Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
N0G13121859

6. If Indian, Allottee or Tribe Name
EASTERN NAVAJO

7. If Unit or CA/Agreement, Name and/or No.
NMNM136328A

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
RODEO UNIT 513H

2. Name of Operator
ENDURING RESOURCES LLC
Contact: LACEY GRANILLO
E-Mail: lgranillo@enduringresources.com

9. API Well No.
30-045-35873-00-X1

3a. Address
1050 17TH STREET SUITE 2500
DENVER, CO 80265

3b. Phone No. (include area code)
Ph: 505-636-9743

10. Field and Pool or Exploratory Area
BASIN MANCOS

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 25 T23N R9W SESW 191FSL 1325FWL
36.191177 N Lat, 107.744934 W Lon

11. County or Parish, State
SAN JUAN COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
BP	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

KP

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

CHANGE IN PLANS

A summary of the requested changes to the approved APD is outlined below. Please reference the attachments for additional details.
C102
Moved BHL from section 6 to section 6
Moved POE from section 36 to section 36
Drilling Program
Directional plan updated based on new POE and BHL
Casing program change
Surface: 9-5/8 to 13-3/8

Adhere to Previous NMOCD Conditions of Approval

NMOCD
REC'D 3/24/20

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #502800 verified by the BLM Well Information System
For ENDURING RESOURCES LLC, sent to the Farmington
Committed to AFMSS for processing by JOE KILLINS on 03/24/2020 (20JK0204SE)

Name *(Printed/Typed)* LACEY GRANILLO — Title PERMITTING SPECIALIST

Signature (Electronic Submission) — Date 02/11/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JOE KILLINS — Title PETROLEUM ENGINEER — Date 03/24/2020

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Farmington

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

AV

Additional data for EC transaction #502800 that would not fit on the form

32. Additional remarks, continued

Intermediate: 7 to 9-5/8
Production: 4-1/2 liner to 5-1/2 long-string
Frac Program
Fluid type: change from nitrogen foam to slick-water
Water volume: increase from not provided to 300,000 bbls (estimated)
Sand weight: increase from 8.2 million lbs to 14 million lbs (estimated)

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
30-045-35873	97232	BASIN MANCOS

[4] Property Code	[5] Property Name	[6] Well Number
321253	RODEO UNIT	513H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372286	ENDURING RESOURCES, LLC	6798'

[10] Surface Location

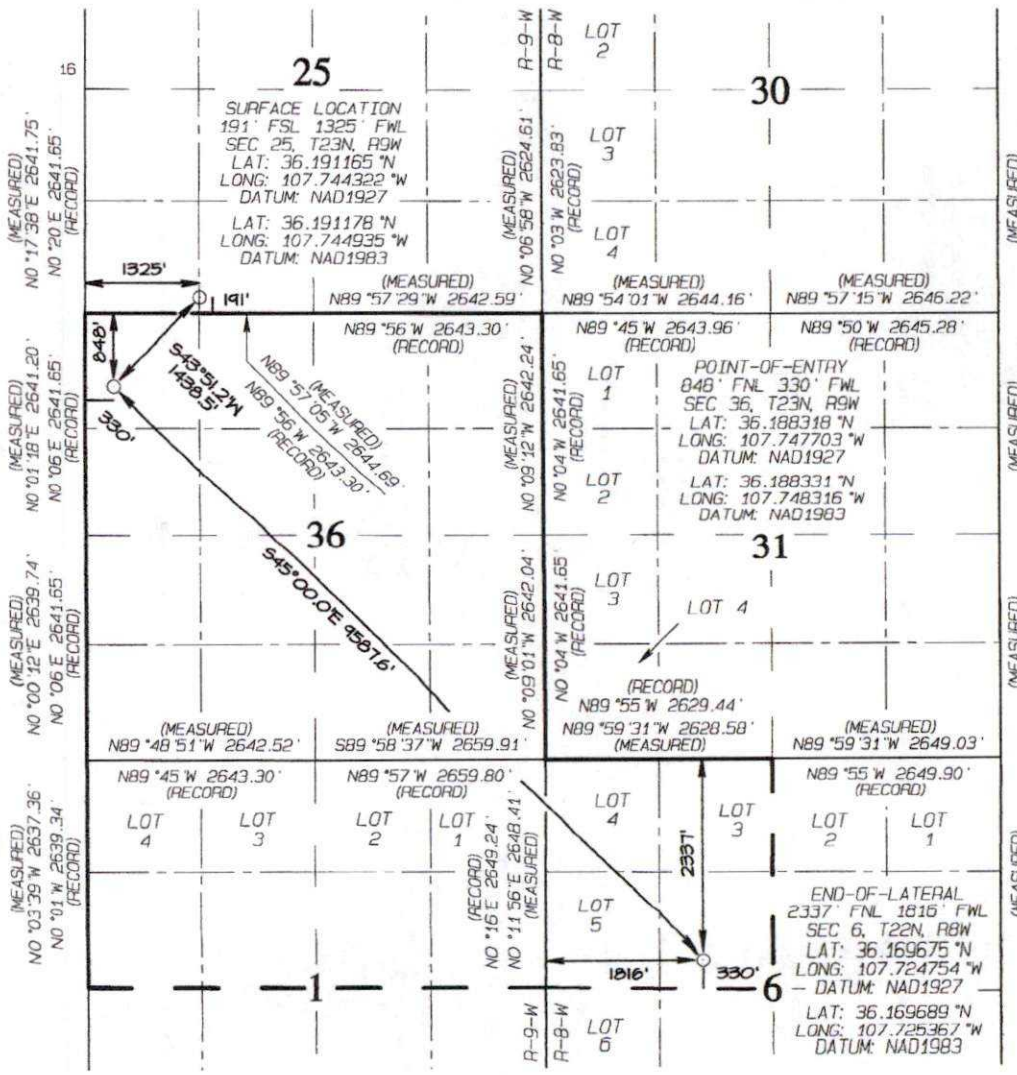
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	25	23N	9W		191	SOUTH	1325	WEST	SAN JUAN

[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
F	6	22N	8W		2337	NORTH	1816	WEST	SAN JUAN

[12] Dedicated Acres		[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
1121.44	Entire Section 36, T23NR9W N/2 - Section 1, T22NR9W NW/4 - Section 6, T22NR8W			R-14313

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 2/11/20

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: APRIL 2, 2019
Survey Date: JANUARY 24, 2017

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

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

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

WELL INFORMATION:

