba County, NMW NAD83

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site Carson 32-4-7 Pad

Site Position:		**Northing:**	2,180,980.97 usft	**Latitude:**	36.9923599
From:	Lat/Long	**Easting:**	2,877,667.01 usft	**Longitude:**	-107.3040355
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.32 °

Well Carson 32-4-7

Well Position	**+N/-S**	0.00 ft	**Northing:**	2,180,980.97 usft	**Latitude:**	36.9923599
	+E/-W	0.00 ft	**Easting:**	2,877,667.01 usft	**Longitude:**	-107.3040355
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	7,433.00 ft

Wellbore Pilot

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021_FILE	1/26/2021	8.68	63.47	49,767.50000000

Design Plan #2

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	22.20

Plan Survey Tool Program **Date** 11/17/2021

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	4,795.21	Plan #2 (Pilot)	MWD+HDGM	
				OWSG MWD + HDGM	

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,374.93	30.62	22.20	1,333.87	211.37	86.26	3.50	3.50	0.00	22.20	
3,276.64	30.62	22.20	2,970.36	1,108.26	452.28	0.00	0.00	0.00	0.00	
4,042.21	0.00	0.00	3,700.00	1,293.21	527.76	4.00	-4.00	0.00	180.00	Carson 32-4-7 Pilot B
4,795.21	0.00	0.00	4,453.00	1,293.21	527.76	0.00	0.00	0.00	0.00	Carson 32-4-7 Pilot B

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #2		

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	3.50	22.20	599.94	2.83	1.15	3.05	3.50	3.50	0.00
700.00	7.00	22.20	699.50	11.30	4.61	12.20	3.50	3.50	0.00
800.00	10.50	22.20	798.33	25.38	10.36	27.41	3.50	3.50	0.00
900.00	14.00	22.20	896.03	45.02	18.37	48.63	3.50	3.50	0.00
1,000.00	17.50	22.20	992.26	70.15	28.63	75.77	3.50	3.50	0.00
1,100.00	21.00	22.20	1,086.66	100.67	41.08	108.73	3.50	3.50	0.00
1,200.00	24.50	22.20	1,178.86	136.47	55.69	147.40	3.50	3.50	0.00
1,300.00	28.00	22.20	1,268.54	177.41	72.40	191.62	3.50	3.50	0.00
1,374.93	30.62	22.20	1,333.87	211.37	86.26	228.30	3.50	3.50	0.00
1,400.00	30.62	22.20	1,355.44	223.20	91.09	241.07	0.00	0.00	0.00
1,500.00	30.62	22.20	1,441.50	270.36	110.33	292.01	0.00	0.00	0.00
1,600.00	30.62	22.20	1,527.55	317.52	129.58	342.94	0.00	0.00	0.00
1,700.00	30.62	22.20	1,613.61	364.68	148.83	393.88	0.00	0.00	0.00
1,800.00	30.62	22.20	1,699.66	411.85	168.07	444.82	0.00	0.00	0.00
1,900.00	30.62	22.20	1,785.71	459.01	187.32	495.76	0.00	0.00	0.00
2,000.00	30.62	22.20	1,871.77	506.17	206.57	546.70	0.00	0.00	0.00
2,100.00	30.62	22.20	1,957.82	553.33	225.82	597.64	0.00	0.00	0.00
2,200.00	30.62	22.20	2,043.88	600.49	245.06	648.57	0.00	0.00	0.00
2,300.00	30.62	22.20	2,129.93	647.66	264.31	699.51	0.00	0.00	0.00
2,400.00	30.62	22.20	2,215.98	694.82	283.56	750.45	0.00	0.00	0.00
2,500.01	30.62	22.20	2,302.04	741.98	302.80	801.39	0.00	0.00	0.00
2,600.01	30.62	22.20	2,388.09	789.14	322.05	852.33	0.00	0.00	0.00
2,700.01	30.62	22.20	2,474.15	836.31	341.30	903.27	0.00	0.00	0.00
2,800.01	30.62	22.20	2,560.20	883.47	360.54	954.20	0.00	0.00	0.00
2,900.01	30.62	22.20	2,646.26	930.63	379.79	1,005.14	0.00	0.00	0.00
3,000.01	30.62	22.20	2,732.31	977.79	399.04	1,056.08	0.00	0.00	0.00
3,100.01	30.62	22.20	2,818.36	1,024.95	418.28	1,107.02	0.00	0.00	0.00
3,200.01	30.62	22.20	2,904.42	1,072.12	437.53	1,157.96	0.00	0.00	0.00
3,276.64	30.62	22.20	2,970.36	1,108.26	452.28	1,196.99	0.00	0.00	0.00
3,300.01	29.69	22.20	2,990.57	1,119.13	456.72	1,208.73	4.00	-4.00	0.00
3,400.01	25.69	22.20	3,079.10	1,162.14	474.27	1,255.19	4.00	-4.00	0.00
3,500.01	21.69	22.20	3,170.66	1,199.33	489.45	1,295.36	4.00	-4.00	0.00
3,600.01	17.69	22.20	3,264.79	1,230.51	502.17	1,329.04	4.00	-4.00	0.00
3,700.01	13.69	22.20	3,361.05	1,255.54	512.39	1,356.07	4.00	-4.00	0.00
3,800.01	9.69	22.20	3,458.95	1,274.30	520.04	1,376.33	4.00	-4.00	0.00
3,900.01	5.69	22.20	3,558.04	1,286.68	525.10	1,389.70	4.00	-4.00	0.00
4,000.01	1.69	22.20	3,657.81	1,292.63	527.53	1,396.13	4.00	-4.00	0.00
4,042.21	0.00	0.00	3,700.00	1,293.21	527.76	1,396.75	4.00	-4.00	0.00
4,100.01	0.00	0.00	3,757.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,200.01	0.00	0.00	3,857.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,300.01	0.00	0.00	3,957.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,400.01	0.00	0.00	4,057.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,500.01	0.00	0.00	4,157.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,600.01	0.00	0.00	4,257.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,700.01	0.00	0.00	4,357.80	1,293.21	527.76	1,396.75	0.00	0.00	0.00
4,795.21	0.00	0.00	4,453.00	1,293.21	527.76	1,396.75	0.00	0.00	0.00

Lonestar Consulting, LLC

Planning Report

Database:	Grand Junction	**Local Co-ordinate Reference**	Well Carson 32-4-7
Company:	Coleman Oil & Gas Inc.	**TVD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Project:	Rio Arriba County, NMW NAD83	**MD Reference:**	GL 7433' & RKB 15' @ 7448.00ft
Site:	Carson 32-4-7 Pad	**North Reference:**	True
Well:	Carson 32-4-7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #2		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Carson 32-4-7 Pilot BTV - plan hits target center - Point	0.00	0.00	3,700.00	1,293.21	527.76	2,182,277.09	2,878,187.58	36.9959119	-107.3022283
Carson 32-4-7 Pilot BHL - plan hits target center - Point	0.00	0.00	4,453.00	1,293.21	527.76	2,182,277.09	2,878,187.58	36.9959119	-107.3022283

