Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

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.

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

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
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 perfonned 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 detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

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)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: SESW / 191 FSL / 1325 FWL / TWSP: 23N / RANGE: 9W / SECTION: 25 / LAT: 36.191178 / LONG: -107.744935 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 1 / 840 FNL / 379 FWL / TWSP: 22N / RANGE: 9W / SECTION: 1 / LAT: 36.188351 / LONG: -107.748151 (TVD: 3945 feet, MD: 4213 feet)

PPP: NWSE / 840 FNL / 379 FWL / TWSP: 23N / RANGE: 9W / SECTION: 36 / LAT: 36.188351 / LONG: -107.748151 (TVD: 3945 feet, MD: 4213 feet)

PPP: NWNW / 840 FNL / 379 FWL / TWSP: 23N / RANGE: 9W / SECTION: 36 / LAT: 36.188351 / LONG: -107.748151 (TVD: 3945 feet, MD: 4213 feet)

BHL: SENW / 2337 FNL / 1821 FWL / TWSP: 22N / RANGE: 8W / SECTION: 6 / LAT: 36.169689 / LONG: -107.725349 (TVD: 4606 feet, MD: 15072 feet)

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
	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

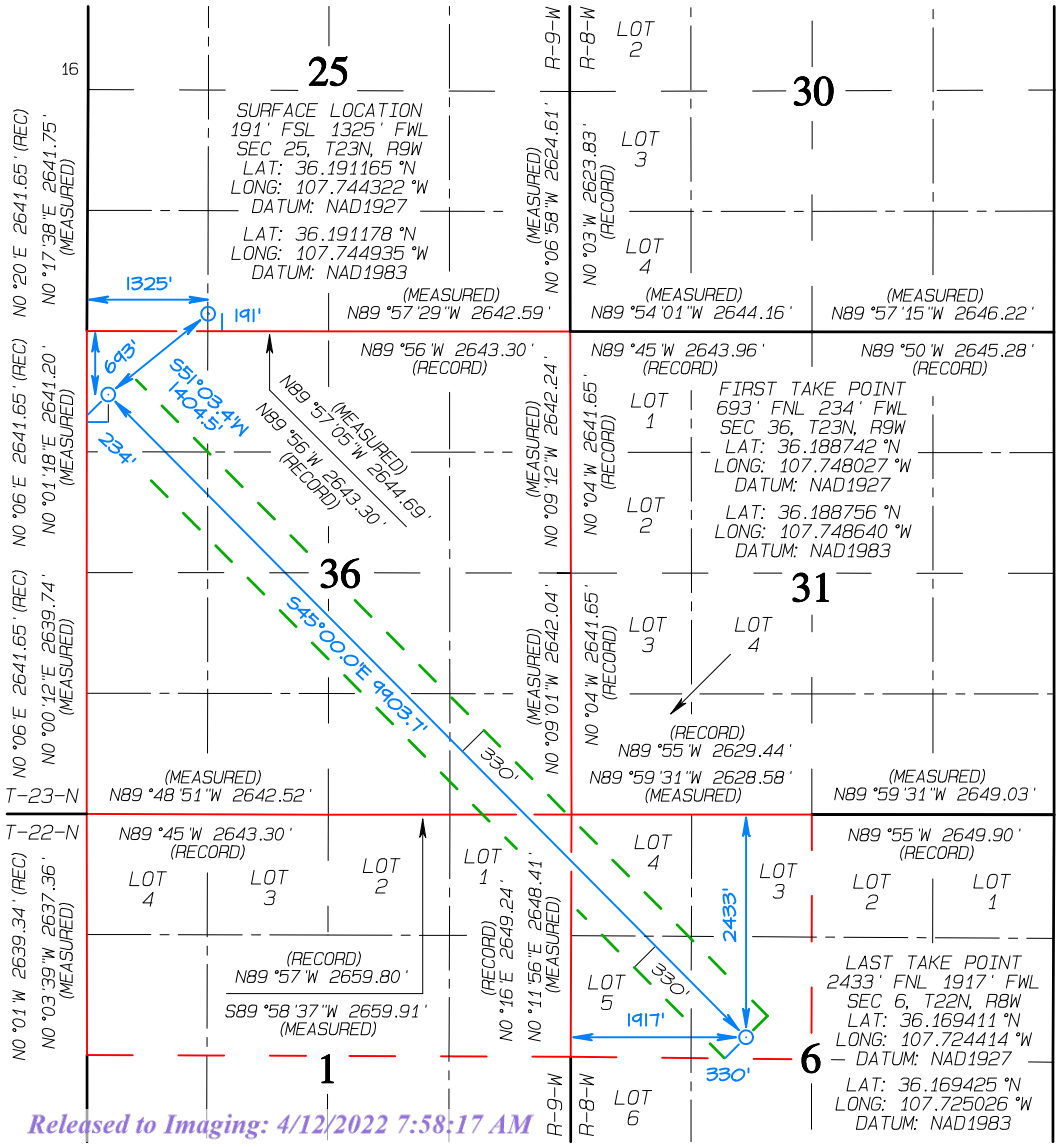
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	25	23N	9W		191	SOUTH	1325	WEST	SAN JUAN

[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		2433	NORTH	1917	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.

Khem Suthiwan — 3/22/2022
Signature — Date

Khem Suthiwan
Printed Name

ksuthiwan@enduringresources.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date Revised: MARCH 1, 2022
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

Well: Rodeo Unit #513H
Site: Rodeo Unit 511 pad (511, 512 & 513)
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig: Ensign 773

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Rodeo 513 LTP 2433 FNL 1917 FWL 330 perp	4602.00	-7912.56	5883.44	1880985.399	2755058.951	36.169425000	-107.725026000
Rodeo 513 FTP 693 FNL 234 FWL	4666.00	-882.63	-1092.47	1888015.316	2748083.055	36.188756000	-107.748640000

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	1000.00	0.000	0.000	1000.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 3°/100' build
3	1931.08	27.933	259.668	1894.64	-39.91	-218.89	3.00	259.67	-125.86	Begin 27.93° tangent
4	4283.09	27.933	259.668	3972.64	-237.51	-1302.78	0.00	0.00	-749.07	Begin 10°/100' build/turn
5	5005.35	60.000	150.008	4550.95	-586.16	-1314.45	10.00	-121.08	-509.82	Begin 60.00° tangent
6	5065.35	60.000	150.008	4580.95	-631.16	-1288.48	0.00	0.00	-459.58	Begin 10°/100' build/turn
7	5400.14	90.370	135.220	4666.00	-882.73	-1092.50	10.00	-27.56	-142.97	Begin 90.37° lateral
8	15303.99	90.370	135.220	4602.00	-7912.56	5883.44	0.00	0.00	9760.68	PBHL/TD

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Depth Reference: RKB=6798+28 @ 6826.00ft (Ensign 773)
Surface location:

Northing	Easting	Latitude	Longitude
1888897.946	2749175.527	36.191178000	-107.744935000

Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 8.67°

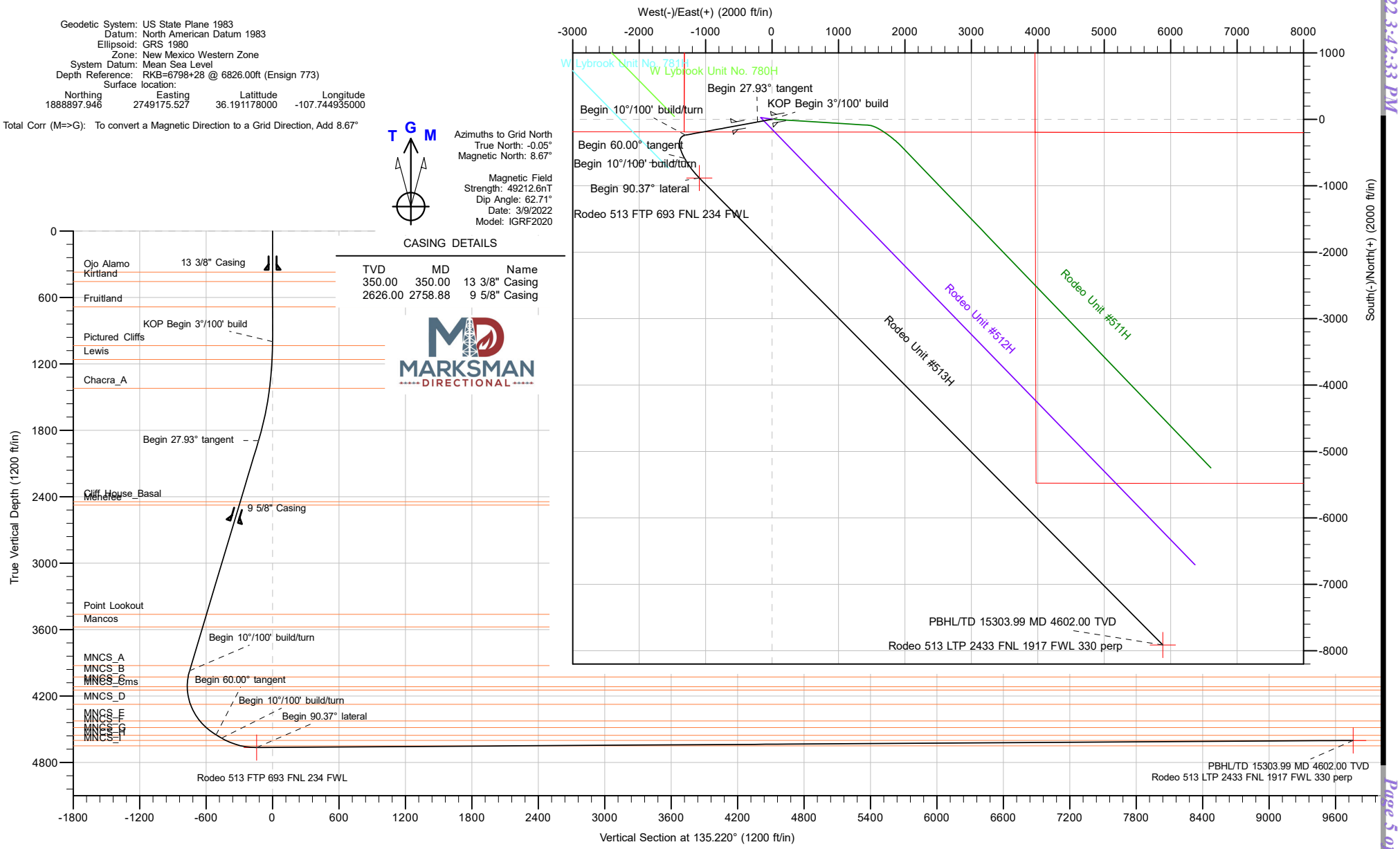
T G M

Azimuths to Grid North
True North: -0.05°
Magnetic North: 8.67°

Magnetic Field
Strength: 49212.6nT
Dip Angle: 62.71°
Date: 3/9/2022
Model: IGRF2020

