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.
30-043-23148

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: 09/12/2022

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-23148	~~52860~~ 97981	~~RUSTY GALLUP OIL~~ WC 22N6W22; GALLUP (O)
4 Property Code	**5 Property Name**	**6 Well Number**
333630	TERRA WASH COM	382H
7 OGRID No.	**8 Operator Name**	**9 Elevation**
372286	ENDURING RESOURCES, LLC	7126'

10 Surface Location

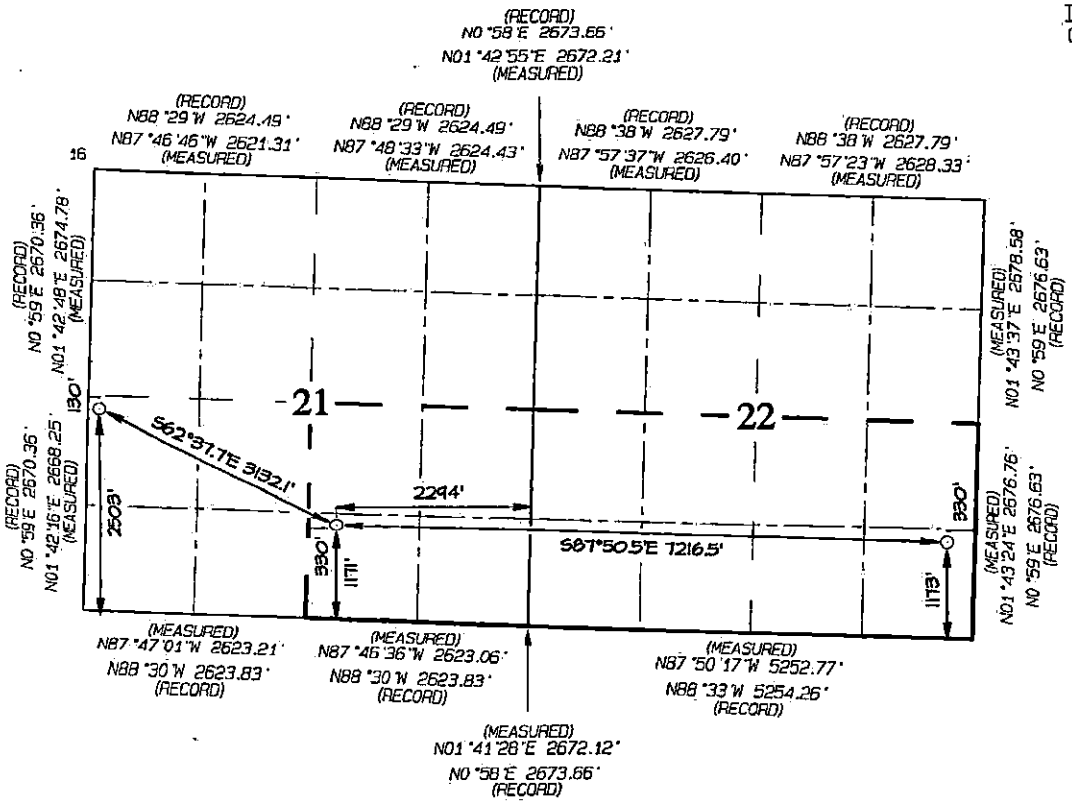
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	21	22N	6W		2503	SOUTH	130	WEST	SANDOVAL

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
P	22	22N	6W		1173	SOUTH	330	EAST	SANDOVAL

12 Dedicated Acres		13 Joint or Infill	14 Consolidation Code	15 Order No.
480.00	SE/4 – Section 21 S/2 – Section 22			

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



SURFACE LOCATION
2503' FSL 130' FWL
SEC 21, T22N, R6W
LAT: 36.123281°N
LONG: 107.482085°W
DATUM: NAD1927

LAT: 36.123296°N
LONG: 107.482690°W
DATUM: NAD1983

POINT-OF-ENTRY
1171' FSL 2294' FEL
SEC 21, T22N, R6W
LAT: 36.119422°N
LONG: 107.472608°W
DATUM: NAD1927

LAT: 36.119438°N
LONG: 107.473212°W
DATUM: NAD1983

END-OF-LATERAL
1173' FSL 330' FEL
SEC 22, T22N, R6W
LAT: 36.118922°N
LONG: 107.448185°W
DATUM: NAD1927

LAT: 36.118938°N
LONG: 107.448789°W
DATUM: NAD1983

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 9/12/2022

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: AUGUST 7, 2019
Date of Survey: JULY 5, 2019

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

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: Enduring Resources IV, LLC **OGRID:** 372286 **Date:** 12/20/2022

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
Terra Wash Com 380H	pending	Sec. 21, T22N, R6W	UL:L SHL:2543' FSL & 175' FWL	650	1,700	1,200
Terra Wash Com 382H	pending	Sec. 21, T22N, R6W	UL:L SHL:2503' FSL & 130' FWL	650	1,700	1,200
S Escavada Unit 366H	pending	Sec. 21, T22N, R6W	UL:L SHL:2556' FSL & 190' FWL	650	1,700	1,200
S Escavada Unit 365H	30-043-21316	Sec. 21, T22N, R6W	UL:L SHL:2529' FSL & 160' FWL	650	1,700	1,200
S Escavada Unit 364H	30-043-21315	Sec. 21, T22N, R6W	UL:L SHL:2516' FSL & 145' FWL	650	1,700	1,200

IV. Central Delivery Point Name: 2-9 Gas Receipt & Trunk 1 Transfer Gas Receipt [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
Terra Wash Com 380H	pending	6/1/2023	6/25/2023	7/20/2023	8/21/2023	8/24/2023
Terra Wash Com 382H	pending	6/3/2023	6/30/2023	7/20/2023	8/21/2023	8/24/2023
S Escavada Unit 366H	pending	6/5/2023	7/6/2023	7/20/2023	8/21/2023	8/24/2023
S Escavada Unit 365H	pending	6/7/2023	7/13/2023	7/20/2023	8/21/2023	8/24/2023
S Escavada Unit 364H	pending	6/9/2023	7/18/2023	7/20/2023	8/21/2023	8/24/2023

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature: Khem Suthiwan
Printed Name: Khem Suthiwan
Title: Regulatory Manager
E-mail Address: ksuthiwan@enduringresources.com
Date: 12/20/2022
Phone: (303) 350-5721

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 space to remove gas particles on the micron scale per typical engineering calculations and/or operational experience. Furthermore, a sales scrubber downstream of the well separators is planned in order to capture any additional liquids if present. All gas is routed to end users 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:
Enduring Resources will minimize venting by:

- Gas will only be vented to the atmosphere to avoid risk of immediate or 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:
Enduring Resources will minimize venting by:

- Separator operation will commence as soon as technically feasible.
- Gas will route immediately to a collection system or 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:
Enduring Resources 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 hole location and 100 ft from the permanent facility storage tanks.

Flowback Strategy
After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, 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 sand 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 the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - 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;
- Liquids removal on lease;
- Reinjection for underground storage;
- Reinjection for temporary storage;
- Reinjection for enhanced oil recovery;
- Fuel cell production; and
- Other alternative beneficial uses approved by the division.