Name: **RODEO UNIT 513H**
API Number: *30-045-35873*
AFE Number: *not yet assigned*
ER Well Number: *not yet assigned*
State: New Mexico
County: San Juan
Surface Elevation: 6,798 ft ASL (GL) 6,823 ft ASL (KB)
Surface Location: 25-23N-09W Sec-Twn-Rng 191 ft FSL 1,325 ft FWL
36.191178 ° N latitude 107.744935 ° W longitude (NAD 83)
BH Location: 6-22N-08W Sec-Twn-Rng 2,337 ft FNL 1,816 ft FWL
36.169689 ° N latitude 107.725367 ° 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 37.8 miles to MM 113.4; Right (Southwest) on CR #7890 for 0.8 miles to fork; Left (South) remaining on CR #7890 for 1.3 miles to 4-way intersectionl; Left (Southeast) remaining on CR #7890 for 0.6 miles to fork; Right (Southwest) on CR #7890 for 1.5 miles to access road; Left on access road for 0.5 mile to Rodeo Unit 511H Pad (Wells: 511H, 512H, 513H, 530H, 531H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	6,436	387	387	W	normal
Kirtland	6,309	514	514	W	normal
Fruitland	6,108	715	715	G, W	sub
Pictured Cliffs	5,759	1,064	1,064	G, W	sub
Lewis	5,506	1,317	1,320	G, W	normal
Chacra	5,376	1,447	1,455	G, W	normal
Cliff House	4,297	2,526	2,646	G, W	sub
Menefee	4,286	2,537	2,658	G, W	normal
Point Lookout	3,311	3,512	3,745	G, W	normal
Mancos	3,140	3,683	3,936	O,G	sub (~0.38)
Gallup (MNCS_A)	2,907	3,916	4,196	O,G	sub (~0.38)
MNCS_B	2,805	4,018	4,309	O,G	sub (~0.38)
MNCS_Cms	2,672	4,151	4,455	O,G	sub (~0.38)
MNCS_D	2,542	4,281	4,599	O,G	sub (~0.38)
MNCS_E	2,404	4,419	4,764	O,G	sub (~0.38)
MNCS_F	2,345	4,478	4,845	O,G	sub (~0.38)
MNCS_G	2,282	4,541	4,944	O,G	sub (~0.38)
MNCS_H	2,229	4,594	5,048	O,G	sub (~0.38)
MNCS_I	2,180	4,643	5,185	O,G	sub (~0.38)
P.O.E. TARGET	**2,155**	**4,668**	**5,376**	**O,G**	**sub (~0.38)**
PROJECTED TD	**2,215**	**4,608**	**14,964**	**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:	**2,010**	**psi**
	Maximum anticipated surface pressure, assuming partially evacuated hole:	**990**	**psi**
Temperature:	**Maximum anticipated BHT is 125° 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: Aztec

Rig No.: 1000

Draw Works: E80 AC 1,500 hp

Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)

Top Drive: NOV IDS-350PE (350 ton)

Prime Movers: 4 - GE Jenbacher Natural Gas Generator

Pumps: 2 - RS F-1600 (7,500 psi)

BOPE 1: Cameron single & double gate rams (13-5/8", 3,000 psi)

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

Choke Cameron (4", 10,000 psi)

KB-GL (ft): 25

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	574	116,634	116,634
Min. S.F.					**7.39**	**4.76**	**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	2,770 ft (MD)	Hole Section Length:	2,420 ft
350 ft (TVD)	to	2,637 ft (TVD)	Casing Required:	2,770 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					1,152	1,141	186,961	186,961
Min. S.F.					**1.75**	**3.09**	**3.02**	**2.42**

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	623
Tail	Class G	15.8	1.148	4.98	20%	2,270	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.***

2,770 ft (MD)	to	14,964 ft (MD)	Hole Section Length:	12,194 ft
2,637 ft (TVD)	to	4,608 ft (TVD)	Casing Required:	14,964 ft

Estimated KOP:	4,317	ft (MD)	4,025	ft (TVD)
Estimated Landing Point (P.O.E.):	5,376	ft (MD)	4,668	ft (TVD)
Estimated Lateral Length:	9,588	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					2,276	8,931	319,514	319,514
Min. S.F.					**3.28**	**1.19**	**1.71**	**1.39**

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	843
Tail	G:POZ blend	13.3	1.360	5.999	10%	4,196	1,995

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) . Rodeo Unit Order Number is R-14313.

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

COMPLETION AND PRODUCTION PLAN:

Frac: 55 plug-and-perf stages with 330,000 bbls slickwater fluid and 15,000,000 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** **2/7/2020**

Enduring Resources LLC

San Juan Basin - Rodeo Unit
511H Pad
513H

Wellbore #1

Plan: Design #1

Standard Planning Report

06 February, 2020

Database:	EDM	**Local Co-ordinate Reference:**	Well 513H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6823.0usft (Original Well Elev)
Project:	San Juan Basin - Rodeo Unit	**MD Reference:**	KB @ 6823.0usft (Original Well Elev)
Site:	511H Pad	**North Reference:**	Grid
Well:	513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project San Juan Basin - Rodeo Unit

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

Site 511H Pad, San Juan County, New Mexico

Site Position:		**Northing:**	1,888,898.35 usft	**Latitude:**	36.191179°N
From:	Lat/Long	**Easting:**	2,749,215.36 usft	**Longitude:**	107.744800°W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.05 °

Well 513H

Well Position	**+N/-S**	-0.4 usft	**Northing:**	1,888,897.95 usft	**Latitude:**	36.191178°N
	+E/-W	-39.8 usft	**Easting:**	2,749,175.53 usft	**Longitude:**	107.744935°W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	6,798.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.98	63.04	50,592.63119344

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	143.51

Plan Survey Tool Program **Date** 2/5/2020

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	14,963.5	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

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	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,774.2	26.23	251.22	1,744.0	-63.3	-186.1	3.00	3.00	0.00	251.22	
4,317.0	26.23	251.22	4,025.0	-425.0	-1,250.0	0.00	0.00	0.00	0.00	513H KOP
4,950.6	55.54	148.77	4,544.7	-726.0	-1,246.8	10.19	4.63	-16.17	-116.96	
5,375.8	90.36	135.00	4,668.0	-1,037.3	-996.7	8.73	8.19	-3.24	-23.23	513H POE
14,963.5	90.36	135.00	4,608.0	-7,816.6	5,782.7	0.00	0.00	0.00	0.00	513H BHL