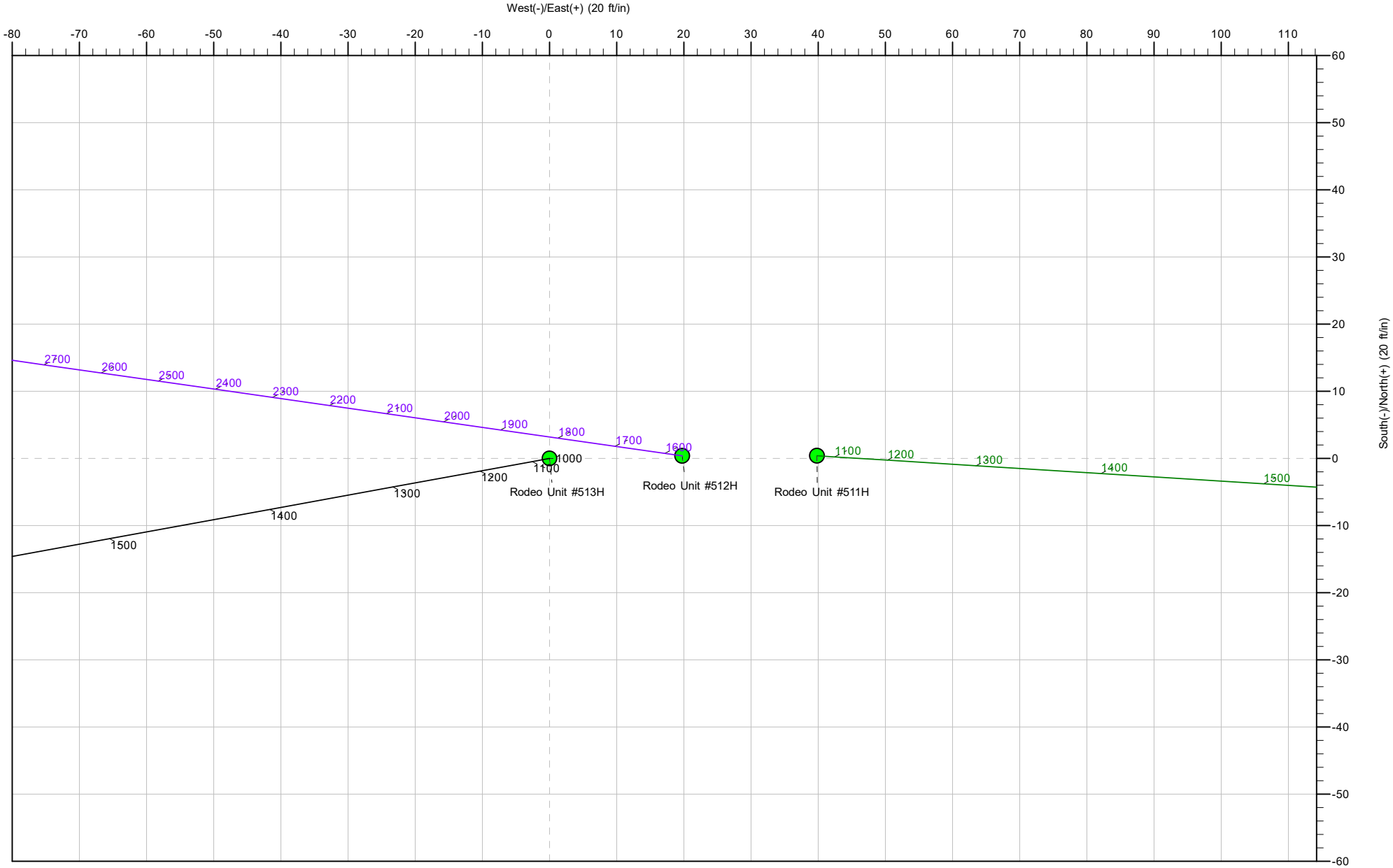
CASING DETAILS

TVD	MD	Name
350.00	350.00	13 3/8" Casing
2626.00	2758.88	9 5/8" Casing



Well: Rodeo Unit #513H
Site: Rodeo Unit 511 pad (511, 512 & 513)
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig: Ensign 773

MARKSMAN DIRECTIONAL



Planning Report

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project San Juan County, New Mexico NAD83 NM W

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

Site Rodeo Unit 511 pad (511, 512 & 513)

Site Position:		**Northing:**	1,888,898.347 usft	**Latitude:**	36.191179000
From:	Lat/Long	**Easting:**	2,749,215.362 usft	**Longitude:**	-107.744800000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well Rodeo Unit #513H, Surf loc: 191 FSL 1325 FWL Section 25-T23N-R07W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,888,897.946 usft	**Latitude:**	36.191178000
	+E/-W	0.00 ft	**Easting:**	2,749,175.527 usft	**Longitude:**	-107.744935000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,798.00 ft
Grid Convergence:		0.05 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/9/2022	8.72	62.71	49,212.57474214

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	135.220

Plan Survey Tool Program **Date** 3/29/2022

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,303.99	rev0 (Original Hole)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.000	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,931.08	27.933	259.668	1,894.64	-39.91	-218.89	3.00	3.00	0.00	259.67	
4,283.09	27.933	259.668	3,972.64	-237.51	-1,302.78	0.00	0.00	0.00	0.00	
5,005.35	60.000	150.008	4,550.95	-586.16	-1,314.45	10.00	4.44	-15.18	-121.08	
5,065.35	60.000	150.008	4,580.95	-631.16	-1,288.48	0.00	0.00	0.00	0.00	
5,400.14	90.370	135.220	4,666.00	-882.73	-1,092.50	10.00	9.07	-4.42	-27.56	
15,303.99	90.370	135.220	4,602.00	-7,912.56	5,883.44	0.00	0.00	0.00	0.00	Rodeo 513 LTP 2433

Planning Report

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.000	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.000	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.000	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
371.00	0.000	0.000	371.00	0.00	0.00	0.00	0.00	0.00	0.00
Ojo Alamo									
400.00	0.000	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
456.00	0.000	0.000	456.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland									
500.00	0.000	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.000	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
686.00	0.000	0.000	686.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland									
700.00	0.000	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.000	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.000	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.000	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3°/100' build									
1,036.00	1.080	259.668	1,036.00	-0.06	-0.33	-0.19	3.00	3.00	0.00
Pictured Cliffs									
1,100.00	3.000	259.668	1,099.95	-0.47	-2.57	-1.48	3.00	3.00	0.00
1,161.19	4.836	259.668	1,161.00	-1.22	-6.69	-3.85	3.00	3.00	0.00
Lewis									
1,200.00	6.000	259.668	1,199.63	-1.88	-10.29	-5.92	3.00	3.00	0.00
1,300.00	9.000	259.668	1,298.77	-4.22	-23.13	-13.30	3.00	3.00	0.00
1,400.00	12.000	259.668	1,397.08	-7.49	-41.06	-23.61	3.00	3.00	0.00
1,424.49	12.735	259.668	1,421.00	-8.43	-46.22	-26.57	3.00	3.00	0.00
Chacra_A									
1,500.00	15.000	259.668	1,494.31	-11.67	-64.02	-36.81	3.00	3.00	0.00
1,600.00	18.000	259.668	1,590.18	-16.77	-91.96	-52.87	3.00	3.00	0.00
1,700.00	21.000	259.668	1,684.43	-22.75	-124.80	-71.75	3.00	3.00	0.00
1,800.00	24.000	259.668	1,776.81	-29.61	-162.44	-93.40	3.00	3.00	0.00
1,900.00	27.000	259.668	1,867.06	-37.33	-204.79	-117.75	3.00	3.00	0.00
1,931.08	27.933	259.668	1,894.64	-39.91	-218.89	-125.86	3.00	3.00	0.00
Begin 27.93° tangent									
2,000.00	27.933	259.668	1,955.53	-45.70	-250.65	-144.12	0.00	0.00	0.00
2,100.00	27.933	259.668	2,043.88	-54.10	-296.73	-170.62	0.00	0.00	0.00
2,200.00	27.933	259.668	2,132.23	-62.50	-342.82	-197.11	0.00	0.00	0.00
2,300.00	27.933	259.668	2,220.58	-70.90	-388.90	-223.61	0.00	0.00	0.00
2,400.00	27.933	259.668	2,308.93	-79.30	-434.98	-250.11	0.00	0.00	0.00
2,500.00	27.933	259.668	2,397.28	-87.70	-481.07	-276.60	0.00	0.00	0.00
2,555.15	27.933	259.668	2,446.00	-92.34	-506.48	-291.22	0.00	0.00	0.00
Cliff House_Basal									
2,589.11	27.933	259.668	2,476.00	-95.19	-522.13	-300.21	0.00	0.00	0.00
Menefee									
2,600.00	27.933	259.668	2,485.63	-96.10	-527.15	-303.10	0.00	0.00	0.00
2,700.00	27.933	259.668	2,573.98	-104.51	-573.23	-329.60	0.00	0.00	0.00
2,800.00	27.933	259.668	2,662.33	-112.91	-619.32	-356.10	0.00	0.00	0.00
2,900.00	27.933	259.668	2,750.68	-121.31	-665.40	-382.59	0.00	0.00	0.00
3,000.00	27.933	259.668	2,839.03	-129.71	-711.49	-409.09	0.00	0.00	0.00
3,100.00	27.933	259.668	2,927.38	-138.11	-757.57	-435.59	0.00	0.00	0.00
3,200.00	27.933	259.668	3,015.73	-146.51	-803.65	-462.08	0.00	0.00	0.00
3,300.00	27.933	259.668	3,104.08	-154.91	-849.74	-488.58	0.00	0.00	0.00