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
300.00	300.00	Surface	9.625	12.250
4,795.21	4,453.00	Production	7.000	8.750

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,439.53	2,250.00	Nacimiento		0.00	0.00
3,790.92	3,450.00	Ojo Alamo		0.00	0.00
3,935.11	3,593.00	Kirtland		0.00	0.00
4,397.21	4,055.00	Top Fruitland		0.00	0.00
4,597.21	4,255.00	Base Fruitland		0.00	0.00
4,605.21	4,263.00	Pictured Cliffs		0.00	0.00

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.00	500.00	0.00	0.00	Start Build 3.50
1,374.93	1,333.87	211.37	86.26	Start 1901.70 hold at 1374.93 MD
3,276.64	2,970.36	1,108.26	452.28	Start Drop -4.00
4,042.21	3,700.00	1,293.21	527.76	Start 753.00 hold at 4042.21 MD
4,795.21	4,453.00	1,293.21	527.76	TD at 4795.21

CARSON NATIONAL FOREST
JICARILLA RANGER DISTRICT

CONDITIONS OF APPROVAL

☒ Application for Permit to Drill (APD)
☐ Sundry Notice

Date:	**08/04/2020**
Operator:	**Coleman Oil & Gas, Inc.**
Well Name:	**Carson 32-4-7 #1H**
API Number:	

Legal Description:

Surface Location:
Section: **18** Township: **32N** Range: **4W**, NMPM.
Footages: **589 FNL, 176 FWL**

Bottom Hole Location (If different):
Section: **7** Township: **32N** Range: **4W**, NMPM.
Footages: **660 FNL, 660 FEL**

The following conditions of approval (COAs) will apply to this location and all associated activities and facilities on National Forest System (NFS) lands. COAs remain in effect until final abandonment and reclamation is accepted by the Forest Service Authorized Officer.

SITE SPECIFIC CONDITIONS OF APPROVAL

A. Pre-Construction

☒ **The operator or their representative will contact and schedule an on-site pre-construction meeting with the Authorized Officer, (505) 632-2956. At the time of the pre-construction meeting all access/pipeline route stakes, location stakes, well bore stake, and any archeological protective barrier(s), if applicable, will be properly located and easily identifiable. It is recommended that, at a minimum, the operator representative and the construction contractor attend the pre-construction meeting.**

☒ **The operator will ensure that a complete copy of the APD, including the surface use plan of operations (SUPO) with COAs, is readily available to all persons at all times at the project area.**

B. Cultural Resources

☐ No archeological monitoring or fencing is required; refer to the attached Record of Review (ROR) in the event of an inadvertent discovery.

☒ **Archeological stipulations apply. Follow the protective measures provided in the attached ROR. Disclosure of site location information to unauthorized personnel is prohibited under 36 CFR 296.18.**

C. Wildlife Resources

☐ Migratory Bird: A bird nest survey is required between May 15-July 31 for any projects that would remove 4.0 or more acres of vegetation. The proposed project is estimated to disturb more than four acres of vegetation, a survey will be required.

☒ **Current Mexico Spotted Owl (MSO) Protocol states "If habitat modifying or potentially disruptive activities are scheduled for a particular year, the second year of surveys should be conducted either the year before or the year of (but prior to) project implementation. In other words, no more than one year should intervene between the surveys and project implementation. An additional year of surveys is recommended prior to project implementation if more than one breeding season has elapsed since the last complete survey and no owls have been detected. If more than 4 years have elapsed between the end of two years of survey and the initiation of the proposed action, another complete inventory is recommended prior to project implementation." (U.S. Fish and Wildlife Service 2003) MSO surveys are required.**

☒ **For all construction activities (includes re-drills, re-completions, etc), a pre-construction field inspection will be required to check for nesting activity by goshawks within the project area.**

1. **If no nesting activity by goshawks is observed within the project area, construction may proceed, with notification by the Authorized Officer.**

2. **If nesting activity is observed in the project area, Forest Service protocol surveys will be initiated immediately, with seasonal restrictions on construction imposed if nesting is confirmed. This would delay construction activities until late July-August. Construction activities would be authorized after approval of the Authorized Officer.**

D. Gates

☐ A locked gate will be required in a location on the access road to this well as determined by the Authorized Officer. Refer to the Roads/Access section for gate design and construction specifications.

☒ **The existing gate on Forest Road 218S will be in functioning condition when drilling and completion are done. Refer to the Roads/Access section for existing gate requirements. The operator will be responsible for gate maintenance for the life of the well.**

E. Required Seed Mixture

Seed Mixture: See attached BLM-FFO pinyon-juniper community guidelines for seed mixture and specifications. Mulching and the sterile cover crop option is required. These requirements apply to pad and pipeline seeding.

F. Other

1. **No construction or ground disturbing activities are authorized without an approved application for permit to drill (APD) for the Carson 32-4-7 #1 well.**

2. **Refer to Coleman Oil and Gas, Inc. special use authorization, JIC46 and permit attachments for additional requirements.**

3. **See attached location, pipeline, and road drawings for approved project area.**

4. **These COAs will apply to the Carson 32-4-7 #1H well pad, access road, well-tie pipeline (gas and produced water), and all associated ancillary facilities.**

5. **All road sections constructed on minimal grade or side slope will be elevated above natural grade to facilitate proper drainage.**

6. **As a mitigation requirement, a 333-acre archeological survey will be conducted in an area specified by the Authorized Officer. The survey and report is to be completed and submitted to the Authorized Officer by the end of the calendar year in which any ground disturbing activities are initiated unless otherwise approved by the Authorized Officer.**

7. **Excessive amounts of wood from project construction will be removed by the operator under commercial wood permit.**

8. **Unless otherwise approved by the Authorized Officer all facilities will be low profile, less than 10 ft. in height, to minimize visual impacts.**

9. **On the Carson 32-4-7 #1H well location no construction zone is authorized from #1-#6-B', from edge of distrurbance (EOD) - #2 - B the construction zone is reduced to 25 feet, and corner #3 is rounded to protect ponderosa pine trees. The road/pipeline corridor width is limited to a maximum of 50 feet.**

10. **Project implemention may by impacted by wildlife survey results. Also, project implementation may be impacted by WildEarth Guardians vs. U.S. Fish and Wildlife Service, et al. CV-13-00151-TUC-RCC in U.S. District Court.**

GENERAL CONDITIONS OF APPROVAL

A. Construction, Drilling, and Interim Reclamation

1. Location Development

A. No ground disturbing activities or vehicle/equipment use is authorized outside of the approved project area.

B. It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in the National Environmental Policy Act project record and decision for this project. A copy of the project record may be obtained from the Authorized Officer.

C. Road building, location construction, drilling, and completion activities are permitted from April 1st through October 31st of each year. Approval of activities between November 1st and March 31st may be granted on a case by case basis by the Authorized Officer.