Database:	EDM	**Local Co-ordinate Reference:**	Well 513H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6823.0usft (Original Well Elev)
Project:	San Juan Basin - Rodeo Unit	**MD Reference:**	KB @ 6823.0usft (Original Well Elev)
Site:	511H Pad	**North Reference:**	Grid
Well:	513H	**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"									
387.0	0.00	0.00	387.0	0.0	0.0	0.0	0.00	0.00	0.00
Ojo Alamo									
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
514.0	0.00	0.00	514.0	0.0	0.0	0.0	0.00	0.00	0.00
Kirtland									
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
715.0	0.00	0.00	715.0	0.0	0.0	0.0	0.00	0.00	0.00
Fruitland									
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	3.00	251.22	1,000.0	-0.8	-2.5	-0.8	3.00	3.00	0.00
1,064.2	4.93	251.22	1,064.0	-2.3	-6.7	-2.1	3.00	3.00	0.00
Pictured Cliffs									
1,100.0	6.00	251.22	1,099.6	-3.4	-9.9	-3.2	3.00	3.00	0.00
1,200.0	9.00	251.22	1,198.8	-7.6	-22.3	-7.2	3.00	3.00	0.00
1,300.0	12.00	251.22	1,297.1	-13.4	-39.5	-12.7	3.00	3.00	0.00
1,320.4	12.61	251.22	1,317.0	-14.8	-43.6	-14.0	3.00	3.00	0.00
Lewis									
1,400.0	15.00	251.22	1,394.3	-20.9	-61.6	-19.8	3.00	3.00	0.00
1,454.8	16.64	251.22	1,447.0	-25.8	-75.7	-24.3	3.00	3.00	0.00
Chacra									
1,500.0	18.00	251.22	1,490.2	-30.1	-88.5	-28.4	3.00	3.00	0.00
1,600.0	21.00	251.22	1,584.4	-40.8	-120.1	-38.6	3.00	3.00	0.00
1,700.0	24.00	251.22	1,676.8	-53.2	-156.3	-50.2	3.00	3.00	0.00
1,774.2	26.23	251.22	1,744.0	-63.3	-186.1	-59.8	3.00	3.00	0.00
1,800.0	26.23	251.22	1,767.1	-67.0	-196.9	-63.3	0.00	0.00	0.00
1,900.0	26.23	251.22	1,856.8	-81.2	-238.8	-76.7	0.00	0.00	0.00
2,000.0	26.23	251.22	1,946.5	-95.4	-280.6	-90.2	0.00	0.00	0.00
2,100.0	26.23	251.22	2,036.3	-109.6	-322.5	-103.6	0.00	0.00	0.00
2,200.0	26.23	251.22	2,126.0	-123.9	-364.3	-117.1	0.00	0.00	0.00
2,300.0	26.23	251.22	2,215.7	-138.1	-406.1	-130.5	0.00	0.00	0.00
2,400.0	26.23	251.22	2,305.4	-152.3	-448.0	-144.0	0.00	0.00	0.00
2,500.0	26.23	251.22	2,395.1	-166.5	-489.8	-157.4	0.00	0.00	0.00
2,600.0	26.23	251.22	2,484.8	-180.8	-531.6	-170.9	0.00	0.00	0.00
2,645.9	26.23	251.22	2,526.0	-187.3	-550.9	-177.1	0.00	0.00	0.00
Cliff House									
2,658.2	26.23	251.22	2,537.0	-189.0	-556.0	-178.7	0.00	0.00	0.00
Menefee									
2,700.0	26.23	251.22	2,574.5	-195.0	-573.5	-184.3	0.00	0.00	0.00
2,769.7	26.23	251.22	2,637.0	-204.9	-602.6	-193.7	0.00	0.00	0.00
9 5/8"									
2,800.0	26.23	251.22	2,664.2	-209.2	-615.3	-197.8	0.00	0.00	0.00
2,900.0	26.23	251.22	2,753.9	-223.4	-657.2	-211.2	0.00	0.00	0.00
3,000.0	26.23	251.22	2,843.6	-237.7	-699.0	-224.7	0.00	0.00	0.00
3,100.0	26.23	251.22	2,933.3	-251.9	-740.8	-238.1	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 513H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6823.0usft (Original Well Elev)
Project:	San Juan Basin - Rodeo Unit	**MD Reference:**	KB @ 6823.0usft (Original Well Elev)
Site:	511H Pad	**North Reference:**	Grid
Well:	513H	**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)
3,200.0	26.23	251.22	3,023.0	-266.1	-782.7	-251.6	0.00	0.00	0.00
3,300.0	26.23	251.22	3,112.7	-280.3	-824.5	-265.0	0.00	0.00	0.00
3,400.0	26.23	251.22	3,202.4	-294.6	-866.4	-278.5	0.00	0.00	0.00
3,500.0	26.23	251.22	3,292.1	-308.8	-908.2	-291.9	0.00	0.00	0.00
3,600.0	26.23	251.22	3,381.8	-323.0	-950.0	-305.3	0.00	0.00	0.00
3,700.0	26.23	251.22	3,471.5	-337.2	-991.9	-318.8	0.00	0.00	0.00
3,745.1	26.23	251.22	3,512.0	-343.7	-1,010.7	-324.9	0.00	0.00	0.00
Point Lookout									
3,800.0	26.23	251.22	3,561.3	-351.5	-1,033.7	-332.2	0.00	0.00	0.00
3,900.0	26.23	251.22	3,651.0	-365.7	-1,075.5	-345.7	0.00	0.00	0.00
3,935.7	26.23	251.22	3,683.0	-370.8	-1,090.5	-350.5	0.00	0.00	0.00
Mancos									
4,000.0	26.23	251.22	3,740.7	-379.9	-1,117.4	-359.1	0.00	0.00	0.00
4,100.0	26.23	251.22	3,830.4	-394.1	-1,159.2	-372.6	0.00	0.00	0.00
4,195.5	26.23	251.22	3,916.0	-407.7	-1,199.2	-385.4	0.00	0.00	0.00
Gallup (MNCS_A)									
4,200.0	26.23	251.22	3,920.1	-408.4	-1,201.1	-386.0	0.00	0.00	0.00
4,300.0	26.23	251.22	4,009.8	-422.6	-1,242.9	-399.5	0.00	0.00	0.00
4,309.2	26.23	251.22	4,018.0	-423.9	-1,246.7	-400.7	0.00	0.00	0.00
MNCS_B									
4,317.0	26.23	251.22	4,025.0	-425.0	-1,250.0	-401.8	0.00	0.00	0.00
4,400.0	23.54	232.04	4,100.4	-441.1	-1,280.5	-406.9	10.19	-3.23	-23.10
4,455.0	23.24	217.90	4,151.0	-456.5	-1,295.8	-403.7	10.19	-0.54	-25.70
MNCS_Cms									
4,500.0	23.94	206.56	4,192.2	-471.6	-1,305.4	-397.2	10.19	1.54	-25.22
4,598.5	27.99	185.41	4,281.0	-512.7	-1,316.5	-370.9	10.19	4.11	-21.47
MNCS_D									
4,600.0	28.07	185.14	4,282.3	-513.3	-1,316.6	-370.3	10.19	5.56	-18.18