Planning Report

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,400.00	27.933	259.668	3,192.43	-163.32	-895.82	-515.08	0.00	0.00	0.00
3,500.00	27.933	259.668	3,280.78	-171.72	-941.90	-541.58	0.00	0.00	0.00
3,600.00	27.933	259.668	3,369.13	-180.12	-987.99	-568.07	0.00	0.00	0.00
3,700.00	27.933	259.668	3,457.48	-188.52	-1,034.07	-594.57	0.00	0.00	0.00
3,706.25	27.933	259.668	3,463.00	-189.05	-1,036.95	-596.23	0.00	0.00	0.00
Point Lookout									
3,800.00	27.933	259.668	3,545.83	-196.92	-1,080.15	-621.07	0.00	0.00	0.00
3,834.15	27.933	259.668	3,576.00	-199.79	-1,095.89	-630.12	0.00	0.00	0.00
Mancos									
3,900.00	27.933	259.668	3,634.18	-205.32	-1,126.24	-647.56	0.00	0.00	0.00
4,000.00	27.933	259.668	3,722.53	-213.72	-1,172.32	-674.06	0.00	0.00	0.00
4,100.00	27.933	259.668	3,810.88	-222.13	-1,218.40	-700.56	0.00	0.00	0.00
4,200.00	27.933	259.668	3,899.23	-230.53	-1,264.49	-727.06	0.00	0.00	0.00
4,230.31	27.933	259.668	3,926.00	-233.07	-1,278.45	-735.09	0.00	0.00	0.00
MNCS_A									
4,283.09	27.933	259.668	3,972.64	-237.51	-1,302.78	-749.07	0.00	0.00	0.00
Begin 10°/100' build/turn									
4,300.00	27.095	256.488	3,987.63	-239.12	-1,310.42	-753.31	10.00	-4.95	-18.81
4,346.07	25.218	246.930	4,029.00	-245.42	-1,329.66	-762.39	10.00	-4.08	-20.75
MNCS_B									
4,350.00	25.088	246.057	4,032.56	-246.08	-1,331.19	-763.00	10.00	-3.30	-22.21
4,400.00	23.911	234.318	4,078.08	-256.30	-1,349.12	-768.38	10.00	-2.35	-23.48
4,441.42	23.657	224.056	4,116.00	-267.18	-1,361.72	-769.53	10.00	-0.61	-24.78
MNCS_C									
4,450.00	23.690	221.920	4,123.86	-269.70	-1,364.07	-769.40	10.00	0.38	-24.89
4,474.20	23.938	215.957	4,146.00	-277.29	-1,370.20	-768.33	10.00	1.03	-24.65
MNCS_Cms									
4,500.00	24.450	209.783	4,169.54	-286.16	-1,375.93	-766.07	10.00	1.98	-23.93
4,550.00	26.105	198.714	4,214.78	-305.57	-1,384.61	-758.40	10.00	3.31	-22.14
4,600.00	28.500	189.128	4,259.23	-327.78	-1,390.03	-746.45	10.00	4.79	-19.17
4,619.18	29.579	185.859	4,276.00	-337.01	-1,391.24	-740.75	10.00	5.62	-17.04
MNCS_D									
4,650.00	31.466	181.058	4,302.55	-352.63	-1,392.17	-730.32	10.00	6.12	-15.58
4,700.00	34.855	174.327	4,344.41	-379.91	-1,390.99	-710.13	10.00	6.78	-13.46
4,750.00	38.556	168.694	4,384.50	-409.42	-1,386.52	-686.03	10.00	7.40	-11.27
4,800.00	42.485	163.930	4,422.52	-440.95	-1,378.79	-658.21	10.00	7.86	-9.53
4,804.74	42.867	163.516	4,426.00	-444.03	-1,377.89	-655.39	10.00	8.06	-8.73
MNCS_E									
4,850.00	46.584	159.843	4,458.16	-474.24	-1,367.85	-626.87	10.00	8.21	-8.12
4,891.90	50.118	156.828	4,486.00	-503.32	-1,356.28	-598.08	10.00	8.43	-7.19
MNCS_F									
4,900.00	50.809	156.282	4,491.16	-509.05	-1,353.79	-592.26	10.00	8.54	-6.75
4,950.00	55.131	153.130	4,521.27	-545.11	-1,336.72	-554.64	10.00	8.64	-6.30
5,000.00	59.526	150.296	4,548.25	-582.15	-1,316.76	-514.29	10.00	8.79	-5.67
5,005.35	60.000	150.008	4,550.95	-586.16	-1,314.45	-509.82	10.00	8.86	-5.37
Begin 60.00° tangent									
5,015.45	60.000	150.008	4,556.00	-593.73	-1,310.08	-501.36	0.00	0.00	0.00
MNCS_G									
5,065.35	60.000	150.008	4,580.95	-631.16	-1,288.48	-459.58	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,100.00	63.084	148.211	4,597.46	-657.29	-1,272.84	-430.01	10.00	8.90	-5.19
5,107.92	63.792	147.814	4,601.00	-663.30	-1,269.09	-423.11	10.00	8.94	-5.01

Planning Report

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
MNCS_H									
5,150.00	67.571	145.782	4,618.33	-695.37	-1,248.08	-385.55	10.00	8.98	-4.83
5,200.00	72.092	143.507	4,635.56	-733.63	-1,220.92	-339.26	10.00	9.04	-4.55
5,250.00	76.638	141.345	4,649.04	-771.77	-1,191.57	-291.50	10.00	9.09	-4.32
5,254.22	77.023	141.167	4,650.00	-774.98	-1,188.99	-287.42	10.00	9.11	-4.23
MNCS_I									
5,300.00	81.202	139.264	4,658.65	-809.51	-1,160.23	-242.64	10.00	9.13	-4.16
5,350.00	85.777	137.233	4,664.31	-846.56	-1,127.16	-193.05	10.00	9.15	-4.06
5,400.14	90.370	135.220	4,666.00	-882.73	-1,092.50	-142.97	10.00	9.16	-4.01
Begin 90.37° lateral									
5,500.00	90.370	135.220	4,665.35	-953.61	-1,022.16	-43.11	0.00	0.00	0.00
5,600.00	90.370	135.220	4,664.71	-1,024.59	-951.72	56.89	0.00	0.00	0.00
5,700.00	90.370	135.220	4,664.06	-1,095.57	-881.29	156.89	0.00	0.00	0.00
5,800.00	90.370	135.220	4,663.41	-1,166.56	-810.85	256.89	0.00	0.00	0.00
5,900.00	90.370	135.220	4,662.77	-1,237.54	-740.41	356.89	0.00	0.00	0.00
6,000.00	90.370	135.220	4,662.12	-1,308.52	-669.98	456.88	0.00	0.00	0.00
6,100.00	90.370	135.220	4,661.48	-1,379.50	-599.54	556.88	0.00	0.00	0.00
6,200.00	90.370	135.220	4,660.83	-1,450.48	-529.11	656.88	0.00	0.00	0.00
6,300.00	90.370	135.220	4,660.18	-1,521.46	-458.67	756.88	0.00	0.00	0.00
6,400.00	90.370	135.220	4,659.54	-1,592.44	-388.23	856.87	0.00	0.00	0.00
6,500.00	90.370	135.220	4,658.89	-1,663.42	-317.80	956.87	0.00	0.00	0.00
6,600.00	90.370	135.220	4,658.24	-1,734.40	-247.36	1,056.87	0.00	0.00	0.00
6,700.00	90.370	135.220	4,657.60	-1,805.38	-176.92	1,156.87	0.00	0.00	0.00
6,800.00	90.370	135.220	4,656.95	-1,876.36	-106.49	1,256.87	0.00	0.00	0.00
6,900.00	90.370	135.220	4,656.31	-1,947.34	-36.05	1,356.86	0.00	0.00	0.00
7,000.00	90.370	135.220	4,655.66	-2,018.32	34.39	1,456.86	0.00	0.00	0.00
7,100.00	90.370	135.220	4,655.01	-2,089.31	104.82	1,556.86	0.00	0.00	0.00
7,200.00	90.370	135.220	4,654.37	-2,160.29	175.26	1,656.86	0.00	0.00	0.00
7,300.00	90.370	135.220	4,653.72	-2,231.27	245.70	1,756.86	0.00	0.00	0.00
7,400.00	90.370	135.220	4,653.08	-2,302.25	316.13	1,856.85	0.00	0.00	0.00
7,500.00	90.370	135.220	4,652.43	-2,373.23	386.57	1,956.85	0.00	0.00	0.00
7,600.00	90.370	135.220	4,651.78	-2,444.21	457.01	2,056.85	0.00	0.00	0.00
7,700.00	90.370	135.220	4,651.14	-2,515.19	527.44	2,156.85	0.00	0.00	0.00
7,800.00	90.370	135.220	4,650.49	-2,586.17	597.88	2,256.85	0.00	0.00	0.00
7,900.00	90.370	135.220	4,649.84	-2,657.15	668.32	2,356.84	0.00	0.00	0.00
8,000.00	90.370	135.220	4,649.20	-2,728.13	738.75	2,456.84	0.00	0.00	0.00
8,100.00	90.370	135.220	4,648.55	-2,799.11	809.19	2,556.84	0.00	0.00	0.00
8,200.00	90.370	135.220	4,647.91	-2,870.09	879.63	2,656.84	0.00	0.00	0.00
8,300.00	90.370	135.220	4,647.26	-2,941.07	950.06	2,756.84	0.00	0.00	0.00
8,400.00	90.370	135.220	4,646.61	-3,012.06	1,020.50	2,856.83	0.00	0.00	0.00
8,500.00	90.370	135.220	4,645.97	-3,083.04	1,090.94	2,956.83	0.00	0.00	0.00
8,600.00	90.370	135.220	4,645.32	-3,154.02	1,161.37	3,056.83	0.00	0.00	0.00
8,700.00	90.370	135.220	4,644.67	-3,225.00	1,231.81	3,156.83	0.00	0.00	0.00
8,800.00	90.370	135.220	4,644.03	-3,295.98	1,302.25	3,256.82	0.00	0.00	0.00
8,900.00	90.370	135.220	4,643.38	-3,366.96	1,372.68	3,356.82	0.00	0.00	0.00
9,000.00	90.370	135.220	4,642.74	-3,437.94	1,443.12	3,456.82	0.00	0.00	0.00
9,100.00	90.370	135.220	4,642.09	-3,508.92	1,513.56	3,556.82	0.00	0.00	0.00
9,200.00	90.370	135.220	4,641.44	-3,579.90	1,583.99	3,656.82	0.00	0.00	0.00
9,300.00	90.370	135.220	4,640.80	-3,650.88	1,654.43	3,756.81	0.00	0.00	0.00
9,400.00	90.370	135.220	4,640.15	-3,721.86	1,724.87	3,856.81	0.00	0.00	0.00
9,500.00	90.370	135.220	4,639.51	-3,792.84	1,795.30	3,956.81	0.00	0.00	0.00
9,600.00	90.370	135.220	4,638.86	-3,863.82	1,865.74	4,056.81	0.00	0.00	0.00
9,700.00	90.370	135.220	4,638.21	-3,934.81	1,936.18	4,156.81	0.00	0.00	0.00