D. Unless otherwise specified all trees will be utilized for erosion control where possible. Trees are to be cut into 8-10 foot sections and stockpiled until reclamation. Upon reclamation they are to be distributed around the location or access road in such a way as to help reduce erosion or create wildlife habitat but not create an unnecessary fire hazard. Small diameter trees and slash may be mulched or chipped and stripped with the topsoil. Slash may be chipped, mulched, or stockpiled for placement on seeded areas. Excess wood will be purchased by the operator and removed under commercial wood permit or left stockpiled in an area approved by the Authorized Officer and accessible to the public by motor vehicle. Trees left for reclamation, in areas behind locked gates, will be protected from theft by means such as fencing or signage. For project areas that are accessible by motor vehicle to the public the Authorized Officer may require the operator to temporarily stockpile trees behind a locked gate, in an area approved by the Authorized Officer, to ensure an adequate amount remains for reclamation.

E. No burning of trees or slash is authorized.

F. Company signs will be allowed on NFS lands during the construction, drilling, completion, and work-over. These signs are not to be attached to any trees by any means are are to be immdeiately removed upon project completion.

2. Slope Ratios

A. The final cut slope will not exceed a 4:1 ratio. The final fill slope will not exceed a 4:1 ratio. To obtain this ratio, pits and slopes will be back sloped into the pad upon completion of drilling and prior to setting production equipment. Construction slopes can be much steeper during drilling, but will be contoured to the above final slopes upon pit reclamation. Any final slope that exceeds a 4:1 ratio must be approved by the Authorized Officer. Steeper slopes may require additional mitigation measures, such as seed matting, to ensure soil stabilization and reclamation. Slopes will be contour ripped, pocked, or water barred to prevent erosion on the location and erosion control will be designed in a manner that excessive erosion does not occur off-site.

B. The pad will be designed, constructed, and maintained in such a manner that water does not pool in the working area of the location. Location drainage must be designed and maintained in such a manner that rilling, gullying, or excessive erosion does not take place. Mitigation measures such as road surfacing or re-contouring of the location may be required if adequate location drainage is not achieved.

3. Topsoil Recovery

A. Topsoil will be stripped from the project area (minimum 6 inches deep, or all that is available if less than 6 inches), including access road, and be deposited in storage piles apart from other excavated material. It will be kept separate and protected, either in piles or windrowed. Upon reclamation the stored topsoil will be evenly spread over all areas outside the working area of the pad. Along access roads it is to be distributed over final cut and fill slopes. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

B. If the ground is saturated and topsoil recovery is not possible all construction is to cease until conditions dry to the point that topsoil can be stripped and recovered. Any snow is to be stripped and stored separately from the topsoil.

C. When work-over activities or other surface disturbances are required during production, topsoil that was previously salvaged and redistributed must be stripped off and salvaged. The topsoil must be kept separate and protected from other spoil or equipment activities. After the work-over or other operation that required the surface disturbance is completed, the stripped topsoil must be evenly spread over the exposed subsoil and the disturbed area will be promptly reclaimed following the reclamation section requirements.

4. Reserve Pit

A. The reserve pit will be approved, consructed, operated, maintained, and closed pursuant to all applicable federal, state, and local laws and regulations.

B. The operator will ensure the reserve pit is adequately fenced at all times to prevent unauthorized access and take all reasonable measures to protect public safety, wildlife, and livestock. The operator will maintain the fence in good repair. Minimum fence standards include a four foot woven wire fence with a top rail or barbed top wire and H-braced corners.

C. The operator should plan to have the reserve pit closed prior to November 1st .

5. Equipment and Vehicles

A. All vehicles and equipment will be kept free of leaks. Any leaks/spills will be appropriately contained, and the vehicle/equipment repaired or removed from the construction, production, or lease area in such a way as to prevent further spills. Any contaminated soil will be removed and disposed of properly. Fluids from routine vehicle/equipment maintenance will be removed and disposed of properly.

B. All vehicles and equipment should be properly cleaned/inspected prior to entering NFS lands to prevent spills/leaks and/or weed contamination.

C. Vehicle and equipment use is only authorized in the approved project area and on designated roads.

D. Vehicles and all equipment associated with lease operations must be driven and operated in a safe and responsible manner.

E. An approved muffler or spark arrester will be maintained on the exhausts of all vehicles, equipment, or other internal combustion engines.

6. Well Sites Constructed and not Drilled

If this well is constructed and not drilled the location and access road must be reclaimed, per the standards outlined in the Final Reclamation and Abandonment section at the time of APD expiration. If the well is not drilled before November 1st of the year that initial ground disturbance takes place the Authorized Officer may require interim mitigation measures such as seeding, the installation of water bars, or other site specific measures to ensure temporary soil stability and prevent erosion. Unless otherwise approved any archeological protective fencing must be removed and then re-established prior to commencement of activities.

B. Production/Facilities

1. Production Facilities

Design and layout of facilities will be deferred until an onsite with the Authorized Officer is conducted to determine the best location. The operator or their representative will contact the Authorized Officer to schedule a facility layout onsite. No facilities will be installed without prior appoval by the Authorized Officer. Once a design and layout plan is approved by the Authorized Officer any modifications must be approved in advance by the Authorized Officer.

2. General facility requirements

A. Production facilities (including berms) will be placed on cut a minimum of 10 feet from the toe of the cut. If pad location does not allow for facilities to be placed on cut, facilities may be placed, with Authorized Officer approval, on fill. All facilities including berms will be located a minimum of 10 feet from the top of the fill.

B. Production facilities, including any facilities associated with pipeline operations, will be placed on location as not to interfere with reclaiming the cut and fill slopes to their proper ratio. If equipment is found to interfere with the proper reclamation of the slope, the operator will be required to move the equipment so proper re-contouring can occur.

C. All open top permanent production or storage tanks, regardless of diameter, made of fiberglass, steel, or other material used for containment of oil, condensate, produced water, or other production waste will be screened, netted, or otherwise covered to protect migratory birds and other wildlife from access. Exhaust vents/stacks will have devices/screens installed to prevent bird/wildlife access.

D. No weeds or vegetation are allowed on or within secondary containment berms/structures.

E. A "residential style" muffler is required on production engines to reduce noise levels. In noise sensitive areas (NSA) a “hospital grade” muffler is required. Within a noise sensitive area noise levels will comply with BLM guidelines and standards for NSA’s.

F. Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau’s guidance. Compressor units not equipped with a drip pan for containment of fluids will be placed in a containment berm. The bermed area will be lined with an impervious material at least 8 mils thick. The berm will be a minimum of 12 inches tall and graveled to prevent erosion. The compressor will be painted to to match the well facilities. When compressor units are washed, or any equipment associated with the location, the fluids (i.e., scrubber cleaners) will be properly disposed of to avoid ground contamination or hazard to livestock or

wildlife. Fencing and/or exclusion devices may be required to protect birds, wildlife, or livestock.

G. All well and facility locations will be properly identified and signed per applicable laws and regulations. Production tanks and all bulk storage tanks must be labeled to identify contents. All storage tanks/vessels must be labeled/placarded in accordance with all applicable laws and regulations.

H. All above ground surface structures and equipment will be painted a non-glare color as follows: Green, Federal Standard 595a-34127 (Juniper Green). The exception being where applicable laws and/or regulations require other colors or markings. The operator may request different colors or markings if operator safety policies dictate. All facilities must be painted within three months of installation. Periodic repainting of facilities will be required to keep all facilities maintained in an acceptable condition.