ENDURING RESOURCES IV, LLC
1050 SEVENTEENTH STREET, SUITE 2500
DENVER, COLORADO 80265

DRILLING PLAN: ***Drill, complete, and equip single lateral in the Mancos-H formation***

WELL INFORMATION:

Name: **TERRA WASH CA 382H**
API Number: **not yet assigned**
AFE Number: not yet assigned
ER Well Number: not yet assigned
State: New Mexico
County: Sandoval
Surface Elevation: 7,126 ft ASL (GL) 7,154 ft ASL (KB)
Surface Location: 21-22N-06W Sec-Twn-Rng 2,503 ft FSL 130 ft FWL
36.123296 ° N latitude 107.48269 ° W longitude (NAD 83)
BH Location: 22-22N-06W Sec-Twn-Rng 1,173 ft FSL 330 ft FEL
36.118938 ° N latitude 107.448789 ° W longitude (NAD 83)
Driving Directions: FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM: South on US Hwy 550 for 54.4 miles to MM 97.5; Right (South) on Indian Service Route #46 for 3.5 miles to fork; Right (South) on ISR #36 for 1.1 miles to fork; Left (South) on ISR #46 for 0.2 miles to fork; Right (South) on ISR #46 for 2.6 miles; Right on access road into S Escavada Unit 364H Pad (Wells: SEU 364H, SEU 365H, SEU 366H, TWCA 380H, TWCA 382H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	6,124	1,030	1,030	W	normal
Kirtland	5,989	1,165	1,165	W	normal
Fruitland	5,826	1,328	1,328	G, W	sub
Pictured Cliffs	5,537	1,617	1,618	G, W	sub
Lewis	5,399	1,755	1,757	G, W	normal
Chacra	5,146	2,008	2,019	G, W	normal
Cliff House	4,069	3,085	3,192	G, W	sub
Menefee	4,020	3,134	3,246	G, W	normal
Point Lookout	3,140	4,014	4,208	G, W	normal
Mancos	3,018	4,136	4,341	O,G	sub (~0.38)
Gallup (MNCS_A)	2,735	4,419	4,650	O,G	sub (~0.38)
MNCS_B	2,625	4,529	4,770	O,G	sub (~0.38)
MNCS_C	2,540	4,614	4,862	O,G	sub (~0.38)
MNCS_Cms	2,503	4,651	4,902	O,G	sub (~0.38)
MNCS_D	2,370	4,784	5,050	O,G	sub (~0.38)
MNCS_E	2,225	4,929	5,230	O,G	sub (~0.38)
MNCS_F	2,170	4,984	5,310	O,G	sub (~0.38)
MNCS_G	2,105	5,049	5,422	O,G	sub (~0.38)
MNCS_H	2,040	5,114	5,587	O,G	sub (~0.38)
L.P. TARGET	**2,009**	**5,145**	**5,814**	**O,G**	**sub (~0.38)**
P.O.E. TARGET	**1,980**	**5,174**	**8,408**	**O,G**	**sub (~0.38)**
PROJECTED TD	**1,900**	**5,254**	**15,625**	**O,G**	**sub (~0.38)**

Surface: Nacimiento
Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup
Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations
Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

	Maximum anticipated BH pressure, assuming maximum pressure gradient:	**2,260**	**psi**
	Maximum anticipated surface pressure, assuming partially evacuated hole:	**1,110**	**psi**
Temperature:	**Maximum anticipated BHT is 130° F or less**		

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.

Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs: None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.

MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Ensign

Rig No.: 773

Draw Works: Pacific Rim 1500AC

Mast: ADR 1500S Cantilever Triple (142 ft, 800,000 lbs, 12 lines)

Top Drive: Tesco 500-ESI-1350 (500 ton, 1,350 hp)

Prime Movers: 3 - CAT 3512 (1,475 hp)

Pumps: 3 - Gardner-Denver PZ11 (7,500 psi)

BOPE 1: Cameron single gate ram (pipe) & double gate ram (pipe & blind) (13-5/8", 10,000 psi)

BOPE 2: Cameron annular (13-5/8", 5,000 psi)

Choke 3", 10,000 psi

KB-GL (ft): 28

NOTE: A different rig may be used to drill the well depending on rig availability

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.

2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.

2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.

3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.

4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.

5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for specifics.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.***

0 ft (MD)	**to**	**350 ft (MD)**	**Hole Section Length:**	**350 ft**
0 ft (TVD)	**to**	**350 ft (TVD)**	**Casing Required:**	**350 ft**

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:

Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"

Bit / Motor: Mill Tooth or PDC, no motor

MWD / Survey: No MWD, deviation survey

Logging: None

Casing Specs:

		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	699	116,634	116,634
Min. S.F.					**7.39**	**3.90**	**7.31**	**7.79**

Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: N/A Optimum: N/A Maximum: N/A*

Make-up as per API Buttress Connection running procedure.

Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface

Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:

Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Class G	15.8	1.174	5.15	0.6946	100%	0	414

Calculated cement volumes assume gauge hole and the excess noted in table
Halliburton HALCEM surface cementing blend
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: *Drill as per directional plan to casing setting depth, run casing, cement casing to surface.*

350 ft (MD)	to	3,355 ft (MD)	Hole Section Length:	3,005 ft
350 ft (TVD)	to	3,234 ft (TVD)	Casing Required:	3,355 ft

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	

Hole Size: 12-1/4"
Bit / Motor: PDC w/mud motor
MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional
Logging: None
Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,413	1,295	205,326	205,326
Min. S.F.					**1.43**	**2.72**	**2.75**	**2.21**

Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,400 Optimum: 4,530 Maximum: 5,660*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	70%	0	780
Tail	Class G	15.8	1.148	4.98	20%	2,855	164

Annular Capacity	0.3627	cuft/ft	*9-5/8" casing x 13-3/8" casing annulus*
	0.3132	cuft/ft	*9-5/8" casing x 12-1/4" hole annulus*

Calculated cement volumes assume gauge hole and the excess noted in table
Halliburton ECONOCEM & HALCEM cementing blend
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: *Drill to TD following directional plan, run casing, cement casing to surface.*

3,355 ft (MD)	to	15,625 ft (MD)	Hole Section Length:	12,270 ft
3,234 ft (TVD)	to	5,254 ft (TVD)	Casing Required:	15,625 ft

Estimated KOP:	4,739	ft (MD)	4,500	ft (TVD)
Estimated Landing Point:	5,814	ft (MD)	5,145	ft (TVD)
Estimated Point of Entry:	8,408	ft (MD)	5,174	ft (TVD)
Estimated Lateral Length:	7,217	ft (MD)		

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (FW)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	OBM as contingency

Hole Size: 8-1/2"
Bit / Motor: PDC w/mud motor

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,595	8,992	329,210	329,210
Min. S.F.					**2.87**	**1.18**	**1.66**	**1.35**

Assumptions: Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,470 Optimum: 4,620 Maximum: 5,780*

Casing Summary: Float shoe, 1 jt casing, float collar, 1 jt casing, float collar, 1 jt casing, toe-intitiation sleeve, 20' marker joint, toe-initiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub, casing to surface. **The toe-initiation sleeves must be positioned INSIDE the 330' unit setback.**

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.*
Lateral: 1 centralizer per joint
Curve: 1 centralizer per joint from landing point to KOP
KOP to surf: 1 centralizer per 2 joints

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**
Lead	G:POZ blend	12.4	1.907	9.981	50%	0	944
Tail	G:POZ blend	13.3	1.360	5.999	10%	4,650	2,033

Annular Capacity	0.2691	cuft/ft	*5-1/2" casing x 9-5/8" casing annulus*
	0.2291	cuft/ft	*5-1/2" casing x 8-1/2" hole annulus*

Calculated cement volumes assume gauge hole and the excess noted in table
Halliburton ECONOCEM & EXTENDACEM cementing blend
Notify NMOCD & BLM if cement is not circulated to surface.

Note: The lateral may be drilled outside the applicaple unit setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled outside the setback, the toe initiation sleeve(s) and all perforations will be placed inside the setback. An unorthodox location application is not required because the completed interval will be entirely within the setback as defined and allowed by NMAC 19.15.16.7B(1), NMAC 19.15.16.14B(2), NMAC 19.15.16.15B(2) .