Planning Report

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,800.00	90.370	135.220	4,637.57	-4,005.79	2,006.61	4,256.80	0.00	0.00	0.00
9,900.00	90.370	135.220	4,636.92	-4,076.77	2,077.05	4,356.80	0.00	0.00	0.00
10,000.00	90.370	135.220	4,636.27	-4,147.75	2,147.48	4,456.80	0.00	0.00	0.00
10,100.00	90.370	135.220	4,635.63	-4,218.73	2,217.92	4,556.80	0.00	0.00	0.00
10,200.00	90.370	135.220	4,634.98	-4,289.71	2,288.36	4,656.80	0.00	0.00	0.00
10,300.00	90.370	135.220	4,634.34	-4,360.69	2,358.79	4,756.79	0.00	0.00	0.00
10,400.00	90.370	135.220	4,633.69	-4,431.67	2,429.23	4,856.79	0.00	0.00	0.00
10,500.00	90.370	135.220	4,633.04	-4,502.65	2,499.67	4,956.79	0.00	0.00	0.00
10,600.00	90.370	135.220	4,632.40	-4,573.63	2,570.10	5,056.79	0.00	0.00	0.00
10,700.00	90.370	135.220	4,631.75	-4,644.61	2,640.54	5,156.79	0.00	0.00	0.00
10,800.00	90.370	135.220	4,631.10	-4,715.59	2,710.98	5,256.78	0.00	0.00	0.00
10,900.00	90.370	135.220	4,630.46	-4,786.57	2,781.41	5,356.78	0.00	0.00	0.00
11,000.00	90.370	135.220	4,629.81	-4,857.56	2,851.85	5,456.78	0.00	0.00	0.00
11,100.00	90.370	135.220	4,629.17	-4,928.54	2,922.29	5,556.78	0.00	0.00	0.00
11,200.00	90.370	135.220	4,628.52	-4,999.52	2,992.72	5,656.77	0.00	0.00	0.00
11,300.00	90.370	135.220	4,627.87	-5,070.50	3,063.16	5,756.77	0.00	0.00	0.00
11,400.00	90.370	135.220	4,627.23	-5,141.48	3,133.60	5,856.77	0.00	0.00	0.00
11,500.00	90.370	135.220	4,626.58	-5,212.46	3,204.03	5,956.77	0.00	0.00	0.00
11,600.00	90.370	135.220	4,625.94	-5,283.44	3,274.47	6,056.77	0.00	0.00	0.00
11,700.00	90.370	135.220	4,625.29	-5,354.42	3,344.91	6,156.76	0.00	0.00	0.00
11,800.00	90.370	135.220	4,624.64	-5,425.40	3,415.34	6,256.76	0.00	0.00	0.00
11,900.00	90.370	135.220	4,624.00	-5,496.38	3,485.78	6,356.76	0.00	0.00	0.00
12,000.00	90.370	135.220	4,623.35	-5,567.36	3,556.22	6,456.76	0.00	0.00	0.00
12,100.00	90.370	135.220	4,622.70	-5,638.34	3,626.65	6,556.76	0.00	0.00	0.00
12,200.00	90.370	135.220	4,622.06	-5,709.33	3,697.09	6,656.75	0.00	0.00	0.00
12,300.00	90.370	135.220	4,621.41	-5,780.31	3,767.53	6,756.75	0.00	0.00	0.00
12,400.00	90.370	135.220	4,620.77	-5,851.29	3,837.96	6,856.75	0.00	0.00	0.00
12,500.00	90.370	135.220	4,620.12	-5,922.27	3,908.40	6,956.75	0.00	0.00	0.00
12,600.00	90.370	135.220	4,619.47	-5,993.25	3,978.84	7,056.75	0.00	0.00	0.00
12,700.00	90.370	135.220	4,618.83	-6,064.23	4,049.27	7,156.74	0.00	0.00	0.00
12,800.00	90.370	135.220	4,618.18	-6,135.21	4,119.71	7,256.74	0.00	0.00	0.00
12,900.00	90.370	135.220	4,617.53	-6,206.19	4,190.15	7,356.74	0.00	0.00	0.00
13,000.00	90.370	135.220	4,616.89	-6,277.17	4,260.58	7,456.74	0.00	0.00	0.00
13,100.00	90.370	135.220	4,616.24	-6,348.15	4,331.02	7,556.74	0.00	0.00	0.00
13,200.00	90.370	135.220	4,615.60	-6,419.13	4,401.46	7,656.73	0.00	0.00	0.00
13,300.00	90.370	135.220	4,614.95	-6,490.11	4,471.89	7,756.73	0.00	0.00	0.00
13,400.00	90.370	135.220	4,614.30	-6,561.09	4,542.33	7,856.73	0.00	0.00	0.00
13,500.00	90.370	135.220	4,613.66	-6,632.08	4,612.77	7,956.73	0.00	0.00	0.00
13,600.00	90.370	135.220	4,613.01	-6,703.06	4,683.20	8,056.72	0.00	0.00	0.00
13,700.00	90.370	135.220	4,612.36	-6,774.04	4,753.64	8,156.72	0.00	0.00	0.00
13,800.00	90.370	135.220	4,611.72	-6,845.02	4,824.07	8,256.72	0.00	0.00	0.00
13,900.00	90.370	135.220	4,611.07	-6,916.00	4,894.51	8,356.72	0.00	0.00	0.00
14,000.00	90.370	135.220	4,610.43	-6,986.98	4,964.95	8,456.72	0.00	0.00	0.00
14,100.00	90.370	135.220	4,609.78	-7,057.96	5,035.38	8,556.71	0.00	0.00	0.00
14,200.00	90.370	135.220	4,609.13	-7,128.94	5,105.82	8,656.71	0.00	0.00	0.00
14,300.00	90.370	135.220	4,608.49	-7,199.92	5,176.26	8,756.71	0.00	0.00	0.00
14,400.00	90.370	135.220	4,607.84	-7,270.90	5,246.69	8,856.71	0.00	0.00	0.00
14,500.00	90.370	135.220	4,607.20	-7,341.88	5,317.13	8,956.71	0.00	0.00	0.00
14,600.00	90.370	135.220	4,606.55	-7,412.86	5,387.57	9,056.70	0.00	0.00	0.00
14,700.00	90.370	135.220	4,605.90	-7,483.84	5,458.00	9,156.70	0.00	0.00	0.00
14,800.00	90.370	135.220	4,605.26	-7,554.83	5,528.44	9,256.70	0.00	0.00	0.00
14,900.00	90.370	135.220	4,604.61	-7,625.81	5,598.88	9,356.70	0.00	0.00	0.00
15,000.00	90.370	135.220	4,603.96	-7,696.79	5,669.31	9,456.70	0.00	0.00	0.00
15,100.00	90.370	135.220	4,603.32	-7,767.77	5,739.75	9,556.69	0.00	0.00	0.00

Planning Report

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,200.00	90.370	135.220	4,602.67	-7,838.75	5,810.19	9,656.69	0.00	0.00	0.00
15,303.99	90.370	135.220	4,602.00	-7,912.56	5,883.44	9,760.68	0.00	0.00	0.00
PBHL/TD 15303.99 MD 4602.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Rodeo 513 LTP 2433 FN - plan hits target center - Point	0.000	0.000	4,602.00	-7,912.56	5,883.44	1,880,985.399	2,755,058.951	36.169425000	-107.725026000
Rodeo 513 FTP 693 FNI - plan misses target center by 0.09ft at 5400.09ft MD (4666.00 TVD, -882.69 N, -1092.54 E) - Point	0.000	0.000	4,666.00	-882.63	-1,092.47	1,888,015.316	2,748,083.055	36.188756000	-107.748640000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Casing	13-5/8	17-1/2
2,758.88	2,626.00	9 5/8" Casing	9-5/8	12-1/4

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Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
371.00	371.00	Ojo Alamo			
456.00	456.00	Kirtland			
686.00	686.00	Fruitland			
1,036.00	1,036.00	Pictured Cliffs			
1,161.19	1,161.00	Lewis			
1,424.49	1,421.00	Chacra_A			
2,555.15	2,446.00	Cliff House_Basal		0.00	
2,589.11	2,476.00	Menefee			
3,706.25	3,463.00	Point Lookout			
3,834.15	3,576.00	Mancos			
4,230.31	3,926.00	MNCS_A			
4,346.07	4,029.00	MNCS_B			
4,441.42	4,116.00	MNCS_C			
4,474.20	4,146.00	MNCS_Cms			
4,619.18	4,276.00	MNCS_D			
4,804.74	4,426.00	MNCS_E			
4,891.90	4,486.00	MNCS_F			
5,015.45	4,556.00	MNCS_G			
5,107.92	4,601.00	MNCS_H			
5,254.22	4,650.00	MNCS_I			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.00	1,000.00	0.00	0.00	KOP Begin 3°/100' build
1,931.08	1,894.64	-39.91	-218.89	Begin 27.93° tangent
4,283.09	3,972.64	-237.51	-1,302.78	Begin 10°/100' build/turn
5,005.35	4,550.95	-586.16	-1,314.45	Begin 60.00° tangent
5,065.35	4,580.95	-631.16	-1,288.48	Begin 10°/100' build/turn
5,400.14	4,666.00	-882.73	-1,092.50	Begin 90.37° lateral
15,303.99	4,602.00	-7,912.56	5,883.44	PBHL/TD 15303.99 MD 4602.00 TVD

Planning Report - Geographic

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Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project San Juan County, New Mexico NAD83 NM W

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

Site Rodeo Unit 511 pad (511, 512 & 513)

Site Position:		**Northing:**	1,888,898.347 usft	**Latitude:**	36.191179000
From:	Lat/Long	**Easting:**	2,749,215.362 usft	**Longitude:**	-107.744800000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well Rodeo Unit #513H, Surf loc: 191 FSL 1325 FWL Section 25-T23N-R07W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,888,897.946 usft	**Latitude:**	36.191178000
	+E/-W	0.00 ft	**Easting:**	2,749,175.527 usft	**Longitude:**	-107.744935000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,798.00 ft
Grid Convergence:		0.05 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/9/2022	8.72	62.71	49,212.57474214

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	135.220

Plan Survey Tool Program **Date** 3/29/2022

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,303.99	rev0 (Original Hole)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.000	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,931.08	27.933	259.668	1,894.64	-39.91	-218.89	3.00	3.00	0.00	259.67	
4,283.09	27.933	259.668	3,972.64	-237.51	-1,302.78	0.00	0.00	0.00	0.00	
5,005.35	60.000	150.008	4,550.95	-586.16	-1,314.45	10.00	4.44	-15.18	-121.08	
5,065.35	60.000	150.008	4,580.95	-631.16	-1,288.48	0.00	0.00	0.00	0.00	
5,400.14	90.370	135.220	4,666.00	-882.73	-1,092.50	10.00	9.07	-4.42	-27.56	
15,303.99	90.370	135.220	4,602.00	-7,912.56	5,883.44	0.00	0.00	0.00	0.00	Rodeo 513 LTP 2433