I. All above ground appertances and facilities must be approved in advance by the Authorized Officer. The operator must notify the Authorized Officer prior to removing or terminating any pipeline, equipment, storage vessel/tank, or facility. Site mitigation may be required upon facility/equipment removal.

J. Any facility, tank, container, vessel, or equipment not in use for thirty days must be removed from National Forest System (NFS) lands. Authorization to keep unused facilities or equipment on NFS lands beyond thirty days must be obtained from the Authorized Officer. Site mitigation may be required upon facility/equipment removal.

3. Secondary Containment

A. Unless otherwise specified or approved all storage facilities (including produced water tanks) must be contained in a secondary spill containment structure. All containment berms, containment walls, drip pans, or equivalent protection structures are to be constructed and maintained around all storage facilities, including tank batteries. The containment structure must have sufficient volume to contain, at a minimum, the content of the largest storage tank within the facility/battery and sufficient freeboard to contain precipitation, unless more stringent protective requirements are deemed necessary by the Authorized Officer. All chemical and equipment oil/fluid/fuel storage vessels, whether the vessels are permanent or temporary, must be fully contained within a secondary spill containment structure. Secondary containment capacity will be calculated at the lowest point on the structure.

B. All well facilities, tanks, and storage facilities/vessels will prevent birds, wildlife (including wild horses) and livestock from having access to all produced fluids and any other onsite fluids or solids that could be harmful. This may include fencing all production pits/tanks (48 inch height, braced corners, top rail or barbed top wire, and 4 strand wire or woven wire fence.), compressors, tank batteries, and containment troughs. Screens, covered troughs, and drip pan covers may be used where suitable and constructed in such a way that wildlife/birds can not access the contents at its highest

level. Self closing gates or walk-overs are required with any fencing and over containment berms/structures. All gates need to be kept closed and fences should not be affected by flow lines. Fences should be located and maintained to keep all animals a safe distance. All structures, fences, or barriers must be approved, by the Authorized Officer, prior to installation.

C. Gravel or another sufficiently impervious material will be placed on berms to prevent erosion. The berm will be maintained so that it does not erode, ensures adequate containment, and prevents livestock or wildlife from entering the containment structure.

D. Load-out lines must terminate within the bermed area unless otherwise approved by the Authorized Officer.

E. For crude oil, condensate, or produced water lines, either a trucker supplied mobile or permanent catch basin will be installed at the point of hook-up. No pipes, cables, or gas lines are to be routed through the berm itself. An exception may be made by the Authorized Officer on a case by case basis.

4. Roads/Access

A. The operator will be a member, in good standing, of the Carson Forest Road Maintenance Committee (Jicarilla Road Committee), unless otherwise approved by the Authorized Officer. Except for roads designated and accepted for maintenance as part of the Jicarilla Road Committee, the operator is responsible for maintenance of all roads that are designated and authorized for use. The operator is responsible for all road maintenance, if the operator is the only authorized user, or in part if multiple users are authorized.

B. All construction activities, vehicle, and equipment use is to cease if the road surface or ground is saturated to the point that rutting greater than 6 inches occurs. The operator is responsible for any road damage caused by wet weather operation. No mud plowing or the use of equipment to drag/assist other vehicles/equipment will be allowed during wet, snow, or muddy road conditions.

C. **New Gate:** The gate will be constructed of 2 inch pipe in a design that will prohibit unauthorized motorized vehicles from driving under or around it. The gate will be painted green, Federal Standard 595a-34127, and incorporate road closed signs and reflectorized barricade signs that meet Authorized Officer standards. These signs must be installed at the time of gate construction to ensure public safety. A lock box containing enough holes for all authorized user locks plus one hole for a FS lock will be constructed. Wing fencing may be needed on either or both sides of the fence to ensure unauthorized motorized vehicles cannot travel around the gate. Wing fencing must stay within the approved project area. The gate must be constructed before the first big game hunt and then left locked or secured with a gate guard to prevent unauthorized motor vehicle travel. The operator will have routine maintenance responsibility for this gate for the life of the well. The operator will ensure that the gate and any associated wing fencing is functional, all authorized users have access, and all required road closed and

reflective/safety signage is present.

D. **Existing Gate:** The operator will have routine maintenance responsibility for this gate for the life of the well. This operator will ensure that the gate and any associated wing fencing is functional, all authorized users have access, and all required road closed and reflective/safety signage is present.

E. All NFS roads damaged by construction, production, and/or lease activities will be restored to a functional and acceptable condition. This includes, but is not limited to restoring original ditch lines, replacing or repairing any damaged culverts, re-establishing road surfacing where surfacing was lost or contaminated, and restoring effective road drainage.

F. Unless otherwise required or specified, all roads on NFS lands will be designed, constructed, and maintained to Gold Book Standards (United States Department of the Interior and United States Department of Agriculture. 2006. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071. Bureau of Land Management. Denver, Colorado. 84pp. and any revisions thereto) for FS local roads. The driving surface on all access roads will be limited to 14 feet in width, and total disturbance will be limited to 24 feet not including cuts and fills or turnouts. Any access road constructed will be crowned and ditched, in-sloped, or out-sloped where appropriate. This will require installation of culverts and/or armored water bars per Gold Book standards. Additional cross drainage may be required depending upon site specific circumstances. Culvert size will be a minimum of 18", larger culverts will be required where appropriate. Rip-rapping, velocity breaks or other drainage/erosion control measures may be required. Adequate and effective drainage will be constructed and maintained in good working order. Topsoil will be stockpiled and redistributed for reclamation on cut and fill slopes and the cut and fill slopes will be re-vegetated to the same standard as the well pad.

G. If, upon abandonment of the well location, the retention of the access road is not considered necessary by the Authorized Officer, it will be re-contoured to as near natural as possible. The access road and well location will be closed to vehicular travel. Re-vegetation of the affected area will be required. Alternatively, the Authorized Officer may request the road be lightly ripped to eliminate compaction. The road will be water barred, pocked, or contoured ripped where necessary to ensure soil stability and prevent erosion. Construction of a barricade at the entrance to these areas may be required. Re-vegetation of the affected area will be required.

H. If, upon abandonment of the well location, the retention of the access road is considered necessary by the Authorized Officer, then the gate, if any, will remain in place, and it is to be converted by the operator to a single lock locking system.

I. No gravel or other related minerals from new or existing pits on NFS lands will be used in construction of roads, well sites, etc., without prior approval from the Authorized Officer.

J. Water dips and culverts will be constructed and maintained in working condition on the access road to the well location. The Gold Book standard for maximum recommended culvert spacing will be utilized. Additional cross drainage may be required depending on site specific conditions.

K. Produced water will either be piped or trucked for proper disposal. If trucked, operator will be responsible for any road damage or damge to cattleguards, fences, culverts, drainage structures, and road surface caused by water hauling. The time of day for water hauling may be limited.

L. The operator will keep all road gates locked at all times. During activities that require heavy traffic volume a gate may may left open with a gate guard posted to regulate unauthorized motor vehicle traffic. Motorized vehicle travel on authorized use roads, behind gates, is prohibited except for authorized use by the operator and/or their representatives performing lease activities.