4,700.0	34.63	170.03	4,367.8	-564.9	-1,313.8	-327.2	10.19	6.56	-15.11
4,764.2	39.58	162.90	4,419.0	-602.5	-1,304.6	-291.6	10.19	7.70	-11.10
MNCS_E									
4,800.0	42.49	159.56	4,446.0	-624.7	-1,297.0	-269.2	10.19	8.15	-9.33
4,844.8	46.26	155.88	4,478.0	-653.6	-1,285.1	-238.8	10.19	8.42	-8.22
MNCS_F									
4,900.0	51.05	151.94	4,514.5	-690.8	-1,266.8	-198.1	10.19	8.68	-7.14
4,944.1	54.96	149.16	4,541.0	-721.5	-1,249.5	-163.1	10.19	8.87	-6.30
MNCS_G									
4,950.6	55.54	148.77	4,544.7	-726.0	-1,246.8	-157.8	10.19	8.95	-5.95
5,000.0	59.52	146.80	4,571.2	-761.3	-1,224.5	-116.3	8.73	8.06	-3.99
5,047.7	63.39	145.04	4,594.0	-796.0	-1,201.1	-74.4	8.73	8.11	-3.68
MNCS_H									
5,100.0	67.66	143.25	4,615.7	-834.5	-1,173.2	-26.8	8.73	8.15	-3.43
5,184.5	74.59	140.56	4,643.0	-897.4	-1,123.8	53.1	8.73	8.20	-3.18
MNCS_I									
5,200.0	75.86	140.09	4,646.9	-908.9	-1,114.3	68.0	8.73	8.22	-3.04
5,300.0	84.10	137.16	4,664.3	-982.7	-1,049.2	166.0	8.73	8.24	-2.93
5,375.8	90.36	135.00	4,668.0	-1,037.3	-996.7	241.1	8.73	8.25	-2.85
5,400.0	90.36	135.00	4,667.8	-1,054.4	-979.6	265.0	0.00	0.00	0.00
5,500.0	90.36	135.00	4,667.2	-1,125.1	-908.9	363.9	0.00	0.00	0.00
5,600.0	90.36	135.00	4,666.6	-1,195.8	-838.2	462.8	0.00	0.00	0.00
5,700.0	90.36	135.00	4,666.0	-1,266.5	-767.5	561.7	0.00	0.00	0.00
5,800.0	90.36	135.00	4,665.3	-1,337.2	-696.8	660.6	0.00	0.00	0.00
5,900.0	90.36	135.00	4,664.7	-1,407.9	-626.1	759.5	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 513H
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Project:	San Juan Basin - Rodeo Unit	**MD Reference:**	KB @ 6823.0usft (Original Well Elev)
Site:	511H Pad	**North Reference:**	Grid
Well:	513H	**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)
6,000.0	90.36	135.00	4,664.1	-1,478.6	-555.4	858.4	0.00	0.00	0.00
6,100.0	90.36	135.00	4,663.5	-1,549.3	-484.7	957.3	0.00	0.00	0.00
6,200.0	90.36	135.00	4,662.8	-1,620.0	-414.0	1,056.2	0.00	0.00	0.00
6,300.0	90.36	135.00	4,662.2	-1,690.7	-343.2	1,155.1	0.00	0.00	0.00
6,400.0	90.36	135.00	4,661.6	-1,761.4	-272.5	1,254.0	0.00	0.00	0.00
6,500.0	90.36	135.00	4,661.0	-1,832.2	-201.8	1,352.9	0.00	0.00	0.00
6,600.0	90.36	135.00	4,660.3	-1,902.9	-131.1	1,451.8	0.00	0.00	0.00
6,700.0	90.36	135.00	4,659.7	-1,973.6	-60.4	1,550.7	0.00	0.00	0.00
6,800.0	90.36	135.00	4,659.1	-2,044.3	10.3	1,649.6	0.00	0.00	0.00
6,900.0	90.36	135.00	4,658.5	-2,115.0	81.0	1,748.5	0.00	0.00	0.00
7,000.0	90.36	135.00	4,657.8	-2,185.7	151.7	1,847.4	0.00	0.00	0.00
7,100.0	90.36	135.00	4,657.2	-2,256.4	222.4	1,946.3	0.00	0.00	0.00
7,200.0	90.36	135.00	4,656.6	-2,327.1	293.1	2,045.2	0.00	0.00	0.00
7,300.0	90.36	135.00	4,656.0	-2,397.8	363.9	2,144.1	0.00	0.00	0.00
7,400.0	90.36	135.00	4,655.3	-2,468.5	434.6	2,243.0	0.00	0.00	0.00
7,500.0	90.36	135.00	4,654.7	-2,539.2	505.3	2,341.9	0.00	0.00	0.00
7,600.0	90.36	135.00	4,654.1	-2,609.9	576.0	2,440.7	0.00	0.00	0.00
7,700.0	90.36	135.00	4,653.5	-2,680.7	646.7	2,539.6	0.00	0.00	0.00
7,800.0	90.36	135.00	4,652.8	-2,751.4	717.4	2,638.5	0.00	0.00	0.00
7,900.0	90.36	135.00	4,652.2	-2,822.1	788.1	2,737.4	0.00	0.00	0.00
8,000.0	90.36	135.00	4,651.6	-2,892.8	858.8	2,836.3	0.00	0.00	0.00
8,100.0	90.36	135.00	4,651.0	-2,963.5	929.5	2,935.2	0.00	0.00	0.00
8,200.0	90.36	135.00	4,650.3	-3,034.2	1,000.2	3,034.1	0.00	0.00	0.00
8,300.0	90.36	135.00	4,649.7	-3,104.9	1,071.0	3,133.0	0.00	0.00	0.00
8,400.0	90.36	135.00	4,649.1	-3,175.6	1,141.7	3,231.9	0.00	0.00	0.00
8,500.0	90.36	135.00	4,648.4	-3,246.3	1,212.4	3,330.8	0.00	0.00	0.00
8,600.0	90.36	135.00	4,647.8	-3,317.0	1,283.1	3,429.7	0.00	0.00	0.00
8,700.0	90.36	135.00	4,647.2	-3,387.7	1,353.8	3,528.6	0.00	0.00	0.00
8,800.0	90.36	135.00	4,646.6	-3,458.5	1,424.5	3,627.5	0.00	0.00	0.00
8,900.0	90.36	135.00	4,645.9	-3,529.2	1,495.2	3,726.4	0.00	0.00	0.00
9,000.0	90.36	135.00	4,645.3	-3,599.9	1,565.9	3,825.3	0.00	0.00	0.00
9,100.0	90.36	135.00	4,644.7	-3,670.6	1,636.6	3,924.2	0.00	0.00	0.00
9,200.0	90.36	135.00	4,644.1	-3,741.3	1,707.3	4,023.1	0.00	0.00	0.00
9,300.0	90.36	135.00	4,643.4	-3,812.0	1,778.1	4,122.0	0.00	0.00	0.00
9,400.0	90.36	135.00	4,642.8	-3,882.7	1,848.8	4,220.9	0.00	0.00	0.00
9,500.0	90.36	135.00	4,642.2	-3,953.4	1,919.5	4,319.8	0.00	0.00	0.00
9,600.0	90.36	135.00	4,641.6	-4,024.1	1,990.2	4,418.7	0.00	0.00	0.00
9,700.0	90.36	135.00	4,640.9	-4,094.8	2,060.9	4,517.6	0.00	0.00	0.00
9,800.0	90.36	135.00	4,640.3	-4,165.5	2,131.6	4,616.5	0.00	0.00	0.00
9,900.0	90.36	135.00	4,639.7	-4,236.3	2,202.3	4,715.4	0.00	0.00	0.00
10,000.0	90.36	135.00	4,639.1	-4,307.0	2,273.0	4,814.3	0.00	0.00	0.00
10,100.0	90.36	135.00	4,638.4	-4,377.7	2,343.7	4,913.2	0.00	0.00	0.00