FINISH WELL: ***ND BOP, cap well, RDMO.***

COMPLETION AND PRODUCTION PLAN:

Frac: 40 plug-and-perf stages with 240,000 bbls slickwater fluid and 11,000,000 lbs of proppant (estimated)
Flowback: Flow back through production tubing as pressures allow (ESP may be used for load recovery assitance)
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: TBD
Completion: TBD
Production: TBD

Prepared by: **Alec Bridge** **1/2/2020**

Enduring Resources LLC

San Juan Basin - S Escavada Unit & Terra Wash CA
364H Pad
382H

Wellbore #1

Plan: Design #1

Standard Planning Report

30 December, 2019

Planning Report

Database:	EDM	**Local Co-ordinate Reference:**	Well 382H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 7154.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit & Terra Wash CA	**MD Reference:**	KB @ 7154.0usft (Original Well Elev)
Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project San Juan Basin - S Escavada Unit & Terra Wash CA

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

Site 364H Pad, Sandoval Co., New Mexico

Site Position:		**Northing:**	1,866,466.20 usft	**Latitude:**	36.123331°N
From:	Lat/Long	**Easting:**	1,276,383.87 usft	**Longitude:**	107.482638°W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.73 °

Well 382H

Well Position	**+N/-S**	-12.5 usft	**Northing:**	1,866,453.66 usft	**Latitude:**	36.123296°N
	+E/-W	-15.5 usft	**Easting:**	1,276,368.35 usft	**Longitude:**	107.482690°W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	7,126.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.86	63.03	50,586.44791104

Design Design #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	99.70

Plan Survey Tool Program **Date** 12/30/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	15,624.9	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Planning Report

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Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,192.5	23.77	202.25	2,169.9	-150.0	-61.4	3.00	3.00	0.00	202.25	
4,738.6	23.77	202.25	4,500.0	-1,100.0	-450.0	0.00	0.00	0.00	0.00	382H KOP
5,627.3	77.67	93.06	5,123.9	-1,335.1	4.9	9.70	6.06	-12.29	-112.38	
5,814.1	89.36	92.13	5,145.0	-1,343.5	190.0	6.28	6.26	-0.50	-4.61	382H LP
8,407.6	89.36	92.13	5,174.0	-1,439.8	2,781.6	0.00	0.00	0.00	0.00	382H POE
15,624.9	89.36	92.13	5,254.7	-1,707.9	9,993.5	0.00	0.00	0.00	0.00	382H BHL

Planning Report

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Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 7154.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit & Terra Wash CA	**MD Reference:**	KB @ 7154.0usft (Original Well Elev)
Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
13 3/8"									
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,030.0	0.00	0.00	1,030.0	0.0	0.0	0.0	0.00	0.00	0.00
Ojo Alamo									
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,165.0	0.00	0.00	1,165.0	0.0	0.0	0.0	0.00	0.00	0.00
Kirtland									
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,328.0	0.00	0.00	1,328.0	0.0	0.0	0.0	0.00	0.00	0.00
Fruitland									
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	3.00	202.25	1,500.0	-2.4	-1.0	-0.6	3.00	3.00	0.00
1,600.0	6.00	202.25	1,599.6	-9.7	-4.0	-2.3	3.00	3.00	0.00
1,617.5	6.52	202.25	1,617.0	-11.4	-4.7	-2.7	3.00	3.00	0.00
Pictured Cliffs									
1,700.0	9.00	202.25	1,698.8	-21.8	-8.9	-5.1	3.00	3.00	0.00
1,757.1	10.71	202.25	1,755.0	-30.8	-12.6	-7.2	3.00	3.00	0.00
Lewis									
1,800.0	12.00	202.25	1,797.1	-38.6	-15.8	-9.1	3.00	3.00	0.00
1,900.0	15.00	202.25	1,894.3	-60.2	-24.6	-14.1	3.00	3.00	0.00
2,000.0	18.00	202.25	1,990.2	-86.5	-35.4	-20.3	3.00	3.00	0.00
2,018.8	18.56	202.25	2,008.0	-92.0	-37.6	-21.6	3.00	3.00	0.00
Chacra									
2,100.0	21.00	202.25	2,084.4	-117.4	-48.0	-27.6	3.00	3.00	0.00
2,192.5	23.77	202.25	2,169.9	-150.0	-61.4	-35.2	3.00	3.00	0.00
2,200.0	23.77	202.25	2,176.8	-152.8	-62.5	-35.9	0.00	0.00	0.00
2,300.0	23.77	202.25	2,268.3	-190.1	-77.8	-44.6	0.00	0.00	0.00
2,400.0	23.77	202.25	2,359.8	-227.4	-93.0	-53.4	0.00	0.00	0.00
2,500.0	23.77	202.25	2,451.4	-264.7	-108.3	-62.2	0.00	0.00	0.00
2,600.0	23.77	202.25	2,542.9	-302.1	-123.6	-70.9	0.00	0.00	0.00
2,700.0	23.77	202.25	2,634.4	-339.4	-138.8	-79.7	0.00	0.00	0.00
2,800.0	23.77	202.25	2,725.9	-376.7	-154.1	-88.4	0.00	0.00	0.00
2,900.0	23.77	202.25	2,817.4	-414.0	-169.4	-97.2	0.00	0.00	0.00
3,000.0	23.77	202.25	2,908.9	-451.3	-184.6	-106.0	0.00	0.00	0.00
3,100.0	23.77	202.25	3,000.4	-488.6	-199.9	-114.7	0.00	0.00	0.00
3,192.4	23.77	202.25	3,085.0	-523.1	-214.0	-122.8	0.00	0.00	0.00
Cliff House									
3,200.0	23.77	202.25	3,092.0	-525.9	-215.2	-123.5	0.00	0.00	0.00
3,245.9	23.77	202.25	3,134.0	-543.1	-222.2	-127.5	0.00	0.00	0.00
Menefee									

Planning Report

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Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,300.0	23.77	202.25	3,183.5	-563.2	-230.4	-132.2	0.00	0.00	0.00
3,355.2	23.77	202.25	3,234.0	-583.8	-238.8	-137.1	0.00	0.00	0.00
9 5/8"									
3,400.0	23.77	202.25	3,275.0	-600.5	-245.7	-141.0	0.00	0.00	0.00
3,500.0	23.77	202.25	3,366.5	-637.9	-260.9	-149.8	0.00	0.00	0.00
3,600.0	23.77	202.25	3,458.0	-675.2	-276.2	-158.5	0.00	0.00	0.00
3,700.0	23.77	202.25	3,549.5	-712.5	-291.5	-167.3	0.00	0.00	0.00
3,800.0	23.77	202.25	3,641.0	-749.8	-306.7	-176.0	0.00	0.00	0.00
3,900.0	23.77	202.25	3,732.6	-787.1	-322.0	-184.8	0.00	0.00	0.00
4,000.0	23.77	202.25	3,824.1	-824.4	-337.3	-193.6	0.00	0.00	0.00
4,100.0	23.77	202.25	3,915.6	-861.7	-352.5	-202.3	0.00	0.00	0.00
4,200.0	23.77	202.25	4,007.1	-899.0	-367.8	-211.1	0.00	0.00	0.00
4,207.5	23.77	202.25	4,014.0	-901.9	-368.9	-211.7	0.00	0.00	0.00
Point Lookout									
4,300.0	23.77	202.25	4,098.6	-936.4	-383.1	-219.8	0.00	0.00	0.00
4,340.8	23.77	202.25	4,136.0	-951.6	-389.3	-223.4	0.00	0.00	0.00
Mancos									
4,400.0	23.77	202.25	4,190.1	-973.7	-398.3	-228.6	0.00	0.00	0.00
4,500.0	23.77	202.25	4,281.6	-1,011.0	-413.6	-237.4	0.00	0.00	0.00
4,600.0	23.77	202.25	4,373.2	-1,048.3	-428.8	-246.1	0.00	0.00	0.00
4,650.1	23.77	202.25	4,419.0	-1,067.0	-436.5	-250.5	0.00	0.00	0.00
Gallup (MNCS A)									
4,700.0	23.77	202.25	4,464.7	-1,085.6	-444.1	-254.9	0.00	0.00	0.00
4,738.6	23.77	202.25	4,500.0	-1,100.0	-450.0	-258.3	0.00	0.00	0.00
4,770.2	22.77	194.92	4,529.0	-1,111.8	-454.0	-260.2	9.70	-3.17	-23.23
MNCS_B									
4,800.0	22.16	187.51	4,556.6	-1,123.0	-456.2	-260.5	9.70	-2.06	-24.83
4,861.9	22.02	171.50	4,614.0	-1,146.0	-456.0	-256.4	9.70	-0.23	-25.86
MNCS_C									
4,900.0	22.69	161.93	4,649.2	-1,160.1	-452.7	-250.8	9.70	1.77	-25.11
4,901.9	22.74	161.47	4,651.0	-1,160.8	-452.4	-250.4	9.70	2.53	-24.26
MNCS_Cms									
5,000.0	26.79	140.75	4,740.2	-1,196.0	-432.4	-224.8	9.70	4.13	-21.12
5,049.7	29.75	132.70	4,784.0	-1,213.0	-416.2	-206.0	9.70	5.95	-16.21
MNCS_D									
5,100.0	33.15	125.98	4,826.9	-1,229.5	-395.9	-183.1	9.70	6.77	-13.34
5,200.0	40.73	115.84	4,906.9	-1,259.9	-344.3	-127.2	9.70	7.58	-10.14
5,229.7	43.12	113.43	4,929.0	-1,268.2	-326.3	-108.0	9.70	8.05	-8.11
MNCS_E									
5,300.0	48.95	108.51	4,977.8	-1,286.2	-279.0	-58.4	9.70	8.29	-7.01
5,309.6	49.75	107.91	4,984.0	-1,288.4	-272.1	-51.2	9.70	8.45	-6.28
MNCS_F									
5,400.0	57.53	102.84	5,037.6	-1,307.5	-202.0	21.2	9.70	8.59	-5.60
5,421.8	59.43	101.75	5,049.0	-1,311.5	-183.8	39.7	9.70	8.72	-4.98
MNCS_G									
5,500.0	66.32	98.18	5,084.6	-1,323.5	-115.3	109.3	9.70	8.81	-4.58
5,586.6	74.03	94.63	5,114.0	-1,332.5	-34.4	190.5	9.70	8.91	-4.10
MNCS_H									
5,600.0	75.23	94.11	5,117.5	-1,333.5	-21.6	203.4	9.70	8.95	-3.89
5,627.3	77.67	93.06	5,123.9	-1,335.1	4.9	229.7	9.70	8.96	-3.83
5,700.0	82.22	92.69	5,136.6	-1,338.7	76.4	300.8	6.28	6.26	-0.51
5,800.0	88.48	92.20	5,144.7	-1,343.0	175.9	399.7	6.28	6.26	-0.50