M. The Authorized Officer may restrict vehicle access during wet weather periods to protect roads and resources. The operator is responsible for all road damage caused by wet weather operations. The operator is encouraged to upgrade and maintain roads to an all weather standard.

N. Any road/traffic signs must be approved by the Authorized Officer prior to installation and installed and maintained in accordance with the Manual on Uniform Traffic Control Devices. All signs will be installed on break-away sign posts.

5. Gates/Cattleguards/Fences

A. Fencing of individual facilities, such as the pump jack (including well head), treater, and tank battery with wildlife and livestock proof fencing may be required. The fence around any fluid storage facilities must be constructed on the outside perimeter of the berms to protect them from deterioration due to animals walking over them.

B. All cattle guards must have wings installed on both sides to prevent livestock from stepping around the ends. The cattle guard design and installation must meet all Authorized Officer standards and specifications and a cattleguard warning sign may be required. A 12 foot gate must be installed between the cattle guard and brace assemblies on whichever side of the cattle guard is most convenient. If the gate is made of wire, it must have at least four horizontal strands of barbed wire, with at least four 3 inch diameter vertical wood stays evenly spaced. When the gate is closed the wires must be taut. The operator is responsible for the maintenance of the cattle guard for the life of the project.

C. Prior to crossing any fence located on federal land, or any fence between Federal land and private land, the operator will contact the Authorized Officer. All cut fences are to be secured to braces prior to cutting. The operator is responsible for repairing any fence

damage resulting from their activities. All fences are to be constructed and maintained to Authorized Officer standards.

D. Any cut fence openings will be protected as necessary during construction to prevent the escape of livestock. A temporary closure will be installed on all cut fences the same day the fence is cut.

6. Interim Reclamation Requirements

A. The operator will contact the Authorized Officer at least 48 hours prior to any interim reclamation activities.

B. The operator will conduct a condition survey of the authorized area. The survey will include monitoring for erosion, vegetation reclamation, noxious weeds, unnecessary or excessive environmental impacts, hazardous conditions, facility(s) condition, unauthorized motorized vehicle use, and compliance with the SUPO and COAs. The operator will provide the Authorized Officer a written condition survey report within three years of initial project area disturbance. Mitigation measures may be required for any identified issues.The operator will perform follow-up surveys in such a manner that the authorized project area is surveyed and any necessary reclamation requirements are completed every five years.

C. All areas of the well pad and access road not needed for production facilities will be re-contoured to blend as nearly as possible with the natural topography. All areas outside the anchor points, not directly adjacent to facilities, or on the designated vehicle route will be reclaimed. These areas will be topsoiled, mulched (certified weed free straw mulch crimped in at 2 tons per acre or excelsior mats or equivalent will be used), and seeded with the required seed mix. Slopes will be contour ripped, pocked, or water barred to prevent erosion on the location and designed in a manner that excessive erosion does not occur off-site. Cut and fill slopes will be top soiled and mulched, as specified above, and revegetated.

D. Seeding will be completed prior to November 1st unless otherwise approved by the Authorized Officer.

E. Reclamation will be approved (minimum timeframe of three growing seasons) when the established native species vegetative cover is equal to 70% of the adjacent undisturbed areas and the soil is stabilized. There should be no indicators of active erosion including rills and gullies or noxious weeds. Seeding should be repeated annually after three growing seasons until reclamation meets the above standard and is accepted by the Authorized Officer. Where vegetation is re-disturbed after establishment it will be reseeded annually until vegetation is re-established.

F. To maintain purity and quality, certified seed is required.

G. The operator will provide verification of seed mixture and weed free mulch certification

within 30 days of completion.

H. The operator is required to re-seed any previously seeded areas that have been disturbed from any production, work-over, or maintenance related activities.

I. The operator is responsible for successful reclamation regardless of weather or other factors.

J. The well pad may require fencing to protect or promote reclamation efforts. If reclamation fails due to grazing pressure, the Authorized Officer may require fencing of the location until reclamation is determined to be successful. This will also require the installation of a gate and/or cattleguard at the location access. All fences must be built and maintained to Authorized Officer standards.

7. Noxious Weed Control

A. The operator will survey the authorized area for the presence of noxious weeds prior to initial ground disturbing activities. The operator will perform another survey within three years of initial project area development. Follow-up surveys will then be conducted every five years. The operator will submit the survey findings to the Authorized Officer within thirty days of the survey. Noxious weeds are those listed on the New Mexico Noxious Weed List or USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly checked for any changes. Based on survey results a Weed Management Plan may be required.

B. A Pesticide Use Proposal (PUP) must be submitted to and approved by the Authorized Officer prior to application of pesticide. The Authorized Officer can provide assistance in the development of the PUP.

C. All vehicles and equipment should be inspected for noxious weed contaminates and cleaned prior to entering NFS lands. This is especially important on vehicles from out of state or if coming from a weed-infested area.

D. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the Authorized Officer.

E. Only pesticides authorized for use on NFS lands will be used and applied by a licensed pesticide applicator. The use of pesticides will comply with all federal and state laws and will be used only in accordance with their registered use and limitations. The operator's licensed applicator will contact the Authorized Officer prior to using any pesticides.

F. Noxious/invasive weed treatments must be reported to the Authorized Officer. A Pesticide Use Report (PUR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species.

Reporting will be required quarterly and annually or per request from the Authorized Officer.

G. Bare ground vegetation trim-out: If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design. The design will address the vegetation safety concerns of the operator, while minimizing impacts to reclamation efforts. The design must include what structures are to be treated and the buffer distances of trim-out. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (e.g. doglegs, pig launchers, or tanks). Additional distance/areas may be requested, but must be approved by the Authorized Officer. The additional information below must also be provided to the Authorized Officer:

1. Pesticide use for trim out will require a PUP. A PUP is required prior to any treatment and must be approved by the Authorized Officer. Only pesticides authorized for use on NFS lands will be used and applied by a licensed pesticide applicator. The use of pesticides will comply with all federal and state laws and used only in accordance with their registered use and limitations. The operator's licensed applicator will contact the Authorized Officer prior to using these chemicals and provide PURs post treatment.

2. A PUR or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the Authorized Officer.

C. Natural/Cultural Resources

1. Wildlife Resources

A. A survey for threatened, endangered or sensitive species will be conducted by the Authorized Officer or by an approved invidual, prior to any construction activities. The Authorized Officer will indicate which species require surveys. Additional measures may be required to mitigate threatened, endangered, or sensitive species concerns.

B. If, during operations the operator discovers any threatened, endangered, or sensitive species, all work in the vicinity of the discovery will be suspended and the discovery promptly reported to the Authorized Officer. The Authorized Officer will then specify what action is to be taken. Failure to notify the Authorized Officer about a discovery may result in civil or criminal penalties in accordance with the Endangered Species Act (as amended).

C. The Authorized Officer will be notified within 24 hours of the discovery of any wildlife, bird, livestock, or wild horse that was trapped, injured, or died as a result of lease operations, activities, or facilities. Mitigation measures may be required to prevent further injury or fatality.