Planning Report - Geographic

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Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.000	0.000	0.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
100.00	0.000	0.000	100.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
200.00	0.000	0.000	200.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
300.00	0.000	0.000	300.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
371.00	0.000	0.000	371.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
Ojo Alamo									
400.00	0.000	0.000	400.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
456.00	0.000	0.000	456.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
Kirtland									
500.00	0.000	0.000	500.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
600.00	0.000	0.000	600.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
686.00	0.000	0.000	686.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
Fruitland									
700.00	0.000	0.000	700.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
800.00	0.000	0.000	800.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
900.00	0.000	0.000	900.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
1,000.00	0.000	0.000	1,000.00	0.00	0.00	1,888,897.946	2,749,175.527	36.191178000	-107.744935000
KOP Begin 3°/100' build									
1,036.00	1.080	259.668	1,036.00	-0.06	-0.33	1,888,897.885	2,749,175.194	36.191177833	-107.744936132
Pictured Cliffs									
1,100.00	3.000	259.668	1,099.95	-0.47	-2.57	1,888,897.477	2,749,172.952	36.191176716	-107.744943728
1,161.19	4.836	259.668	1,161.00	-1.22	-6.69	1,888,896.727	2,749,168.839	36.191174667	-107.744957669
Lewis									
1,200.00	6.000	259.668	1,199.63	-1.88	-10.29	1,888,896.070	2,749,165.235	36.191172870	-107.744969888
1,300.00	9.000	259.668	1,298.77	-4.22	-23.13	1,888,893.729	2,749,152.395	36.191166472	-107.745013408
1,400.00	12.000	259.668	1,397.08	-7.49	-41.06	1,888,890.461	2,749,134.469	36.191157539	-107.745074170
1,424.49	12.735	259.668	1,421.00	-8.43	-46.22	1,888,889.520	2,749,129.310	36.191154968	-107.745091657
Chacra_A									
1,500.00	15.000	259.668	1,494.31	-11.67	-64.02	1,888,886.275	2,749,111.506	36.191146096	-107.745152005
1,600.00	18.000	259.668	1,590.18	-16.77	-91.96	1,888,881.181	2,749,083.568	36.191132174	-107.745246702
1,700.00	21.000	259.668	1,684.43	-22.75	-124.80	1,888,875.195	2,749,050.733	36.191115811	-107.745358000
1,800.00	24.000	259.668	1,776.81	-29.61	-162.44	1,888,868.332	2,749,013.089	36.191097052	-107.745485595
1,900.00	27.000	259.668	1,867.06	-37.33	-204.79	1,888,860.612	2,748,970.741	36.191075949	-107.745629136
1,931.08	27.933	259.668	1,894.64	-39.91	-218.89	1,888,858.041	2,748,956.637	36.191068920	-107.745676942
Begin 27.93° tangent									
2,000.00	27.933	259.668	1,955.53	-45.70	-250.65	1,888,852.251	2,748,924.878	36.191053093	-107.745784591
2,100.00	27.933	259.668	2,043.88	-54.10	-296.73	1,888,843.849	2,748,878.795	36.191030128	-107.745940793
2,200.00	27.933	259.668	2,132.23	-62.50	-342.82	1,888,835.448	2,748,832.711	36.191007162	-107.746096996
2,300.00	27.933	259.668	2,220.58	-70.90	-388.90	1,888,827.046	2,748,786.628	36.190984196	-107.746253198
2,400.00	27.933	259.668	2,308.93	-79.30	-434.98	1,888,818.645	2,748,740.544	36.190961230	-107.746409400
2,500.00	27.933	259.668	2,397.28	-87.70	-481.07	1,888,810.244	2,748,694.461	36.190938264	-107.746565602
2,555.15	27.933	259.668	2,446.00	-92.34	-506.48	1,888,805.610	2,748,669.046	36.190925598	-107.746651746
Cliff House_Basal									
2,589.11	27.933	259.668	2,476.00	-95.19	-522.13	1,888,802.758	2,748,653.398	36.190917800	-107.746704786
Menefee									
2,600.00	27.933	259.668	2,485.63	-96.10	-527.15	1,888,801.842	2,748,648.377	36.190915298	-107.746721803
2,700.00	27.933	259.668	2,573.98	-104.51	-573.23	1,888,793.441	2,748,602.294	36.190892331	-107.746878005
2,800.00	27.933	259.668	2,662.33	-112.91	-619.32	1,888,785.039	2,748,556.210	36.190869364	-107.747034207
2,900.00	27.933	259.668	2,750.68	-121.31	-665.40	1,888,776.638	2,748,510.127	36.190846397	-107.747190408
3,000.00	27.933	259.668	2,839.03	-129.71	-711.49	1,888,768.237	2,748,464.044	36.190823430	-107.747346610
3,100.00	27.933	259.668	2,927.38	-138.11	-757.57	1,888,759.835	2,748,417.960	36.190800462	-107.747502811
3,200.00	27.933	259.668	3,015.73	-146.51	-803.65	1,888,751.434	2,748,371.877	36.190777494	-107.747659012
3,300.00	27.933	259.668	3,104.08	-154.91	-849.74	1,888,743.032	2,748,325.793	36.190754526	-107.747815214

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Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,400.00	27.933	259.668	3,192.43	-163.32	-895.82	1,888,734.631	2,748,279.710	36.190731558	-107.747971415
3,500.00	27.933	259.668	3,280.78	-171.72	-941.90	1,888,726.229	2,748,233.626	36.190708590	-107.748127616
3,600.00	27.933	259.668	3,369.13	-180.12	-987.99	1,888,717.828	2,748,187.543	36.190685622	-107.748283817
3,700.00	27.933	259.668	3,457.48	-188.52	-1,034.07	1,888,709.427	2,748,141.459	36.190662653	-107.748440018
3,706.25	27.933	259.668	3,463.00	-189.05	-1,036.95	1,888,708.901	2,748,138.578	36.190661217	-107.748449785
Point Lookout									
3,800.00	27.933	259.668	3,545.83	-196.92	-1,080.15	1,888,701.025	2,748,095.376	36.190639684	-107.748596218
3,834.15	27.933	259.668	3,576.00	-199.79	-1,095.89	1,888,698.156	2,748,079.637	36.190631839	-107.748649566
Mancos									
3,900.00	27.933	259.668	3,634.18	-205.32	-1,126.24	1,888,692.624	2,748,049.292	36.190616715	-107.748752419
4,000.00	27.933	259.668	3,722.53	-213.72	-1,172.32	1,888,684.222	2,748,003.209	36.190593745	-107.748908619
4,100.00	27.933	259.668	3,810.88	-222.13	-1,218.40	1,888,675.821	2,747,957.126	36.190570776	-107.749064820
4,200.00	27.933	259.668	3,899.23	-230.53	-1,264.49	1,888,667.420	2,747,911.042	36.190547806	-107.749221020
4,230.31	27.933	259.668	3,926.00	-233.07	-1,278.45	1,888,664.873	2,747,897.076	36.190540845	-107.749268357
MNCS_A									
4,283.09	27.933	259.668	3,972.64	-237.51	-1,302.78	1,888,660.438	2,747,872.749	36.190528719	-107.749350814
Begin 10°/100' build/turn									
4,300.00	27.095	256.488	3,987.63	-239.12	-1,310.42	1,888,658.829	2,747,865.110	36.190524315	-107.749376708
4,346.07	25.218	246.930	4,029.00	-245.42	-1,329.66	1,888,652.528	2,747,845.870	36.190507054	-107.749441931
MNCS_B									
4,350.00	25.088	246.057	4,032.56	-246.08	-1,331.19	1,888,651.862	2,747,844.337	36.190505226	-107.749447127
4,400.00	23.911	234.318	4,078.08	-256.30	-1,349.12	1,888,641.643	2,747,826.407	36.190477197	-107.749507921
4,441.42	23.657	224.056	4,116.00	-267.18	-1,361.72	1,888,630.771	2,747,813.806	36.190447360	-107.749550658
MNCS_C									
4,450.00	23.690	221.920	4,123.86	-269.70	-1,364.07	1,888,628.250	2,747,811.456	36.190440441	-107.749558628
4,474.20	23.938	215.957	4,146.00	-277.29	-1,370.20	1,888,620.659	2,747,805.326	36.190419602	-107.749579426
MNCS_Cms									
4,500.00	24.450	209.783	4,169.54	-286.16	-1,375.93	1,888,611.786	2,747,799.599	36.190395239	-107.749598862
4,550.00	26.105	198.714	4,214.78	-305.57	-1,384.61	1,888,592.374	2,747,790.924	36.190341933	-107.749628317
4,600.00	28.500	189.128	4,259.23	-327.78	-1,390.03	1,888,570.163	2,747,785.499	36.190280930	-107.749646768
4,619.18	29.579	185.859	4,276.00	-337.01	-1,391.24	1,888,560.932	2,747,784.289	36.190255576	-107.749650894
MNCS_D									
4,650.00	31.466	181.058	4,302.55	-352.63	-1,392.17	1,888,545.321	2,747,783.364	36.190212693	-107.749654075
4,700.00	34.855	174.327	4,344.41	-379.91	-1,390.99	1,888,518.039	2,747,784.536	36.190137743	-107.749650183
4,750.00	38.556	168.694	4,384.50	-409.42	-1,386.52	1,888,488.524	2,747,789.006	36.190056650	-107.749635121
4,800.00	42.485	163.930	4,422.52	-440.95	-1,378.79	1,888,456.999	2,747,796.740	36.189970031	-107.749609004
4,804.74	42.867	163.516	4,426.00	-444.03	-1,377.89	1,888,453.915	2,747,797.640	36.189961556	-107.749605961
MNCS_E									
4,850.00	46.584	159.843	4,458.16	-474.24	-1,367.85	1,888,423.706	2,747,807.678	36.189878545	-107.749572031
4,891.90	50.118	156.828	4,486.00	-503.32	-1,356.28	1,888,394.629	2,747,819.253	36.189798640	-107.749532890
MNCS_F									
4,900.00	50.809	156.282	4,491.16	-509.05	-1,353.79	1,888,388.897	2,747,821.739	36.189782888	-107.749524482
4,950.00	55.131	153.130	4,521.27	-545.11	-1,336.72	1,888,352.838	2,747,838.814	36.189683788	-107.749466721
5,000.00	59.526	150.296	4,548.25	-582.15	-1,316.76	1,888,315.802	2,747,858.774	36.189582000	-107.749399186
5,005.35	60.000	150.008	4,550.95	-586.16	-1,314.45	1,888,311.791	2,747,861.076	36.189570977	-107.749391398
Begin 60.00° tangent									
5,015.45	60.000	150.008	4,556.00	-593.73	-1,310.08	1,888,304.216	2,747,865.448	36.189550155	-107.749376603
MNCS_G									
5,065.35	60.000	150.008	4,580.95	-631.16	-1,288.48	1,888,266.788	2,747,887.050	36.189447285	-107.749303505
Begin 10°/100' build/turn									
5,100.00	63.084	148.211	4,597.46	-657.29	-1,272.84	1,888,240.656	2,747,902.692	36.189375462	-107.749250573
5,107.92	63.792	147.814	4,601.00	-663.30	-1,269.09	1,888,234.649	2,747,906.444	36.189358951	-107.749237876
MNCS_H									