Planning Report

Database:	EDM	**Local Co-ordinate Reference:**	Well 382H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 7154.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit & Terra Wash CA	**MD Reference:**	KB @ 7154.0usft (Original Well Elev)
Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,814.1	89.36	92.13	5,145.0	-1,343.5	190.0	413.6	6.28	6.26	-0.49
5,900.0	89.36	92.13	5,146.0	-1,346.7	275.9	498.8	0.00	0.00	0.00
6,000.0	89.36	92.13	5,147.1	-1,350.4	375.8	597.9	0.00	0.00	0.00
6,100.0	89.36	92.13	5,148.2	-1,354.1	475.7	697.0	0.00	0.00	0.00
6,200.0	89.36	92.13	5,149.3	-1,357.8	575.6	796.1	0.00	0.00	0.00
6,300.0	89.36	92.13	5,150.4	-1,361.5	675.6	895.3	0.00	0.00	0.00
6,400.0	89.36	92.13	5,151.6	-1,365.3	775.5	994.4	0.00	0.00	0.00
6,500.0	89.36	92.13	5,152.7	-1,369.0	875.4	1,093.5	0.00	0.00	0.00
6,600.0	89.36	92.13	5,153.8	-1,372.7	975.3	1,192.6	0.00	0.00	0.00
6,700.0	89.36	92.13	5,154.9	-1,376.4	1,075.3	1,291.8	0.00	0.00	0.00
6,800.0	89.36	92.13	5,156.0	-1,380.1	1,175.2	1,390.9	0.00	0.00	0.00
6,900.0	89.36	92.13	5,157.1	-1,383.8	1,275.1	1,490.0	0.00	0.00	0.00
7,000.0	89.36	92.13	5,158.3	-1,387.5	1,375.0	1,589.1	0.00	0.00	0.00
7,100.0	89.36	92.13	5,159.4	-1,391.3	1,475.0	1,688.2	0.00	0.00	0.00
7,200.0	89.36	92.13	5,160.5	-1,395.0	1,574.9	1,787.4	0.00	0.00	0.00
7,300.0	89.36	92.13	5,161.6	-1,398.7	1,674.8	1,886.5	0.00	0.00	0.00
7,400.0	89.36	92.13	5,162.7	-1,402.4	1,774.7	1,985.6	0.00	0.00	0.00
7,500.0	89.36	92.13	5,163.9	-1,406.1	1,874.7	2,084.7	0.00	0.00	0.00
7,600.0	89.36	92.13	5,165.0	-1,409.8	1,974.6	2,183.9	0.00	0.00	0.00
7,700.0	89.36	92.13	5,166.1	-1,413.5	2,074.5	2,283.0	0.00	0.00	0.00
7,800.0	89.36	92.13	5,167.2	-1,417.3	2,174.4	2,382.1	0.00	0.00	0.00
7,900.0	89.36	92.13	5,168.3	-1,421.0	2,274.4	2,481.2	0.00	0.00	0.00
8,000.0	89.36	92.13	5,169.4	-1,424.7	2,374.3	2,580.3	0.00	0.00	0.00
8,100.0	89.36	92.13	5,170.6	-1,428.4	2,474.2	2,679.5	0.00	0.00	0.00
8,200.0	89.36	92.13	5,171.7	-1,432.1	2,574.1	2,778.6	0.00	0.00	0.00
8,300.0	89.36	92.13	5,172.8	-1,435.8	2,674.1	2,877.7	0.00	0.00	0.00
8,400.0	89.36	92.13	5,173.9	-1,439.5	2,774.0	2,976.8	0.00	0.00	0.00
8,407.6	89.36	92.13	5,174.0	-1,439.8	2,781.6	2,984.4	0.00	0.00	0.00
8,500.0	89.36	92.13	5,175.0	-1,443.2	2,873.9	3,076.0	0.00	0.00	0.00
8,600.0	89.36	92.13	5,176.2	-1,447.0	2,973.8	3,175.1	0.00	0.00	0.00
8,700.0	89.36	92.13	5,177.3	-1,450.7	3,073.8	3,274.2	0.00	0.00	0.00
8,800.0	89.36	92.13	5,178.4	-1,454.4	3,173.7	3,373.3	0.00	0.00	0.00
8,900.0	89.36	92.13	5,179.5	-1,458.1	3,273.6	3,472.4	0.00	0.00	0.00
9,000.0	89.36	92.13	5,180.6	-1,461.8	3,373.5	3,571.6	0.00	0.00	0.00
9,100.0	89.36	92.13	5,181.7	-1,465.5	3,473.5	3,670.7	0.00	0.00	0.00
9,200.0	89.36	92.13	5,182.9	-1,469.2	3,573.4	3,769.8	0.00	0.00	0.00
9,300.0	89.36	92.13	5,184.0	-1,473.0	3,673.3	3,868.9	0.00	0.00	0.00
9,400.0	89.36	92.13	5,185.1	-1,476.7	3,773.2	3,968.1	0.00	0.00	0.00
9,500.0	89.36	92.13	5,186.2	-1,480.4	3,873.2	4,067.2	0.00	0.00	0.00
9,600.0	89.36	92.13	5,187.3	-1,484.1	3,973.1	4,166.3	0.00	0.00	0.00
9,700.0	89.36	92.13	5,188.5	-1,487.8	4,073.0	4,265.4	0.00	0.00	0.00
9,800.0	89.36	92.13	5,189.6	-1,491.5	4,172.9	4,364.5	0.00	0.00	0.00
9,900.0	89.36	92.13	5,190.7	-1,495.2	4,272.9	4,463.7	0.00	0.00	0.00
10,000.0	89.36	92.13	5,191.8	-1,499.0	4,372.8	4,562.8	0.00	0.00	0.00
10,100.0	89.36	92.13	5,192.9	-1,502.7	4,472.7	4,661.9	0.00	0.00	0.00
10,200.0	89.36	92.13	5,194.0	-1,506.4	4,572.6	4,761.0	0.00	0.00	0.00
10,300.0	89.36	92.13	5,195.2	-1,510.1	4,672.6	4,860.2	0.00	0.00	0.00
10,400.0	89.36	92.13	5,196.3	-1,513.8	4,772.5	4,959.3	0.00	0.00	0.00
10,500.0	89.36	92.13	5,197.4	-1,517.5	4,872.4	5,058.4	0.00	0.00	0.00
10,600.0	89.36	92.13	5,198.5	-1,521.2	4,972.3	5,157.5	0.00	0.00	0.00
10,700.0	89.36	92.13	5,199.6	-1,525.0	5,072.2	5,256.6	0.00	0.00	0.00
10,800.0	89.36	92.13	5,200.8	-1,528.7	5,172.2	5,355.8	0.00	0.00	0.00
10,900.0	89.36	92.13	5,201.9	-1,532.4	5,272.1	5,454.9	0.00	0.00	0.00