D. If a bird nest containing eggs or young is encountered in the path of construction the operator will cease construction and consult with the Authorized Officer to determine appropriate actions.

2. Cultural and Paleontological Resources

A. Archeologists employed by the operator must be permitted by the Forest Service to conduct an archeological survey on any NFS lands which may be disturbed.

B. The operator and all subcontractors will abide by all of the conditions contained in the Inventory Standards and Accounting Form (IS &A) and Archeological Record or Review (ROR) which is part of and attached to these COAs.

C. If it is deemed necessary, the Authorized Officer may require the operator to perform recovery, excavation, or preservation of the site and its artifacts at the operator's expense. At the option of the Authorized Officer, this authorization may be terminated with no liability by the United States when such termination is deemed necessary to preserve or protect archeological, paleontological, or historic sites and artifacts.

D. Health and Safety

A. The Authorized Officer must be notified immediately of any condition that may result in a public health and/or safety concern, Forest Service road closure or blockage, or potential natural resource damage.

B. The operator will maintain structures, facilities, improvements, and equipment in a safe and orderly manner and will take all appropriate and reasonable measures to protect the public, wildlife, and livestock from hazardous sites, equipment, materials, fire hazards, or unsafe conditions resulting from their operations.

C. Any spill, release, or incident that requires reporting to any federal, state, or local government or regulatory agency will be reported to the Authorized Officer within the same time frame as required by that agency.

D. The operator will immediately notify the Forest Sevice of all serious accidents which occur in connection with lease operations. Additional mitigations measures may be required to prevent further accidents.

E. The operator will provide a chemically treated portable toilet unit when projects or activities require multiple workers for multiple days. Sewage will be properly disposed of in a manner and place specified by applicable laws and regulations. Burying of sewage from chemically treated portable toilets will not be allowed. When chemically treated portable toilets are not required the operator will ensure human waste is disposed of per the recommendations outlined in The "Leave No Trace Seven Principles" (© 1999 by the Leave No Trace Center for Outdoor Ethics: www.LNT.org). Human waste will not be disposed of in any identified natural or cultural area of resource concern.

F. The operator will properly dispose of all trash, garbage, waste, or byproduct. A trash cage must be on location throughout all drilling and completion activities. Burying trash in the reserve pit will not be allowed. Burning of trash will not be allowed.

G. Any waste, byproduct, chemical, or substance that spills or releases must be properly disposed of in accordance with applicable law, regulation, and/or condition of approval. Any contaminated soil must be excavated and removed for disposal or mitigated in accordance with applicable law, regulation, and/or condition of approval. No waste or byproduct will be discharged onto the ground or near a stream/erosional course or channel.

H. If the well is cavitated any coal fines will be immediately washed off contaminated vegetation. Only fresh water may be used.

I. Feeding or allowing wildlife or livestock access to food, garbage, refuse, waste, byproduct, and/or stored materials, etc. is prohibited.

J. Work sites must be kept clear of litter and debris, and left hazard free at the end of every work shift. Any hazards must be clearly identified and isolated with reflective and protective barriers.

K. Permanent protective barriers may be required around any facilities located near a roadway that could possibly become a public safety issue or hazard.

L. The well location will be maintained in a clean, neat, and orderly manner. Trash, debris, unused machinery/equipment, excess equipment/parts, etc., will be removed immediately. No unused items will be stockpiled or stored on a well location or other NFS lands without prior approval of the Authorized Officer.

M. The operator will abide by all applicable laws and regulations concerning hydrogen sulfide (H_2S). The operator will immedialtely notify the Authorized Officer if a location or facility poses an H_2S hazard or is required to be identified for H_2S hazards.

N. The operator will abide by all Forest Service requirements during periods of fire restrictions. The Authorized Officer will make available information concerning current fire restriction levels and specific requirements. The operator is responsible for all damage and costs resulting from fires caused by their operations and activities. The operator will conduct all activities and maintain all facilities in a manner that reduces fire hazards and minimizes threats to facilities from potential wildfires.

E. Environmental Protection

A. The operator will conduct all activities associated with this lease operation in a manner that will avoid or minimize the degradation of air, land, and water quality. In the construction, operation, maintenance, and termination of this lease operation, the operator will perform its activities in accordance with all applicable air and water quality standards, facility siting standards, and applicable laws and regulations.

B. All applicable local, state, and federal laws and regulations concerning the transportation and disposal of produced water will be followed.

F. Surveys and Land Corners

A. The operator will protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges authorized by this permit, depending on the type of monument destroyed, the operator will see that they are reestablished or referenced in accordance with: the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," the specification of the county surveyor, or the specification of the Authorized Officer.

B. Further, the operator will ensure any official survey records affected by this activity will be amended as provided by law.

C. Nothing in these stipulations will relieve the operator's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

D. Avoid removal of any bearing trees. If any must be removed they must be replaced according to Authorized Officer specifications.

G. Other Conditions of Approval

A. Explosives

Should the use of explosives be required during construction or lease activities, the operator will comply with all applicable local, state, and federal laws, regulations and requirements involving the storage, handling, preparation, and use of explosives. Prior to the use of any explosives, the operator will prepare an explosive use/blasting plan for Authorized Officer approval.

B. Vandalism

The operator will take reasonable measures to prevent and discourage vandalism or disorderly conduct, and when necessary, call in the appropriate law enforcement agency.

C. Subleasing Requirements

The operator will require all representatives, employees, sub-lessees, contractors, sub-contractors and their employees and representatives comply with the approved APD, including the SUPO and these COAs.

D. Improvements

1. Prior to crossing, using, or paralleling any improvement on NFS lands, the operator will contact the owner of the improvement to obtain mitigation measures to prevent damage to the improvements.
2. Any improvements, developments, facilities, activities, and/or infrastructure not specifically addressed in these COAs or the operator's approved SUPO are prohibited without Authorized Officer approval.

E. Changes in Operator, Company Name, or Address

The operator must notify the Authorized Officer in writing no later than 30 days after a sale or transfer of facilities, a company name change, well name change, or a change in address.

F. Sanitation

The operation and maintenance of all sanitation, food service, and water-supply methods, systems, and facilities will comply with all applicable local, state, and federal laws and regulations.

H. Final Abandonment and Reclamation

A. Prior to abandonment, the operator will notify the Authorized Officer and provide an Abandonment Plan, for Authorized Officer approval, which specifies how the operator intends to reclaim the well pad and access road. The Abandonment Plan will address, but not be limited to:

1. Type and design of well bore marker.
2. Removal of all surface facilities.
3. Flushing/purging and capping/sealing pipelines if applicable.
4. Protecting/salvaging topsoil during location/access re-contouring.
5. Re-contouring of the pad and access road to natural slope.
6. Removal of culverts, gates, and cattleguards if applicable.
7. Soil stabilization.
8. Erosion control.
9. Reseeding/revegetation.
10. Noxious weed control.
11. Vehicle/access barriers.
12. Monitoring schedule to ensure adequate reclamation.
13. Any other site specific issues.

B. The Abandonment Plan must be approved by the Authorized Officer prior to any abandonment work. The operator or their representative will contact and schedule an on-site pre-abandonment meeting with the Authorized Officer prior to conducting any abandonment activities.