10,200.0	90.36	135.00	4,637.8	-4,448.4	2,414.4	5,012.1	0.00	0.00	0.00
10,300.0	90.36	135.00	4,637.2	-4,519.1	2,485.2	5,111.0	0.00	0.00	0.00
10,400.0	90.36	135.00	4,636.6	-4,589.8	2,555.9	5,209.9	0.00	0.00	0.00
10,500.0	90.36	135.00	4,635.9	-4,660.5	2,626.6	5,308.8	0.00	0.00	0.00
10,600.0	90.36	135.00	4,635.3	-4,731.2	2,697.3	5,407.7	0.00	0.00	0.00
10,700.0	90.36	135.00	4,634.7	-4,801.9	2,768.0	5,506.6	0.00	0.00	0.00
10,800.0	90.36	135.00	4,634.1	-4,872.6	2,838.7	5,605.5	0.00	0.00	0.00
10,900.0	90.36	135.00	4,633.4	-4,943.3	2,909.4	5,704.4	0.00	0.00	0.00
11,000.0	90.36	135.00	4,632.8	-5,014.0	2,980.1	5,803.3	0.00	0.00	0.00
11,100.0	90.36	135.00	4,632.2	-5,084.8	3,050.8	5,902.2	0.00	0.00	0.00
11,200.0	90.36	135.00	4,631.6	-5,155.5	3,121.5	6,001.1	0.00	0.00	0.00
11,300.0	90.36	135.00	4,630.9	-5,226.2	3,192.2	6,100.0	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 513H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6823.0usft (Original Well Elev)
Project:	San Juan Basin - Rodeo Unit	**MD Reference:**	KB @ 6823.0usft (Original Well Elev)
Site:	511H Pad	**North Reference:**	Grid
Well:	513H	**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)
11,400.0	90.36	135.00	4,630.3	-5,296.9	3,263.0	6,198.9	0.00	0.00	0.00
11,500.0	90.36	135.00	4,629.7	-5,367.6	3,333.7	6,297.8	0.00	0.00	0.00
11,600.0	90.36	135.00	4,629.0	-5,438.3	3,404.4	6,396.7	0.00	0.00	0.00
11,700.0	90.36	135.00	4,628.4	-5,509.0	3,475.1	6,495.6	0.00	0.00	0.00
11,800.0	90.36	135.00	4,627.8	-5,579.7	3,545.8	6,594.5	0.00	0.00	0.00
11,900.0	90.36	135.00	4,627.2	-5,650.4	3,616.5	6,693.4	0.00	0.00	0.00
12,000.0	90.36	135.00	4,626.5	-5,721.1	3,687.2	6,792.3	0.00	0.00	0.00
12,100.0	90.36	135.00	4,625.9	-5,791.8	3,757.9	6,891.2	0.00	0.00	0.00
12,200.0	90.36	135.00	4,625.3	-5,862.6	3,828.6	6,990.1	0.00	0.00	0.00
12,300.0	90.36	135.00	4,624.7	-5,933.3	3,899.3	7,089.0	0.00	0.00	0.00
12,400.0	90.36	135.00	4,624.0	-6,004.0	3,970.1	7,187.9	0.00	0.00	0.00
12,500.0	90.36	135.00	4,623.4	-6,074.7	4,040.8	7,286.8	0.00	0.00	0.00
12,600.0	90.36	135.00	4,622.8	-6,145.4	4,111.5	7,385.6	0.00	0.00	0.00
12,700.0	90.36	135.00	4,622.2	-6,216.1	4,182.2	7,484.5	0.00	0.00	0.00
12,800.0	90.36	135.00	4,621.5	-6,286.8	4,252.9	7,583.4	0.00	0.00	0.00
12,900.0	90.36	135.00	4,620.9	-6,357.5	4,323.6	7,682.3	0.00	0.00	0.00
13,000.0	90.36	135.00	4,620.3	-6,428.2	4,394.3	7,781.2	0.00	0.00	0.00
13,100.0	90.36	135.00	4,619.7	-6,498.9	4,465.0	7,880.1	0.00	0.00	0.00
13,200.0	90.36	135.00	4,619.0	-6,569.6	4,535.7	7,979.0	0.00	0.00	0.00
13,300.0	90.36	135.00	4,618.4	-6,640.3	4,606.4	8,077.9	0.00	0.00	0.00
13,400.0	90.36	135.00	4,617.8	-6,711.1	4,677.2	8,176.8	0.00	0.00	0.00
13,500.0	90.36	135.00	4,617.2	-6,781.8	4,747.9	8,275.7	0.00	0.00	0.00
13,600.0	90.36	135.00	4,616.5	-6,852.5	4,818.6	8,374.6	0.00	0.00	0.00
13,700.0	90.36	135.00	4,615.9	-6,923.2	4,889.3	8,473.5	0.00	0.00	0.00
13,800.0	90.36	135.00	4,615.3	-6,993.9	4,960.0	8,572.4	0.00	0.00	0.00
13,900.0	90.36	135.00	4,614.7	-7,064.6	5,030.7	8,671.3	0.00	0.00	0.00
14,000.0	90.36	135.00	4,614.0	-7,135.3	5,101.4	8,770.2	0.00	0.00	0.00
14,100.0	90.36	135.00	4,613.4	-7,206.0	5,172.1	8,869.1	0.00	0.00	0.00
14,200.0	90.36	135.00	4,612.8	-7,276.7	5,242.8	8,968.0	0.00	0.00	0.00
14,300.0	90.36	135.00	4,612.2	-7,347.4	5,313.5	9,066.9	0.00	0.00	0.00
14,400.0	90.36	135.00	4,611.5	-7,418.1	5,384.3	9,165.8	0.00	0.00	0.00
14,500.0	90.36	135.00	4,610.9	-7,488.9	5,455.0	9,264.7	0.00	0.00	0.00
14,600.0	90.36	135.00	4,610.3	-7,559.6	5,525.7	9,363.6	0.00	0.00	0.00
14,700.0	90.36	135.00	4,609.6	-7,630.3	5,596.4	9,462.5	0.00	0.00	0.00
14,800.0	90.36	135.00	4,609.0	-7,701.0	5,667.1	9,561.4	0.00	0.00	0.00
14,900.0	90.36	135.00	4,608.4	-7,771.7	5,737.8	9,660.3	0.00	0.00	0.00
14,963.5	90.36	135.00	4,608.0	-7,816.6	5,782.7	9,723.1	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 513H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6823.0usft (Original Well Elev)
Project:	San Juan Basin - Rodeo Unit	**MD Reference:**	KB @ 6823.0usft (Original Well Elev)
Site:	511H Pad	**North Reference:**	Grid
Well:	513H	**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
513H KOP - plan hits target center - Point	0.00	0.00	4,025.0	-425.0	-1,250.0	1,888,472.95	2,747,925.53	36.190014°N	107.749173°W
513H BHL - plan hits target center - Point	0.00	0.00	4,608.0	-7,816.6	5,782.7	1,881,081.39	2,754,958.20	36.169689°N	107.725367°W
513H POE - plan hits target center - Point	0.00	0.01	4,668.0	-1,037.3	-996.7	1,887,860.69	2,748,178.80	36.188331°N	107.748316°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
2,769.7	2,637.0	9 5/8"	9-5/8	12-1/4