Planning Report

Database:	EDM	**Local Co-ordinate Reference:**	Well 382H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 7154.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit & Terra Wash CA	**MD Reference:**	KB @ 7154.0usft (Original Well Elev)
Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,000.0	89.36	92.13	5,203.0	-1,536.1	5,372.0	5,554.0	0.00	0.00	0.00
11,100.0	89.36	92.13	5,204.1	-1,539.8	5,471.9	5,653.1	0.00	0.00	0.00
11,200.0	89.36	92.13	5,205.2	-1,543.5	5,571.9	5,752.3	0.00	0.00	0.00
11,300.0	89.36	92.13	5,206.3	-1,547.2	5,671.8	5,851.4	0.00	0.00	0.00
11,400.0	89.36	92.13	5,207.5	-1,550.9	5,771.7	5,950.5	0.00	0.00	0.00
11,500.0	89.36	92.13	5,208.6	-1,554.7	5,871.6	6,049.6	0.00	0.00	0.00
11,600.0	89.36	92.13	5,209.7	-1,558.4	5,971.6	6,148.8	0.00	0.00	0.00
11,700.0	89.36	92.13	5,210.8	-1,562.1	6,071.5	6,247.9	0.00	0.00	0.00
11,800.0	89.36	92.13	5,211.9	-1,565.8	6,171.4	6,347.0	0.00	0.00	0.00
11,900.0	89.36	92.13	5,213.1	-1,569.5	6,271.3	6,446.1	0.00	0.00	0.00
12,000.0	89.36	92.13	5,214.2	-1,573.2	6,371.3	6,545.2	0.00	0.00	0.00
12,100.0	89.36	92.13	5,215.3	-1,576.9	6,471.2	6,644.4	0.00	0.00	0.00
12,200.0	89.36	92.13	5,216.4	-1,580.7	6,571.1	6,743.5	0.00	0.00	0.00
12,300.0	89.36	92.13	5,217.5	-1,584.4	6,671.0	6,842.6	0.00	0.00	0.00
12,400.0	89.36	92.13	5,218.6	-1,588.1	6,771.0	6,941.7	0.00	0.00	0.00
12,500.0	89.36	92.13	5,219.8	-1,591.8	6,870.9	7,040.9	0.00	0.00	0.00
12,600.0	89.36	92.13	5,220.9	-1,595.5	6,970.8	7,140.0	0.00	0.00	0.00
12,700.0	89.36	92.13	5,222.0	-1,599.2	7,070.7	7,239.1	0.00	0.00	0.00
12,800.0	89.36	92.13	5,223.1	-1,602.9	7,170.7	7,338.2	0.00	0.00	0.00
12,900.0	89.36	92.13	5,224.2	-1,606.7	7,270.6	7,437.3	0.00	0.00	0.00
13,000.0	89.36	92.13	5,225.4	-1,610.4	7,370.5	7,536.5	0.00	0.00	0.00
13,100.0	89.36	92.13	5,226.5	-1,614.1	7,470.4	7,635.6	0.00	0.00	0.00
13,200.0	89.36	92.13	5,227.6	-1,617.8	7,570.4	7,734.7	0.00	0.00	0.00
13,300.0	89.36	92.13	5,228.7	-1,621.5	7,670.3	7,833.8	0.00	0.00	0.00
13,400.0	89.36	92.13	5,229.8	-1,625.2	7,770.2	7,933.0	0.00	0.00	0.00
13,500.0	89.36	92.13	5,230.9	-1,628.9	7,870.1	8,032.1	0.00	0.00	0.00
13,600.0	89.36	92.13	5,232.1	-1,632.7	7,970.1	8,131.2	0.00	0.00	0.00
13,700.0	89.36	92.13	5,233.2	-1,636.4	8,070.0	8,230.3	0.00	0.00	0.00
13,800.0	89.36	92.13	5,234.3	-1,640.1	8,169.9	8,329.4	0.00	0.00	0.00
13,900.0	89.36	92.13	5,235.4	-1,643.8	8,269.8	8,428.6	0.00	0.00	0.00
14,000.0	89.36	92.13	5,236.5	-1,647.5	8,369.8	8,527.7	0.00	0.00	0.00
14,100.0	89.36	92.13	5,237.7	-1,651.2	8,469.7	8,626.8	0.00	0.00	0.00
14,200.0	89.36	92.13	5,238.8	-1,654.9	8,569.6	8,725.9	0.00	0.00	0.00
14,300.0	89.36	92.13	5,239.9	-1,658.6	8,669.5	8,825.1	0.00	0.00	0.00
14,400.0	89.36	92.13	5,241.0	-1,662.4	8,769.5	8,924.2	0.00	0.00	0.00
14,500.0	89.36	92.13	5,242.1	-1,666.1	8,869.4	9,023.3	0.00	0.00	0.00
14,600.0	89.36	92.13	5,243.2	-1,669.8	8,969.3	9,122.4	0.00	0.00	0.00
14,700.0	89.36	92.13	5,244.4	-1,673.5	9,069.2	9,221.5	0.00	0.00	0.00
14,800.0	89.36	92.13	5,245.5	-1,677.2	9,169.2	9,320.7	0.00	0.00	0.00
14,900.0	89.36	92.13	5,246.6	-1,680.9	9,269.1	9,419.8	0.00	0.00	0.00
15,000.0	89.36	92.13	5,247.7	-1,684.6	9,369.0	9,518.9	0.00	0.00	0.00
15,100.0	89.36	92.13	5,248.8	-1,688.4	9,468.9	9,618.0	0.00	0.00	0.00
15,200.0	89.36	92.13	5,250.0	-1,692.1	9,568.9	9,717.2	0.00	0.00	0.00
15,300.0	89.36	92.13	5,251.1	-1,695.8	9,668.8	9,816.3	0.00	0.00	0.00
15,400.0	89.36	92.13	5,252.2	-1,699.5	9,768.7	9,915.4	0.00	0.00	0.00
15,500.0	89.36	92.13	5,253.3	-1,703.2	9,868.6	10,014.5	0.00	0.00	0.00
15,600.0	89.36	92.13	5,254.4	-1,706.9	9,968.6	10,113.6	0.00	0.00	0.00
15,624.9	89.36	92.13	5,254.7	-1,707.9	9,993.5	10,138.4	0.00	0.00	0.00