Planning Report - Geographic

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,150.00	67.571	145.782	4,618.33	-695.37	-1,248.08	1,888,202.575	2,747,927.445	36.189270791	-107.749166796
5,200.00	72.092	143.507	4,635.56	-733.63	-1,220.92	1,888,164.318	2,747,954.605	36.189165629	-107.749074866
5,250.00	76.638	141.345	4,649.04	-771.77	-1,191.57	1,888,126.174	2,747,983.965	36.189060776	-107.748975482
5,254.22	77.023	141.167	4,650.00	-774.98	-1,188.99	1,888,122.967	2,747,986.538	36.189051960	-107.748966771
MNCS_I									
5,300.00	81.202	139.264	4,658.65	-809.51	-1,160.23	1,888,088.436	2,748,015.300	36.188957029	-107.748869401
5,350.00	85.777	137.233	4,664.31	-846.56	-1,127.16	1,888,051.389	2,748,048.373	36.188855179	-107.748757429
5,400.14	90.370	135.220	4,666.00	-882.73	-1,092.50	1,888,015.219	2,748,083.028	36.188755733	-107.748640093
Begin 90.37° lateral									
5,500.00	90.370	135.220	4,665.35	-953.61	-1,022.16	1,887,944.335	2,748,153.368	36.188560840	-107.748401928
5,600.00	90.370	135.220	4,664.71	-1,024.59	-951.72	1,887,873.355	2,748,223.805	36.188365679	-107.748163438
5,700.00	90.370	135.220	4,664.06	-1,095.57	-881.29	1,887,802.374	2,748,294.241	36.188170517	-107.747924949
5,800.00	90.370	135.220	4,663.41	-1,166.56	-810.85	1,887,731.394	2,748,364.678	36.187975355	-107.747686461
5,900.00	90.370	135.220	4,662.77	-1,237.54	-740.41	1,887,660.413	2,748,435.114	36.187780193	-107.747447974
6,000.00	90.370	135.220	4,662.12	-1,308.52	-669.98	1,887,589.432	2,748,505.550	36.187585030	-107.747209489
6,100.00	90.370	135.220	4,661.48	-1,379.50	-599.54	1,887,518.452	2,748,575.987	36.187389867	-107.746971005
6,200.00	90.370	135.220	4,660.83	-1,450.48	-529.11	1,887,447.471	2,748,646.423	36.187194703	-107.746732522
6,300.00	90.370	135.220	4,660.18	-1,521.46	-458.67	1,887,376.490	2,748,716.860	36.186999539	-107.746494040
6,400.00	90.370	135.220	4,659.54	-1,592.44	-388.23	1,887,305.510	2,748,787.296	36.186804374	-107.746255559
6,500.00	90.370	135.220	4,658.89	-1,663.42	-317.80	1,887,234.529	2,748,857.733	36.186609209	-107.746017080
6,600.00	90.370	135.220	4,658.24	-1,734.40	-247.36	1,887,163.549	2,748,928.169	36.186414043	-107.745778601
6,700.00	90.370	135.220	4,657.60	-1,805.38	-176.92	1,887,092.568	2,748,998.605	36.186218877	-107.745540124
6,800.00	90.370	135.220	4,656.95	-1,876.36	-106.49	1,887,021.587	2,749,069.042	36.186023711	-107.745301648
6,900.00	90.370	135.220	4,656.31	-1,947.34	-36.05	1,886,950.607	2,749,139.478	36.185828543	-107.745063174
7,000.00	90.370	135.220	4,655.66	-2,018.32	34.39	1,886,879.626	2,749,209.915	36.185633376	-107.744824700
7,100.00	90.370	135.220	4,655.01	-2,089.31	104.82	1,886,808.645	2,749,280.351	36.185438208	-107.744586228
7,200.00	90.370	135.220	4,654.37	-2,160.29	175.26	1,886,737.665	2,749,350.788	36.185243039	-107.744347756
7,300.00	90.370	135.220	4,653.72	-2,231.27	245.70	1,886,666.684	2,749,421.224	36.185047870	-107.744109286
7,400.00	90.370	135.220	4,653.08	-2,302.25	316.13	1,886,595.703	2,749,491.661	36.184852701	-107.743870818
7,500.00	90.370	135.220	4,652.43	-2,373.23	386.57	1,886,524.723	2,749,562.097	36.184657531	-107.743632350
7,600.00	90.370	135.220	4,651.78	-2,444.21	457.01	1,886,453.742	2,749,632.533	36.184462360	-107.743393883
7,700.00	90.370	135.220	4,651.14	-2,515.19	527.44	1,886,382.762	2,749,702.970	36.184267189	-107.743155418
7,800.00	90.370	135.220	4,650.49	-2,586.17	597.88	1,886,311.781	2,749,773.406	36.184072018	-107.742916954
7,900.00	90.370	135.220	4,649.84	-2,657.15	668.32	1,886,240.800	2,749,843.843	36.183876846	-107.742678491
8,000.00	90.370	135.220	4,649.20	-2,728.13	738.75	1,886,169.820	2,749,914.279	36.183681673	-107.742440029
8,100.00	90.370	135.220	4,648.55	-2,799.11	809.19	1,886,098.839	2,749,984.716	36.183486501	-107.742201569
8,200.00	90.370	135.220	4,647.91	-2,870.09	879.63	1,886,027.858	2,750,055.152	36.183291327	-107.741963109
8,300.00	90.370	135.220	4,647.26	-2,941.07	950.06	1,885,956.878	2,750,125.588	36.183096153	-107.741724651
8,400.00	90.370	135.220	4,646.61	-3,012.06	1,020.50	1,885,885.897	2,750,196.025	36.182900979	-107.741486194
8,500.00	90.370	135.220	4,645.97	-3,083.04	1,090.94	1,885,814.917	2,750,266.461	36.182705804	-107.741247738
8,600.00	90.370	135.220	4,645.32	-3,154.02	1,161.37	1,885,743.936	2,750,336.898	36.182510629	-107.741009284
8,700.00	90.370	135.220	4,644.67	-3,225.00	1,231.81	1,885,672.955	2,750,407.334	36.182315453	-107.740770830
8,800.00	90.370	135.220	4,644.03	-3,295.98	1,302.25	1,885,601.975	2,750,477.771	36.182120277	-107.740532378
8,900.00	90.370	135.220	4,643.38	-3,366.96	1,372.68	1,885,530.994	2,750,548.207	36.181925100	-107.740293927
9,000.00	90.370	135.220	4,642.74	-3,437.94	1,443.12	1,885,460.013	2,750,618.643	36.181729923	-107.740055477
9,100.00	90.370	135.220	4,642.09	-3,508.92	1,513.56	1,885,389.033	2,750,689.080	36.181534745	-107.739817028
9,200.00	90.370	135.220	4,641.44	-3,579.90	1,583.99	1,885,318.052	2,750,759.516	36.181339567	-107.739578581
9,300.00	90.370	135.220	4,640.80	-3,650.88	1,654.43	1,885,247.071	2,750,829.953	36.181144389	-107.739340134
9,400.00	90.370	135.220	4,640.15	-3,721.86	1,724.87	1,885,176.091	2,750,900.389	36.180949210	-107.739101689
9,500.00	90.370	135.220	4,639.51	-3,792.84	1,795.30	1,885,105.110	2,750,970.826	36.180754030	-107.738863245
9,600.00	90.370	135.220	4,638.86	-3,863.82	1,865.74	1,885,034.130	2,751,041.262	36.180558850	-107.738624802
9,700.00	90.370	135.220	4,638.21	-3,934.81	1,936.18	1,884,963.149	2,751,111.699	36.180363669	-107.738386361
9,800.00	90.370	135.220	4,637.57	-4,005.79	2,006.61	1,884,892.168	2,751,182.135	36.180168488	-107.738147920
9,900.00	90.370	135.220	4,636.92	-4,076.77	2,077.05	1,884,821.188	2,751,252.571	36.179973307	-107.737909481