C. Final reclamation must be approved by the Authorized Officer. Reclamation will be approved (minimum timeframe of three growing seasons) when the established native vegetative cover is equal to 70% of the adjacent undisturbed areas, the soil has been stabilized, no excessive erosion exists, there are no noxious/invasive weeds, and there are no signs of unauthorized motor vehicle use. The Authorized Officer may require the operator to submit a report detailing these conditions prior to approval of final abandonment. Additional measures may be required by the Authorized Officer to correct any identified issues.

D. The operator is responsible for successful final reclamation regardless of weather or other factors.

I. Use of Unmanned Aircraft Systems (UAS)

A. Use of any UAS for lease operations or activities requires prior Authorized Officer notification and approval.

B. All UAS operations conducted per Federal Aviation Administration (FAA) compliance within the provisions of Part 107 for commercial use must have:

1. Aircraft registration.
2. Remote pilot certificate with a Small Unmanned Aircraft System (sUAS) rating.

C. All UAS operations conducted outside of FAA compliance within the provisions of Part 107 for commercial use must have:

1. Aircraft registration.
2. Remote Pilot certificate with a sUAS rating.
3. Waiver(s) to the specific aspect of Part 107 to operate outside of OR a 333 exemption and Certificate of Waiver or Authorization (COA) (There is a 400' AGL and below blanket COA that could be used with the separate 333 exemption).

D. Any UAS mishap or accident must be reported per FAA laws and regulations. Also, the Authorized Officer must be notified of any mishap or accident that is reportable to the FAA.

E. The operator is responsible for recovery and retrieval of any hazardous material or equipment lost as a result of UAS operations. Also, the operator is responsible for any damage or liability arising from UAS operations.

J. Inspection, Enforcement, and Compliance

A. All operations on NFS lands may be inspected periodically by the Authorized Officer or other applicable regulatory agencies. Inspections of leasehold operations are made to ensure compliance with applicable laws, regulations, lease terms, the APD and its SUPO with conditions of approval, Onshore Oil and Gas Orders, NTLs, and other written orders of the Authorized Officer. Operators are expected to initiate their own inspection programs, identify noncompliance, and take appropriate corrective actions, rather than relying on outside inspections to identify problems.

B. The operator will abide by all applicable federal, state, and local laws and regulations while conducting lease activities and operations. It is the responsibility of the operator to obtain any required permit, license, certificate, etc. required for construction activities, or to conduct lease activities or operations.

FS Report Number: **2016-02-004 & 2016-02-004B**

ARCHEOLOGICAL RECORD OF REVIEW

US FOREST SERVICE
JICARILLA RANGER DISTRICT, CARSON NATIONAL FOREST

1. **Project/Report Description:**
   Project Name: **Carson 32-4-7 #1H Well Pad, Access Road, and Pipeline**
   Project Sponsor: **Coleman Oil & Gas, Inc.**

   Archeological Contractor: **Western Cultural Resources Management**

   Location: **T32N, R4W, Section(s) 18, T32N, R5W, Section(s) 12**
   Well Footages: **589'FNL, 176', FWL**

   Project Area Dimensions:
   Well pad and construction zone: **330 x 400 feet**
   Access road: **280 x 20 feet**
   Pipeline ROW: **444 x 30 feet**

   Sites Located in Project Area: ☐ NO ☒ YES

FS Site Number	LA Site Number	Eligibility	Protective Measures
AR-03-02-03-01804	LA 160601	Eligible	TEMPORARY BARRIER
AR-03-02-03-01805	LA 160602	Eligible	TEMPORARY BARRIER
AR-03-02-03-01806	LA 160603	Eligible	TEMPORARY BARRIER; PERMANENT BARRIER; RESTRICTED CONSTRUCTION ZONE; MONITOR

2. **Recommendation:**
   ☒ Proceed with project ☒ Archeological Stipulations Attached

3. **Reviewer/Archeologist: Rachel Miller** **Date: 1/9/2020**

Note: If there are questions about these stipulations, contact:
Rachel Miller at 505-632-2956, ext. 77233, rachel.m.miller@usda.gov

Stipulations Apply to:

☒ **Well Pad** ☒ **Access Road** ☐ **Pipeline ROW** ☐ **Other:**

1. **Discovery of Archeological Resources in the Presence or Absence of Monitoring:**
   If, prior to or during excavation work, items of archaeological, paleontological, or historic value are reported or discovered, or an unknown deposit of such items is disturbed, the operator will immediately cease excavation. The operator will then notify the Forest Service immediately and will not resume excavation until written approval is given by the Forest Service authorized officer.

2. **Site Protection and Employee Education:**
   The operator, all of their employees, contractors, and subcontractors will be informed that cultural resources are to be avoided by all personnel, vehicles, and equipment. The operator will notify all of their employees, contractors, and subcontractors that it is illegal to collect, damage, or disturb cultural resources and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 USC 470aa-mm).

   The operator shall be responsible for the protection of all identified cultural resources within the area which may be affected by their actions. In addition, the operator shall be liable for all damage or injury to the identified cultural resources caused by their actions.

   Disclosure of site location information to unauthorized personnel is prohibited under 36 CFR 296.18.

3. **Site Barrier:**
   Temporary site protection barriers will be erected prior to any construction activities. The barriers will consist of the following (applicable when checked):

   ☐ **No site protection barriers required.**
   ☒ **T-posts:** Spaced no more than 10 feet apart. Wire is not required, but should be smooth wire if used. Mark posts (and wire) with blue flagging or paint.
   ☐ **Concrete Barriers:** Placed in continuous line.
   ☐ **Permanent Pipe Barrier:** Upright pipe to be set in concrete with uprights spaced no more than 10 feet apart. Cross pieces of either pipe or cable to be placed/strung between uprights to prevent vehicle/ equipment access to the site area.
   ☐ **Other:**

 Approval Date: 10/06/2021

Site protection barriers are to be placed as indicated on the attached map(s). Protective barrier placement may be completed by the archeologist, or under the direction of the archeologist. Fences and/or barriers must be in place prior to the scheduled pre-construction meeting.

No construction activities or vehicle use is authorized behind the site protection barrier. If any vehicle/equipment activity or damage occurs behind the fence, in the protected area, all activities are to stop until the Forest Service is notified and a damage assessment is conducted. Work can only resume with Forest Service approval. Emergency containment or emergency measures are allowed; however the Forest Service must be contacted as soon as reasonably possible. The operator will be responsible for any damages to resources from emergency measures.

Barriers are to remain in place through reclamation and reseeding. The barriers are to be removed promptly after reclamation, unless other arrangements are made with the Forest Service.

4. Archeological Monitoring Requirements:

☐ **Monitoring is NOT Required**

☒ **Monitoring is Required**

It is the operator's responsibility to provide a copy of these stipulations and the IS &A to the archeological monitor prior to the scheduled pre-construction meeting.

The monitor will submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the Forest Service. A copy of these stipulations must be attached to the monitor report.

No construction activities, including vegetation removal, may begin before the arrival of the archeological monitor.