Planning Report

Database:	EDM	**Local Co-ordinate Reference:**	Well 382H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 7154.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit & Terra Wash CA	**MD Reference:**	KB @ 7154.0usft (Original Well Elev)
Site:	364H Pad	**North Reference:**	Grid
Well:	382H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
382H KOP - plan hits target center - Point	0.00	360.00	4,500.0	-1,100.0	-450.0	1,865,353.66	1,275,918.35	36.120259°N	107.484166°W
382H LP - plan hits target center - Point	0.00	360.00	5,145.0	-1,343.5	190.0	1,865,110.16	1,276,558.35	36.119613°N	107.481989°W
382H POE - plan hits target center - Point	0.00	0.00	5,174.0	-1,439.8	2,781.6	1,865,013.84	1,279,149.92	36.119438°N	107.473212°W
382H BHL - plan misses target center by 4.0usft at 15624.4usft MD (5254.7 TVD, -1707.8 N, 9992.9 E) - Point	0.00	360.00	5,254.0	-1,711.7	9,992.8	1,864,741.94	1,286,361.16	36.118938°N	107.448789°W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
350.0	350.0	13 3/8"	13-3/8	17-1/2
3,355.2	3,234.0	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,030.0	1,030.0	Ojo Alamo		0.00	
1,165.0	1,165.0	Kirtland		0.00	
1,328.0	1,328.0	Fruitland		0.00	
1,617.5	1,617.0	Pictured Cliffs		0.00	
1,757.1	1,755.0	Lewis		0.00	
2,018.8	2,008.0	Chacra		0.00	
3,192.4	3,085.0	Cliff House		0.00	
3,245.9	3,134.0	Menefee		0.00	
4,207.5	4,014.0	Point Lookout		0.00	
4,340.8	4,136.0	Mancos		0.00	
4,650.1	4,419.0	Gallup (MNCS A)		0.00	
4,770.2	4,529.0	MNCS_B		0.00	
4,861.9	4,614.0	MNCS_C		0.00	
4,901.9	4,651.0	MNCS_Cms		0.00	
5,049.7	4,784.0	MNCS_D		0.00	
5,229.7	4,929.0	MNCS_E		0.00	
5,309.6	4,984.0	MNCS_F		0.00	
5,421.8	5,049.0	MNCS_G		0.00	
5,586.6	5,114.0	MNCS_H		0.00	

ENDURING RESOURCES IV, LLC
1050 SEVENTEENTH STREET, SUITE 2500
DENVER, COLORADO 80265

DRILLING PLAN: *Drill, complete, and equip single lateral in the Mancos-H formation*

WELL INFORMATION:

Name: **TERRA WASH CA 382H**
API Number: **not yet assigned**
AFE Number: not yet assigned
ER Well Number: not yet assigned
State: New Mexico
County: Sandoval
Surface Elevation: 7,126 ft ASL (GL) 7,154 ft ASL (KB)
Surface Location: 21-22N-06W Sec-Twn-Rng 2,503 ft FSL 130 ft FWL
36.123296 ° N latitude 107.48269 ° W longitude (NAD 83)
BH Location: 22-22N-06W Sec-Twn-Rng 1,173 ft FSL 330 ft FEL
36.118938 ° N latitude 107.448789 ° W longitude (NAD 83)
Driving Directions: FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM: South on US Hwy 550 for 54.4 miles to MM 97.5; Right (South) on Indian Service Route #46 for 3.5 miles to fork; Right (South) on ISR #36 for 1.1 miles to fork; Left (South) on ISR #46 for 0.2 miles to fork; Right (South) on ISR #46 for 2.6 miles; Right on access road into S Escavada Unit 364H Pad (Wells: SEU 364H, SEU 365H, SEU 366H, TWCA 380H, TWCA 382H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	6,124	1,030	1,030	W	normal
Kirtland	5,989	1,165	1,165	W	normal
Fruitland	5,826	1,328	1,328	G, W	sub
Pictured Cliffs	5,537	1,617	1,618	G, W	sub
Lewis	5,399	1,755	1,757	G, W	normal
Chacra	5,146	2,008	2,019	G, W	normal
Cliff House	4,069	3,085	3,192	G, W	sub
Menefee	4,020	3,134	3,246	G, W	normal
Point Lookout	3,140	4,014	4,208	G, W	normal
Mancos	3,018	4,136	4,341	O,G	sub (~0.38)
Gallup (MNCS_A)	2,735	4,419	4,650	O,G	sub (~0.38)
MNCS_B	2,625	4,529	4,770	O,G	sub (~0.38)
MNCS_C	2,540	4,614	4,862	O,G	sub (~0.38)
MNCS_Cms	2,503	4,651	4,902	O,G	sub (~0.38)
MNCS_D	2,370	4,784	5,050	O,G	sub (~0.38)
MNCS_E	2,225	4,929	5,230	O,G	sub (~0.38)
MNCS_F	2,170	4,984	5,310	O,G	sub (~0.38)
MNCS_G	2,105	5,049	5,422	O,G	sub (~0.38)
MNCS_H	2,040	5,114	5,587	O,G	sub (~0.38)
L.P. TARGET	**2,009**	**5,145**	**5,814**	**O,G**	**sub (~0.38)**
P.O.E. TARGET	**1,980**	**5,174**	**8,408**	**O,G**	**sub (~0.38)**
PROJECTED TD	**1,900**	**5,254**	**15,625**	**O,G**	**sub (~0.38)**

Surface: Nacimiento
Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup
Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations
Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

	Maximum anticipated BH pressure, assuming maximum pressure gradient:	**2,260**	**psi**
	Maximum anticipated surface pressure, assuming partially evacuated hole:	**1,110**	**psi**
Temperature:	**Maximum anticipated BHT is 130° F or less**		

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.

Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs: None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.

MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Ensign

Rig No.: 773

Draw Works: Pacific Rim 1500AC

Mast: ADR 1500S Cantilever Triple (142 ft, 800,000 lbs, 12 lines)

Top Drive: Tesco 500-ESI-1350 (500 ton, 1,350 hp)

Prime Movers: 3 - CAT 3512 (1,475 hp)

Pumps: 3 - Gardner-Denver PZ11 (7,500 psi)

BOPE 1: Cameron single gate ram (pipe) & double gate ram (pipe & blind) (13-5/8", 10,000 psi)

BOPE 2: Cameron annular (13-5/8", 5,000 psi)

Choke 3", 10,000 psi

KB-GL (ft): 28

NOTE: A different rig may be used to drill the well depending on rig availability

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.

2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.

2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.

3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.

4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.

5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for specifics.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.***

0 ft (MD)	**to**	**350 ft (MD)**	**Hole Section Length:**	**350 ft**
0 ft (TVD)	**to**	**350 ft (TVD)**	**Casing Required:**	**350 ft**

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:

Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"

Bit / Motor: Mill Tooth or PDC, no motor

MWD / Survey: No MWD, deviation survey

Logging: None

Casing Specs:

		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	699	116,634	116,634
Min. S.F.					**7.39**	**3.90**	**7.31**	**7.79**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *N/A* *Optimum:* *N/A* *Maximum:* *N/A*

Make-up as per API Buttress Connection running procedure.

Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface

Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:

Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Class G	15.8	1.174	5.15	0.6946	100%	0	414

Calculated cement volumes assume gauge hole and the excess noted in table
Halliburton HALCEM surface cementing blend
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: *Drill as per directional plan to casing setting depth, run casing, cement casing to surface.*

350 ft (MD)	to	3,355 ft (MD)	Hole Section Length:	3,005 ft
350 ft (TVD)	to	3,234 ft (TVD)	Casing Required:	3,355 ft

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	

Hole Size: 12-1/4"
Bit / Motor: PDC w/mud motor
MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional
Logging: None
Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,413	1,295	205,326	205,326
Min. S.F.					**1.43**	**2.72**	**2.75**	**2.21**

Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,400 Optimum: 4,530 Maximum: 5,660*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	70%	0	780
Tail	Class G	15.8	1.148	4.98	20%	2,855	164

Annular Capacity	0.3627	cuft/ft	*9-5/8" casing x 13-3/8" casing annulus*
	0.3132	cuft/ft	*9-5/8" casing x 12-1/4" hole annulus*

Calculated cement volumes assume gauge hole and the excess noted in table
Halliburton ECONOCEM & HALCEM cementing blend
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: *Drill to TD following directional plan, run casing, cement casing to surface.*

3,355 ft (MD)	to	15,625 ft (MD)	Hole Section Length:	12,270 ft
3,234 ft (TVD)	to	5,254 ft (TVD)	Casing Required:	15,625 ft

Estimated KOP:	4,739	ft (MD)	4,500	ft (TVD)
Estimated Landing Point:	5,814	ft (MD)	5,145	ft (TVD)
Estimated Point of Entry:	8,408	ft (MD)	5,174	ft (TVD)
Estimated Lateral Length:	7,217	ft (MD)		

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (FW)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	OBM as contingency

Hole Size: 8-1/2"
Bit / Motor: PDC w/mud motor

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,595	8,992	329,210	329,210
Min. S.F.					**2.87**	**1.18**	**1.66**	**1.35**

Assumptions: Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,470 Optimum: 4,620 Maximum: 5,780*

Casing Summary: Float shoe, 1 jt casing, float collar, 1 jt casing, float collar, 1 jt casing, toe-intitiation sleeve, 20' marker joint, toe-initiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub, casing to surface. **The toe-initiation sleeves must be positioned INSIDE the 330' unit setback.**

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.*
Lateral: 1 centralizer per joint
Curve: 1 centralizer per joint from landing point to KOP
KOP to surf: 1 centralizer per 2 joints

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**
Lead	G:POZ blend	12.4	1.907	9.981	50%	0	944
Tail	G:POZ blend	13.3	1.360	5.999	10%	4,650	2,033

Annular Capacity	0.2691	cuft/ft	*5-1/2" casing x 9-5/8" casing annulus*
	0.2291	cuft/ft	*5-1/2" casing x 8-1/2" hole annulus*

Calculated cement volumes assume gauge hole and the excess noted in table
Halliburton ECONOCEM & EXTENDACEM cementing blend
Notify NMOCD & BLM if cement is not circulated to surface.