Planning Report - Geographic

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,000.00	90.370	135.220	4,636.27	-4,147.75	2,147.48	1,884,750.207	2,751,323.008	36.179778125	-107.737671043
10,100.00	90.370	135.220	4,635.63	-4,218.73	2,217.92	1,884,679.226	2,751,393.444	36.179582942	-107.737432606
10,200.00	90.370	135.220	4,634.98	-4,289.71	2,288.36	1,884,608.246	2,751,463.881	36.179387759	-107.737194170
10,300.00	90.370	135.220	4,634.34	-4,360.69	2,358.79	1,884,537.265	2,751,534.317	36.179192576	-107.736955736
10,400.00	90.370	135.220	4,633.69	-4,431.67	2,429.23	1,884,466.285	2,751,604.754	36.178997392	-107.736717302
10,500.00	90.370	135.220	4,633.04	-4,502.65	2,499.67	1,884,395.304	2,751,675.190	36.178802208	-107.736478870
10,600.00	90.370	135.220	4,632.40	-4,573.63	2,570.10	1,884,324.323	2,751,745.626	36.178607023	-107.736240439
10,700.00	90.370	135.220	4,631.75	-4,644.61	2,640.54	1,884,253.342	2,751,816.063	36.178411837	-107.736002009
10,800.00	90.370	135.220	4,631.10	-4,715.59	2,710.98	1,884,182.361	2,751,886.499	36.178216652	-107.735763581
10,900.00	90.370	135.220	4,630.46	-4,786.57	2,781.41	1,884,111.380	2,751,956.936	36.178021465	-107.735525153
11,000.00	90.370	135.220	4,629.81	-4,857.56	2,851.85	1,884,040.400	2,752,027.372	36.177826279	-107.735286727
11,100.00	90.370	135.220	4,629.17	-4,928.54	2,922.29	1,883,969.419	2,752,097.809	36.177631091	-107.735048302
11,200.00	90.370	135.220	4,628.52	-4,999.52	2,992.72	1,883,898.438	2,752,168.245	36.177435903	-107.734809878
11,300.00	90.370	135.220	4,627.87	-5,070.50	3,063.16	1,883,827.458	2,752,238.681	36.177240715	-107.734571455
11,400.00	90.370	135.220	4,627.23	-5,141.48	3,133.60	1,883,756.477	2,752,309.118	36.177045527	-107.734333034
11,500.00	90.370	135.220	4,626.58	-5,212.46	3,204.03	1,883,685.497	2,752,379.554	36.176850337	-107.734094613
11,600.00	90.370	135.220	4,625.94	-5,283.44	3,274.47	1,883,614.516	2,752,449.991	36.176655148	-107.733856194
11,700.00	90.370	135.220	4,625.29	-5,354.42	3,344.91	1,883,543.535	2,752,520.427	36.176459958	-107.733617776
11,800.00	90.370	135.220	4,624.64	-5,425.40	3,415.34	1,883,472.555	2,752,590.864	36.176264767	-107.733379359
11,900.00	90.370	135.220	4,624.00	-5,496.38	3,485.78	1,883,401.574	2,752,661.300	36.176069576	-107.733140944
12,000.00	90.370	135.220	4,623.35	-5,567.36	3,556.22	1,883,330.593	2,752,731.737	36.175874384	-107.732902529
12,100.00	90.370	135.220	4,622.70	-5,638.34	3,626.65	1,883,259.613	2,752,802.173	36.175679192	-107.732664116
12,200.00	90.370	135.220	4,622.06	-5,709.33	3,697.09	1,883,188.632	2,752,872.609	36.175484000	-107.732425704
12,300.00	90.370	135.220	4,621.41	-5,780.31	3,767.53	1,883,117.651	2,752,943.046	36.175288807	-107.732187293
12,400.00	90.370	135.220	4,620.77	-5,851.29	3,837.96	1,883,046.671	2,753,013.482	36.175093613	-107.731948884
12,500.00	90.370	135.220	4,620.12	-5,922.27	3,908.40	1,882,975.690	2,753,083.919	36.174898419	-107.731710475
12,600.00	90.370	135.220	4,619.47	-5,993.25	3,978.84	1,882,904.710	2,753,154.355	36.174703225	-107.731472068
12,700.00	90.370	135.220	4,618.83	-6,064.23	4,049.27	1,882,833.729	2,753,224.792	36.174508030	-107.731233661
12,800.00	90.370	135.220	4,618.18	-6,135.21	4,119.71	1,882,762.748	2,753,295.228	36.174312834	-107.730995257
12,900.00	90.370	135.220	4,617.53	-6,206.19	4,190.15	1,882,691.768	2,753,365.664	36.174117639	-107.730756853
13,000.00	90.370	135.220	4,616.89	-6,277.17	4,260.58	1,882,620.787	2,753,436.101	36.173922442	-107.730518450
13,100.00	90.370	135.220	4,616.24	-6,348.15	4,331.02	1,882,549.806	2,753,506.537	36.173727245	-107.730280049
13,200.00	90.370	135.220	4,615.60	-6,419.13	4,401.46	1,882,478.826	2,753,576.974	36.173532048	-107.730041648
13,300.00	90.370	135.220	4,614.95	-6,490.11	4,471.89	1,882,407.845	2,753,647.410	36.173336850	-107.729803249
13,400.00	90.370	135.220	4,614.30	-6,561.09	4,542.33	1,882,336.865	2,753,717.847	36.173141652	-107.729564852
13,500.00	90.370	135.220	4,613.66	-6,632.08	4,612.77	1,882,265.884	2,753,788.283	36.172946453	-107.729326455
13,600.00	90.370	135.220	4,613.01	-6,703.06	4,683.20	1,882,194.903	2,753,858.719	36.172751254	-107.729088059
13,700.00	90.370	135.220	4,612.36	-6,774.04	4,753.64	1,882,123.923	2,753,929.156	36.172556054	-107.728849665
13,800.00	90.370	135.220	4,611.72	-6,845.02	4,824.07	1,882,052.942	2,753,999.592	36.172360854	-107.728611272
13,900.00	90.370	135.220	4,611.07	-6,916.00	4,894.51	1,881,981.961	2,754,070.029	36.172165653	-107.728372880
14,000.00	90.370	135.220	4,610.43	-6,986.98	4,964.95	1,881,910.981	2,754,140.465	36.171970452	-107.728134489
14,100.00	90.370	135.220	4,609.78	-7,057.96	5,035.38	1,881,840.000	2,754,210.902	36.171775250	-107.727896099
14,200.00	90.370	135.220	4,609.13	-7,128.94	5,105.82	1,881,769.019	2,754,281.338	36.171580048	-107.727657711
14,300.00	90.370	135.220	4,608.49	-7,199.92	5,176.26	1,881,698.039	2,754,351.775	36.171384846	-107.727419324
14,400.00	90.370	135.220	4,607.84	-7,270.90	5,246.69	1,881,627.058	2,754,422.211	36.171189643	-107.727180938
14,500.00	90.370	135.220	4,607.20	-7,341.88	5,317.13	1,881,556.078	2,754,492.647	36.170994439	-107.726942553
14,600.00	90.370	135.220	4,606.55	-7,412.86	5,387.57	1,881,485.097	2,754,563.084	36.170799235	-107.726704169
14,700.00	90.370	135.220	4,605.90	-7,483.84	5,458.00	1,881,414.116	2,754,633.520	36.170604031	-107.726465787
14,800.00	90.370	135.220	4,605.26	-7,554.83	5,528.44	1,881,343.136	2,754,703.957	36.170408826	-107.726227405
14,900.00	90.370	135.220	4,604.61	-7,625.81	5,598.88	1,881,272.155	2,754,774.393	36.170213620	-107.725989025
15,000.00	90.370	135.220	4,603.96	-7,696.79	5,669.31	1,881,201.174	2,754,844.830	36.170018414	-107.725750646
15,100.00	90.370	135.220	4,603.32	-7,767.77	5,739.75	1,881,130.194	2,754,915.266	36.169823208	-107.725512269
15,200.00	90.370	135.220	4,602.67	-7,838.75	5,810.19	1,881,059.213	2,754,985.702	36.169628001	-107.725273892

Planning Report - Geographic

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,303.99	90.370	135.220	4,602.00	-7,912.56	5,883.44	1,880,985.399	2,755,058.951	36.169425000	-107.725026000
PBHL/TD 15303.99 MD 4602.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Rodeo 513 LTP 2433 FN - plan hits target center - Point	0.000	0.000	4,602.00	-7,912.56	5,883.44	1,880,985.399	2,755,058.951	36.169425000	-107.725026000
Rodeo 513 FTP 693 FNI - plan misses target center by 0.09ft at 5400.09ft MD (4666.00 TVD, -882.69 N, -1092.54 E) - Point	0.000	0.000	4,666.00	-882.63	-1,092.47	1,888,015.316	2,748,083.055	36.188756000	-107.748640000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Casing	13-5/8	17-1/2
2,758.88	2,626.00	9 5/8" Casing	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
371.00	371.00	Ojo Alamo			
456.00	456.00	Kirtland			
686.00	686.00	Fruitland			
1,036.00	1,036.00	Pictured Cliffs			
1,161.19	1,161.00	Lewis			
1,424.49	1,421.00	Chacra_A			
2,555.15	2,446.00	Cliff House_Basal		0.00	
2,589.11	2,476.00	Menefee			
3,706.25	3,463.00	Point Lookout			
3,834.15	3,576.00	Mancos			
4,230.31	3,926.00	MNCS_A			
4,346.07	4,029.00	MNCS_B			
4,441.42	4,116.00	MNCS_C			
4,474.20	4,146.00	MNCS_Cms			
4,619.18	4,276.00	MNCS_D			
4,804.74	4,426.00	MNCS_E			
4,891.90	4,486.00	MNCS_F			
5,015.45	4,556.00	MNCS_G			
5,107.92	4,601.00	MNCS_H			
5,254.22	4,650.00	MNCS_I			

Planning Report - Geographic

Database:	DB_Feb2822	**Local Co-ordinate Reference:**	Well Rodeo Unit #513H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	**North Reference:**	Grid
Well:	Rodeo Unit #513H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.00	1,000.00	0.00	0.00	KOP Begin 3°/100' build
1,931.08	1,894.64	-39.91	-218.89	Begin 27.93° tangent
4,283.09	3,972.64	-237.51	-1,302.78	Begin 10°/100' build/turn
5,005.35	4,550.95	-586.16	-1,314.45	Begin 60.00° tangent
5,065.35	4,580.95	-631.16	-1,288.48	Begin 10°/100' build/turn
5,400.14	4,666.00	-882.73	-1,092.50	Begin 90.37° lateral
15,303.99	4,602.00	-7,912.56	5,883.44	PBHL/TD 15303.99 MD 4602.00 TVD

ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80211

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) 6,826 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 (LTP): 6-22N-08W Sec-Twn-Rng 2,433 ft FNL 1,917 ft FWL
36.169425 ° N latitude 107.725026 ° 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 (three wells planned to be drilled: 511H, 512H, 513H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	6,455	371	371	W	normal
Kirtland	6,370	456	456	W	normal
Fruitland	6,140	686	686	G, W	sub
Pictured Cliffs	5,790	1,036	1,036	G, W	sub
Lewis	5,665	1,161	1,161	G, W	normal
Chacra	5,405	1,421	1,424	G, W	normal
Cliff House	4,380	2,446	2,555	G, W	sub
Menefee	4,350	2,476	2,589	G, W	normal
Point Lookout	3,363	3,463	3,706	G, W	normal
Mancos	3,250	3,576	3,834	O,G	sub (~0.38)
Gallup (MNCS_A)	2,900	3,926	4,230	O,G	sub (~0.38)
MNCS_B	2,797	4,029	4,346	O,G	sub (~0.38)
MNCS_C	2,710	4,116	4,441	O,G	sub (~0.38)
MNCS_Cms	2,680	4,146	4,474	O,G	sub (~0.38)
MNCS_D	2,550	4,276	4,619	O,G	sub (~0.38)
MNCS_E	2,400	4,426	4,805	O,G	sub (~0.38)
MNCS_F	2,340	4,486	4,892	O,G	sub (~0.38)
MNCS_G	2,270	4,556	5,015	O,G	sub (~0.38)
MNCS_H	2,225	4,601	5,108	O,G	sub (~0.38)
MNCS_I	2,176	4,650	5,254	O,G	sub (~0.38)
FTP (LP) TARGET	**2,160**	**4,666**	**5,400**	**O,G**	**sub (~0.38)**
LTP (TD) TARGET	**2,224**	**4,602**	**15,304**	**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; gas detection from drill out of 13-3/8" casing to TD; remote geo-steering from drill out of 9-5/8" casing to TD.