Formations

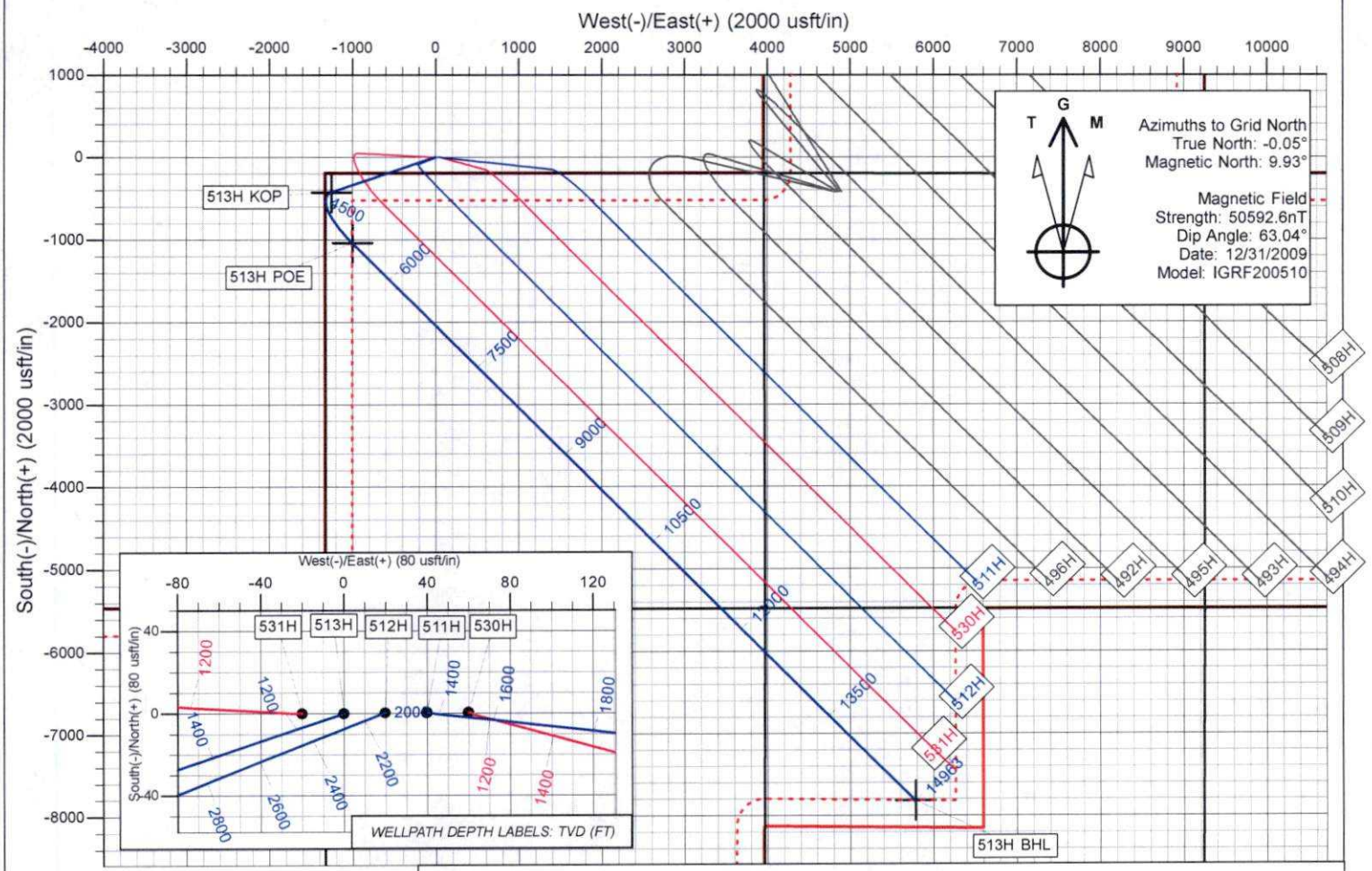
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
387.0	387.0	Ojo Alamo		0.00	
514.0	514.0	Kirtland		0.00	
715.0	715.0	Fruitland		0.00	
1,064.2	1,064.0	Pictured Cliffs		0.00	
1,320.4	1,317.0	Lewis		0.00	
1,454.8	1,447.0	Chacra		0.00	
2,645.9	2,526.0	Cliff House		0.00	
2,658.2	2,537.0	Menefee		0.00	
3,745.1	3,512.0	Point Lookout		0.00	
3,935.7	3,683.0	Mancos		0.00	
4,195.5	3,916.0	Gallup (MNCS_A)		0.00	
4,309.2	4,018.0	MNCS_B		0.00	
4,455.0	4,151.0	MNCS_Cms		0.00	
4,598.5	4,281.0	MNCS_D		0.00	
4,764.2	4,419.0	MNCS_E		0.00	
4,844.8	4,478.0	MNCS_F		0.00	
4,944.1	4,541.0	MNCS_G		0.00	
5,047.7	4,594.0	MNCS_H		0.00	
5,184.5	4,643.0	MNCS_I		0.00	