Note: The lateral may be drilled outside the applicaple unit setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled outside the setback, the toe initiation sleeve(s) and all perforations will be placed inside the setback. An unorthodox location application is not required because the completed interval will be entirely within the setback as defined and allowed by NMAC 19.15.16.7B(1), NMAC 19.15.16.14B(2), NMAC 19.15.16.15B(2) .

FINISH WELL: ***ND BOP, cap well, RDMO.***

COMPLETION AND PRODUCTION PLAN:

Frac: 40 plug-and-perf stages with 240,000 bbls slickwater fluid and 11,000,000 lbs of proppant (estimated)
Flowback: Flow back through production tubing as pressures allow (ESP may be used for load recovery assitance)
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: TBD
Completion: TBD
Production: TBD

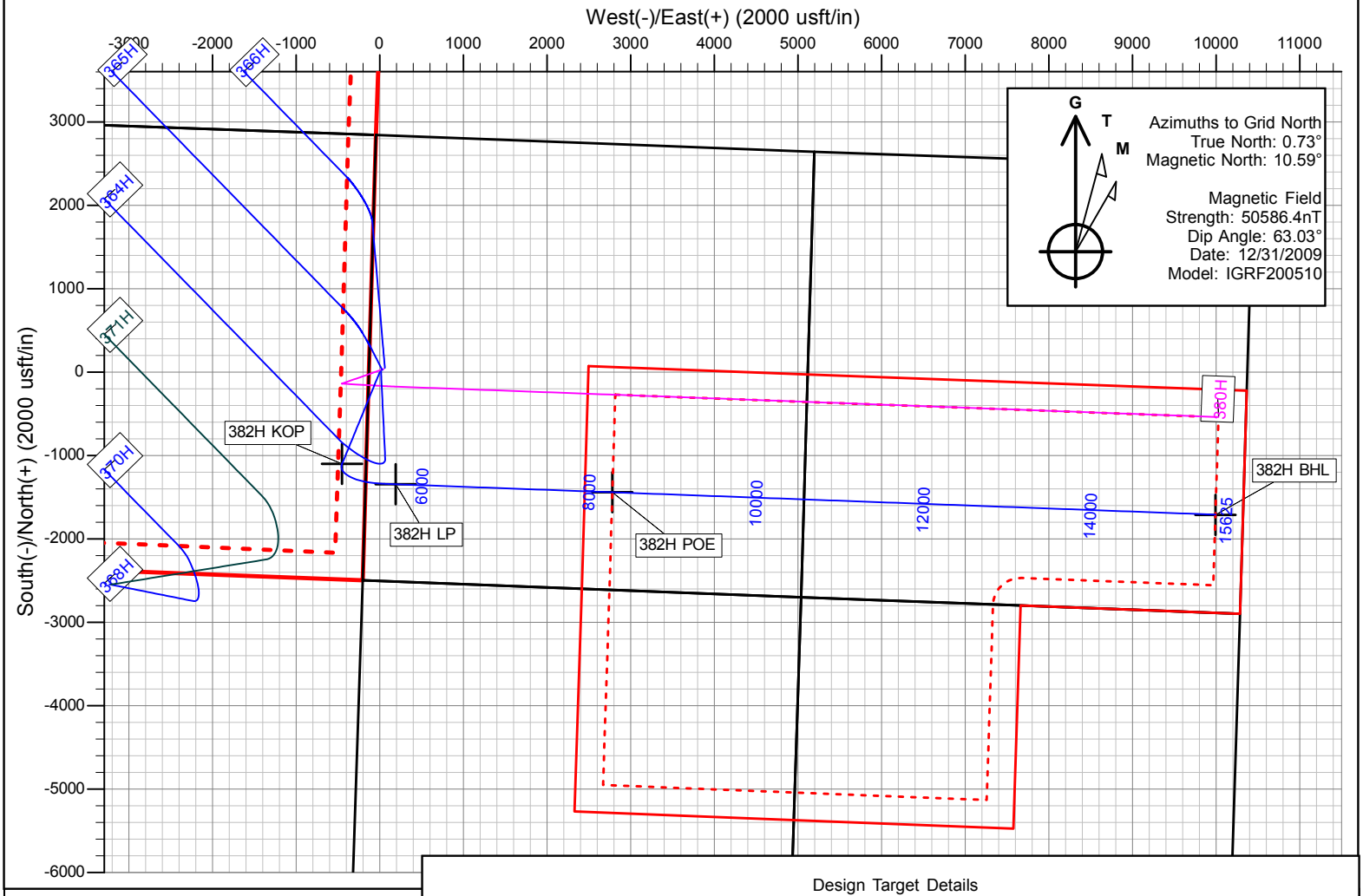
Prepared by: **Alec Bridge** **1/2/2020**