MWD / LWD: MWD surveys with inclination and azimuth in 100' stations (minimum) from drill out of 13-3/8" casing to TD; Gamma Ray from drill out of 9-5/8" casing to TD; Gamma Ray optional in 12-1/4" intermediate hole

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 & double gate ram (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: Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

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.
3) 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.
4) 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.
5) 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.
6) 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 and fluid program from Newpark. Sufficient weighting agent will be on location to weight up mud system to balance the maximum expected pressure gradient.

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	571	116,634	116,634
Min. S.F.					**7.39**	**4.78**	**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 Details: 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)
TYPE III	14.6	1.39	6.686	0.6946	100%	0	350

Calculated cement volumes assume gauge hole and the excess noted in table
Drake Endergy Services Surface 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**	**2,759 ft (MD)**	**Hole Section Length:**	**2,409 ft**

350 ft (TVD)	to	2,626 ft (TVD)	Casing Required:	2,759 ft

**TARGET CSG SHOE DEPTH IS 150' TVD BELOW MENEFEE TOP*

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	No OBM

Hole Size: 12-1/4"
Bit / Motor: PDC w/mud motor
MWD / Survey: MWD surveys with inclination and azimuth in 100' stations (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					1,147	1,140	186,615	186,615
Min. S.F.					**1.76**	**3.09**	**3.02**	**2.43**

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: 3,900 Optimum: 5,200 Maximum: 6,500*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 1 centralizers jt stop-banded 10' from float shoe on bottom 1 jt & 1 centralizer floating on bottom joint, 1 centralizer per jt (floating) to KOP ; 1 centralizer per 2 jts (floating) to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	III:POZ Blend	12.5	2.140	12.05	70%	0	562
Tail	Type III	14.6	1.380	6.64	20%	2,259	136

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
Drake Intermediate Cementing Program
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.*

2,759 ft (MD)	to	15,304 ft (MD)	Hole Section Length:	12,545 ft
2,626 ft (TVD)	to	4,602 ft (TVD)	Casing Required:	15,304 ft

Estimated KOP:	4,283	ft (MD)	3,973	ft (TVD)
Estimated Landing Point (FTP):	5,400	ft (MD)	4,666	ft (TVD)
Estimated Lateral Length:	9,904	ft (MD)		

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	ES	OWR
	OBM	8.7 - 9.0	10 - 15	10 - 20	6 - 10	500+	80:20

Hole Size: 8-1/2"
Bit / Motor: PDC w/mud motor
MWD / Survey: MWD surveys with inclination and azimuth in 100' stations (minimum) before KOP, every joint from KOP to POE, every 100' (minimum) from POE to TD; Gamma Ray from drill out of 9-5/8" shoe to TD
Logging: MWD Gamma Ray 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					2,273	8,931	374,501	374,501

Min. S.F.	**3.28**	**1.19**	**1.46**	**1.19**

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 150,000 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, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve , casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation sub at KOP (+/-), casing to surface. The toe-initiation sleeve shall be placed no closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the the azimuth of the well. ***Note: the LTP is the maximum depth of the toe sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place the toe sleeve as close to (but not past) the planned LTP as possible.***

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys* ***(ARSENAL***
Lateral: 1 centralizer per joint
POE to 9-5/8" shoe: 1 centralizer per joint
9-5/8" shoe to surface: 1 centralizer per 2 joints

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**
Lead	Type I / II	12.4	2.360	13.40	65%	0	614
Tail	G:POZ blend	13.3	1.560	7.70	10%	3,834	1,853

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
American Cementing Liner & Production Blend
Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as defintied by NMAC19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ***ND BOP. RDMO Drilling Rig.***

COMPLETION AND PRODUCTION PLAN:

Frac: 40 plug-and-perf stages with 360,000 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: 7/1/2022
Completion: 8/15/2022
Production: 9/29/2022

Prepared by: **Alec Bridge** **2/7/2020**
Updated by: **Alec Bridge** **3/31/2022** *- updated drilling prog & directional plans for new development plan & current program*

WELL NAME: RODEO UNIT 513H

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

API Number: 30-045-35873

State: New Mexico

County: San Juan

Surface Elev.:	6,798	ft ASL (GL)	6,826	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	2433	ft FNL	1917	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 (three wells planned to be drilled: 511H, 512H, 513H).

QUICK REFERENCE		
Sur TD (MD)	350	ft
Int TD (MD)	2,759	ft
KOP (MD)	4,283	ft
KOP (TVD)	3,973	ft
Target (TVD)	4,666	ft
Curve BUR	10	°/100 ft
POE (MD)	5,400	ft
TD (MD)	15,304	ft
Lat Len (ft)	9,904	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	2,759	9.625	36.0	J-55	LTC	0	2,759
Production	8.500	15,304	5.500	17.0	P-110	LTC	0	15,304

CEMENT PROPERTIES SUMMARY:

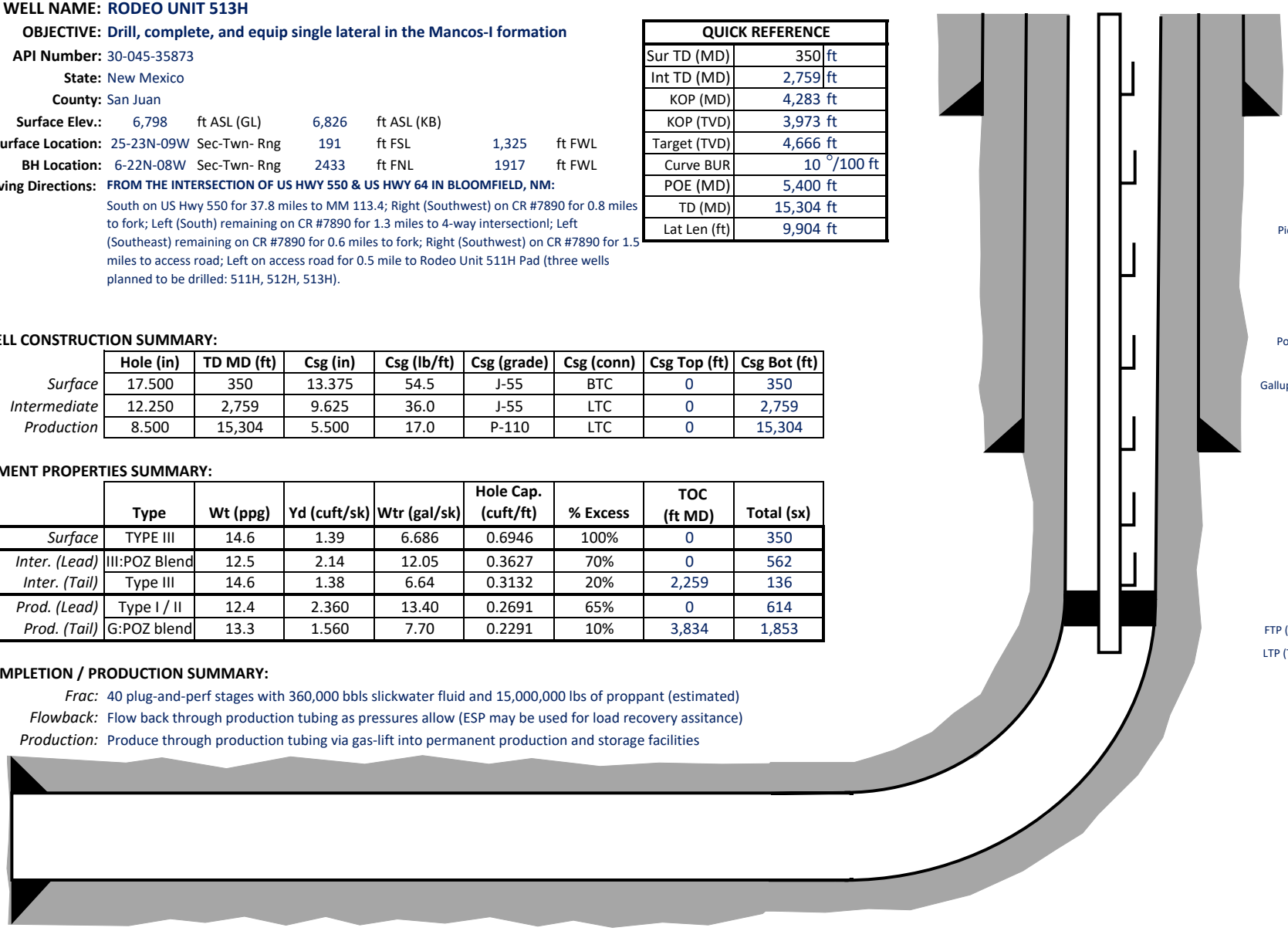
	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	TYPE III	14.6	1.39	6.686	0.6946	100%	0	350
Inter. (Lead)	III:POZ Blend	12.5	2.14	12.05	0.3627	70%	0	562
Inter. (Tail)	Type III	14.6	1.38	6.64	0.3132	20%	2,259	136
Prod. (Lead)	Type I / II	12.4	2.360	13.40	0.2691	65%	0	614
Prod. (Tail)	G:POZ blend	13.3	1.560	7.70	0.2291	10%	3,834	1,853

COMPLETION / PRODUCTION SUMMARY:

Frac: 40 plug-and-perf stages with 360,000 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	371	371
Kirtland	456	456
Fruitland	686	686
Pictured Cliffs	1,036	1,036
Lewis	1,161	1,161
Chacra	1,421	1,424
Cliff House	2,446	2,555
Menefee	2,476	2,589
Point Lookout	3,463	3,706
Mancos	3,576	3,834
Gallup (MNCS_A)	3,926	4,230
MNCS_B	4,029	4,346
MNCS_C	4,116	4,441
MNCS_Cms	4,146	4,474
MNCS_D	4,276	4,619
MNCS_E	4,426	4,805
MNCS_F	4,486	4,892
MNCS_G	4,556	5,015
MNCS_H	4,601	5,108
MNCS_I	4,650	5,254
FTP (LP) TARGET	4,666	5,400
LTP (TD) TARGET	4,602	15,304

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

CONDITIONS

Action 96547

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 96547
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	• NSL Will require an administrative order for non-standard location prior to placing the well on production.	4/12/2022
kpickford	Adhere to previous NMOCD Conditions of Approval	4/12/2022