Enduring Resources LLC

Directional Drilling Plan
Plan View & Section View

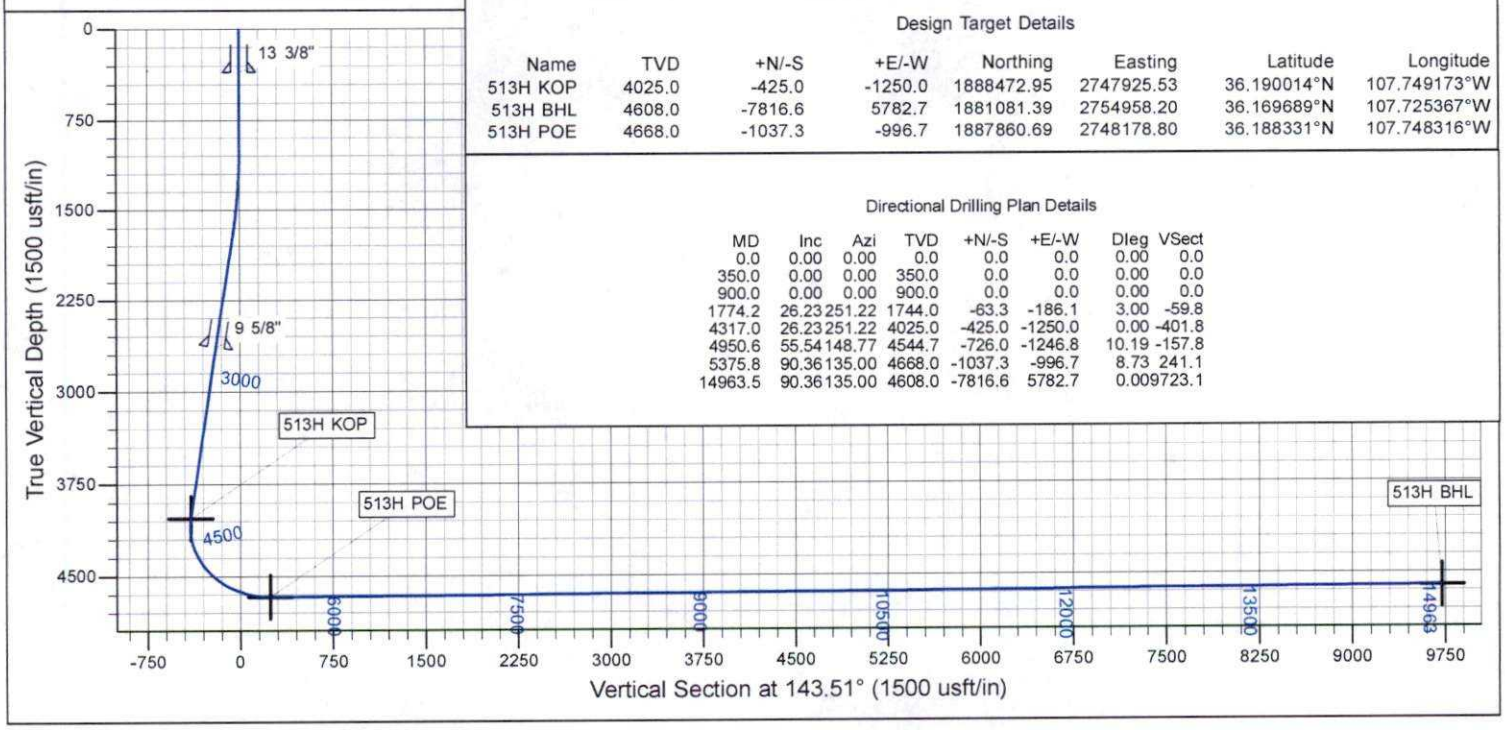
Rodeo Unit 513H

San Juan County, New Mexico
T23N - R09W - Sec.25 - Lot M/N
Surface Latitude: 36.191178°N
Surface Longitude: 107.744935°W
Ground Level: 6798.0
Reference Elevation: KB @ 6823.0usft (Original Well Elev)



Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
513H KOP	4025.0	-425.0	-1250.0	1888472.95	2747925.53	36.190014°N	107.749173°W
513H BHL	4608.0	-7816.6	5782.7	1881081.39	2754958.20	36.169689°N	107.725367°W
513H POE	4668.0	-1037.3	-996.7	1887860.69	2748178.80	36.188331°N	107.748316°W



Directional Drilling Plan Details

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	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
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.0
1774.2	26.23	251.22	1744.0	-63.3	-186.1	3.00	-59.8
4317.0	26.23	251.22	4025.0	-425.0	-1250.0	0.00	-401.8
4950.6	55.54	148.77	4544.7	-726.0	-1246.8	10.19	-157.8
5375.8	90.36	135.00	4668.0	-1037.3	-996.7	8.73	241.1
14963.5	90.36	135.00	4608.0	-7816.6	5782.7	0.009	723.1

WELL NAME: **RODEO UNIT 513H**

OBJECTIVE: **Drill, complete, and equip single lateral in the Mancos-I formation**

API Number: *30-045-35873*

AFE Number: *not yet assigned*

ER Well Number: *not yet assigned*

State: New Mexico

County: San Juan

Surface Elev.: 6,798 ft ASL (GL) 6,823 ft ASL (KB)

Surface Location: 25-23N-09W Sec-Twn- Rng 191 ft FSL 1,325 ft FWL

BH Location: 6-22N-08W Sec-Twn- Rng 2337 ft FNL 1816 ft FWL

Driving Directions: ***FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:***

South on US Hwy 550 for 37.8 miles to MM 113.4; Right (Southwest) on CR #7890 for 0.8 miles to fork; Left (South) remaining on CR #7890 for 1.3 miles to 4-way intersectionl; Left (Southeast) remaining on CR #7890 for 0.6 miles to fork; Right (Southwest) on CR #7890 for 1.5 miles to access road; Left on access road for 0.5 mile to Rodeo Unit 511H Pad (Wells: 511H, 512H, 513H, 530H, 531H).