Enduring Resources LLC

Directional Drilling Plan
Plan View & Section View

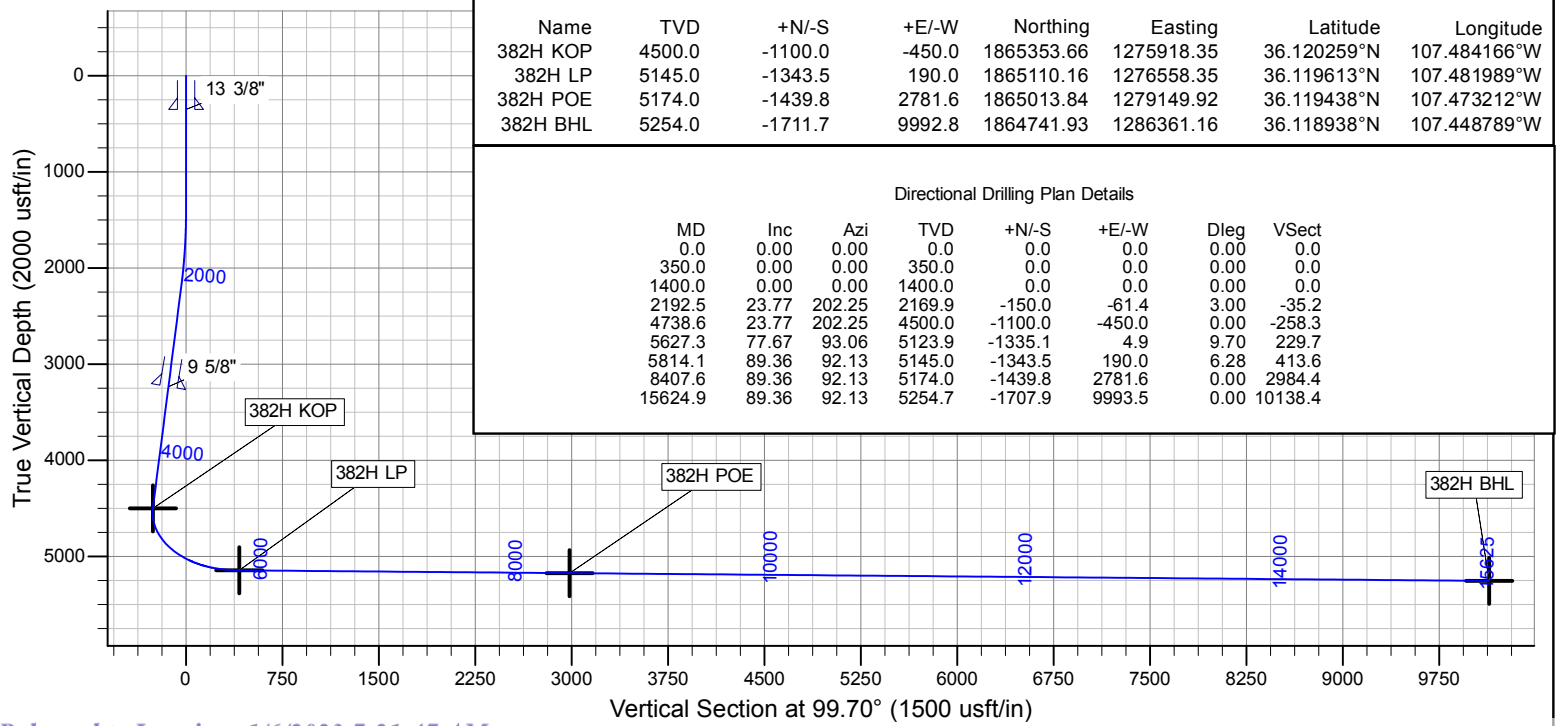
Terra Wash CA 382H

Sandoval Co., New Mexico
T22N, R06W, Sec.21, Lot L
Surface Latitude: 36.123296°N
Surface Longitude: 107.482690°W
Ground Level: 7126.0
Reference Elevation: KB @ 7154.0usft (Original Well Elev)



Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
382H KOP	4500.0	-1100.0	-450.0	1865353.66	1275918.35	36.120259°N	107.484166°W
382H LP	5145.0	-1343.5	190.0	1865110.16	1276558.35	36.119613°N	107.481989°W
382H POE	5174.0	-1439.8	2781.6	1865013.84	1279149.92	36.119438°N	107.473212°W
382H BHL	5254.0	-1711.7	9992.8	1864741.93	1286361.16	36.118938°N	107.448789°W



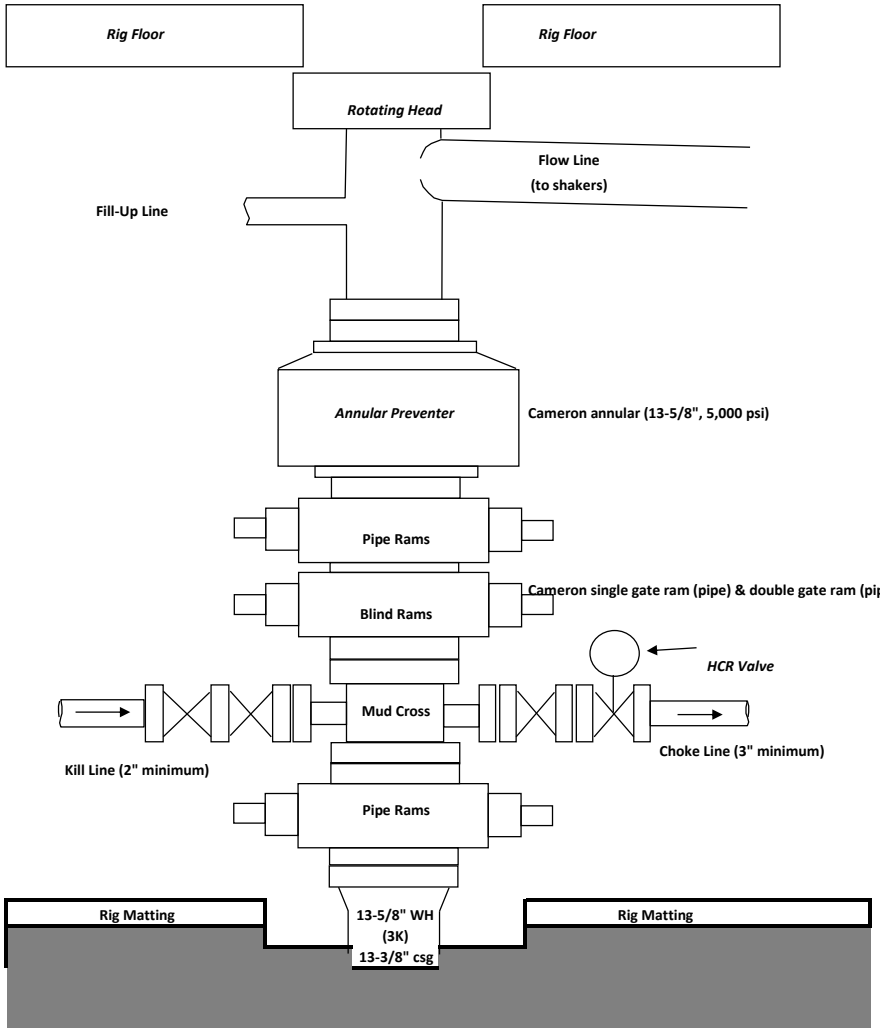
Directional Drilling Plan Details

MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.0
1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.0
2192.5	23.77	202.25	2169.9	-150.0	-61.4	3.00	-35.2
4738.6	23.77	202.25	4500.0	-1100.0	-450.0	0.00	-258.3
5627.3	77.67	93.06	5123.9	-1335.1	4.9	9.70	229.7
5814.1	89.36	92.13	5145.0	-1343.5	190.0	6.28	413.6
8407.6	89.36	92.13	5174.0	-1439.8	2781.6	0.00	2984.4
15624.9	89.36	92.13	5254.7	-1707.9	9993.5	0.00	10138.4

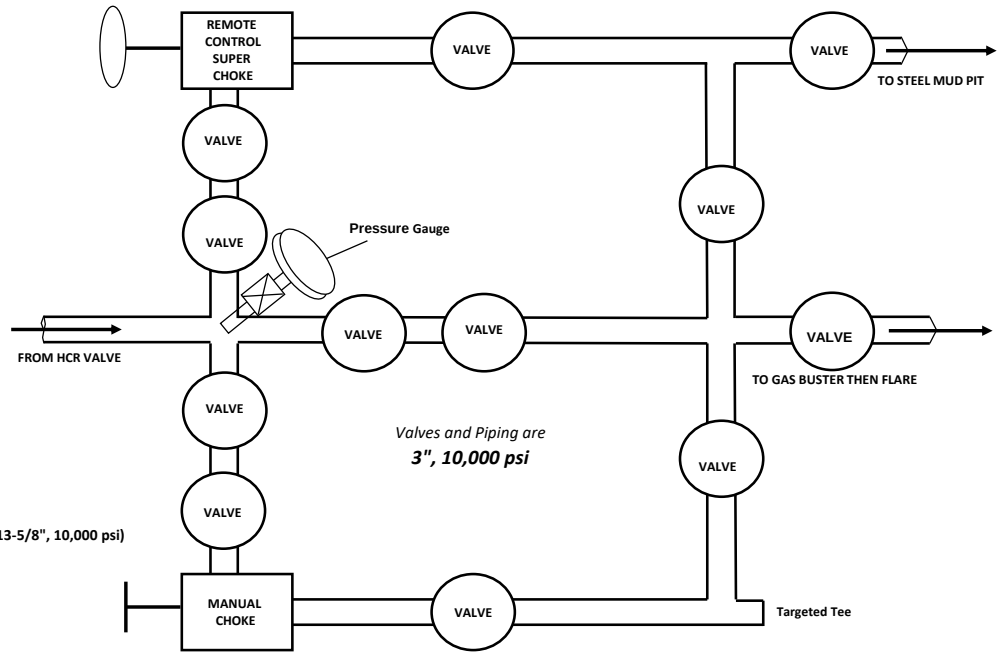
BOPE & CHOKE MANIFOLD DIAGRAMS

NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3,000 PSI MINIMUM.

BOPE



CHOKE MANIFOLD



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 168869

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 168869
	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	12/23/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/23/2022
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	12/23/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	12/23/2022
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/23/2022