5. Archeological Site Protection Requirements:

Site AR-03-02-03-01804/LA 160601

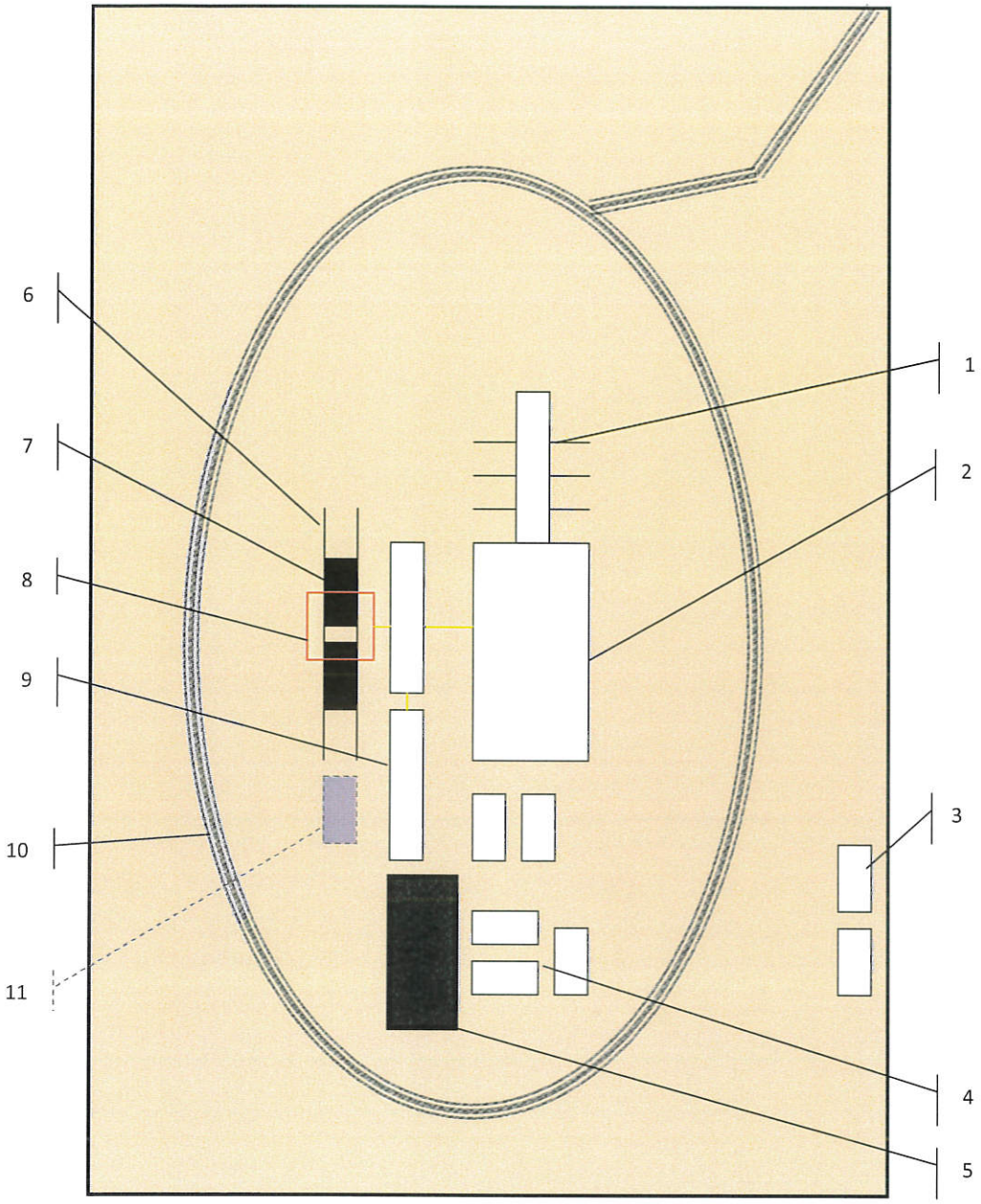
1. Inspect existing T-post fence and reset fallen posts.
   a. Maintain T-post fence during construction, drilling, and reclamation activities.
   b. Remove T-post fence upon completion of all ground disturbing activities.

Site AR-03-02-03-01805/LA 160602

1. Inspect existing T-post fence and reset fallen posts.
   a. Maintain T-post fence during construction, drilling, and reclamation activities.
   b. Remove T-post fence upon completion of all ground disturbing activities.

Site AR-03-02-03-01806/LA 160603

1. Inspect existing T-post fence and reset fallen posts.
   a. Maintain T-post fence during construction, drilling, and reclamation activities.
   b. Remove T-post fence upon completion of all ground disturbing activities.
2. No Construction Zone authorized on western side of well pad from Corner 1 to Corner 6, and no Construction Zone authorized on southern side of well pad from Corner 6 to B'.
   a. Place permanent fence consisting of T-posts and blue flagging beginning at Corner 1 and extending south along well pad edge to Corner 6 and from Corner 6 to B' along southern edge of well pad.
   b. Fence to remain in place for life of well.
3. Archeologist to monitor all ground disturbing activities within 100 feet (30 meters) of site.



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)

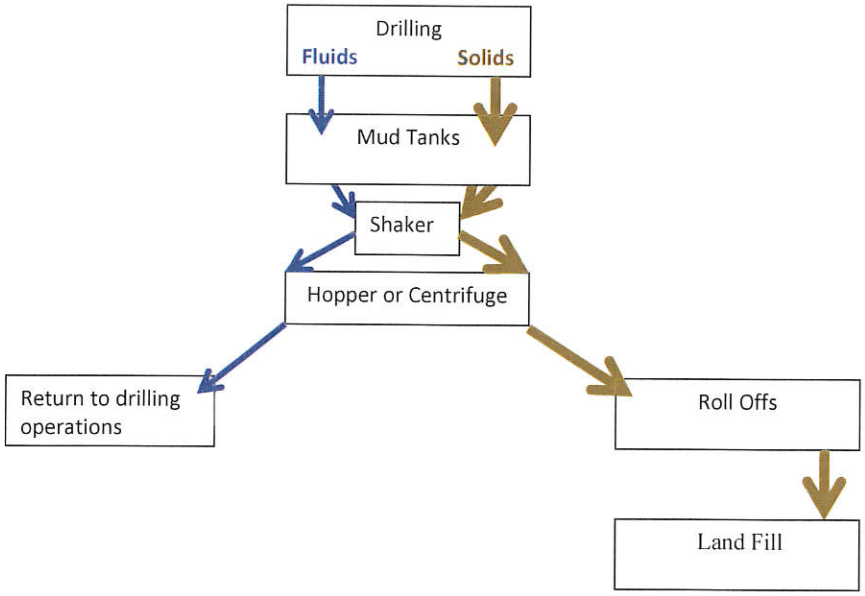
*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

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

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
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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 66963

CONDITIONS

Operator:	OGRID:
COLEMAN OIL & GAS INC P.O. Drawer 3337 Farmington, NM 87499	4838
	Action Number: 66963
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	12/17/2021
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/17/2021
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	12/17/2021
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/17/2021
kpickford	Cement is required to circulate on both surface and production strings of casing	12/17/2021