QUICK REFERENCE	
Sur TD (MD)	350 ft
Int TD (MD)	2,770 ft
KOP (MD)	4,317 ft
KOP (TVD)	4,025 ft
Target (TVD)	4,668 ft
Curve BUR	10 °/100 ft
POE (MD)	5,376 ft
TD (MD)	14,964 ft
Lat Len (ft)	9,588 ft

WELL CONSTRUCTION SUMMARY:

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	17.500	350	13.375	54.5	J-55	BTC	0	350
Intermediate	12.250	2,770	9.625	36.0	J-55	LTC	0	2,770
Production	8.500	14,964	5.500	17.0	P-110	LTC	0	14,964

CEMENT PROPERTIES SUMMARY:

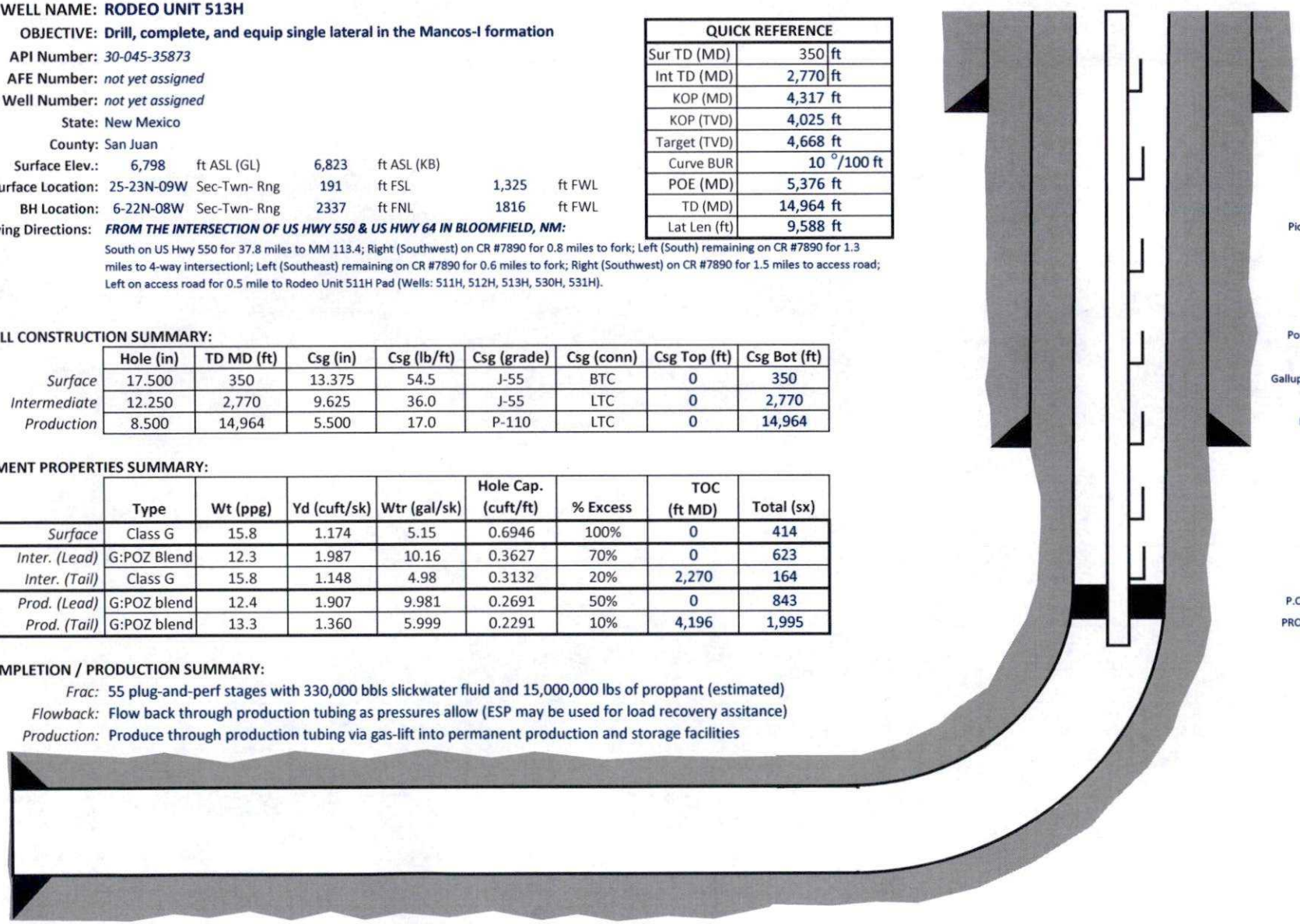
	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	Class G	15.8	1.174	5.15	0.6946	100%	0	414
Inter. (Lead)	G:POZ Blend	12.3	1.987	10.16	0.3627	70%	0	623
Inter. (Tail)	Class G	15.8	1.148	4.98	0.3132	20%	2,270	164
Prod. (Lead)	G:POZ blend	12.4	1.907	9.981	0.2691	50%	0	843
Prod. (Tail)	G:POZ blend	13.3	1.360	5.999	0.2291	10%	4,196	1,995

COMPLETION / PRODUCTION SUMMARY:

Frac: 55 plug-and-perf stages with 330,000 bbls slickwater fluid and 15,000,000 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



Tops	TVD (ft KB)	MD (ft KB)
Ojo Alamo	387	387
Kirtland	514	514
Fruitland	715	715
Pictured Cliffs	1,064	1,064
Lewis	1,317	1,320
Chacra	1,447	1,455
Cliff House	2,526	2,646
Menefee	2,537	2,658
Point Lookout	3,512	3,745
Mancos	3,683	3,936
Gallup (MNCS_A)	3,916	4,196
MNCS_B	4,018	4,309
MNCS_Cms	4,151	4,455
MNCS_D	4,281	4,599
MNCS_E	4,419	4,764
MNCS_F	4,478	4,845
MNCS_G	4,541	4,944
MNCS_H	4,594	5,048
MNCS_I	4,643	5,185
P.O.E. TARGET	4,668	5,376
PROJECTED TD	4,608	14,964