

Form 3160-5
(June 2019)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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.

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☐ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

3a. Address

3b. Phone No. (include area code)

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

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

8. Well Name and No.

9. API Well No.

10. Field and Pool or Exploratory Area

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	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ 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 recompleat 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 recompleat 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 OFFICE 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 of this form to U.S. Department of the Interior, Bureau of Land 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: SESE / 1047 FSL / 356 FEL / TWSP: 22N / RANGE: 7W / SECTION: 2 / LAT: 36.163949 / LONG: -107.536736 (TVD: 5078 feet, MD: 11819 feet)

PPP: SWNE / 782 FNL / 356 FWL / TWSP: 22N / RANGE: 7W / SECTION: 2 / LAT: 36.163207 / LONG: -107.536216 (TVD: 5078 feet, MD: 11818 feet)

BHL: NWNW / 49 FNL / 330 FWL / TWSP: 22N / RANGE: 7W / SECTION: 2 / LAT: 36.175645 / LONG: -107.552084 (TVD: 5078 feet, MD: 11818 feet)

CONFIDENTIAL

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

☐ AMENDED REPORT

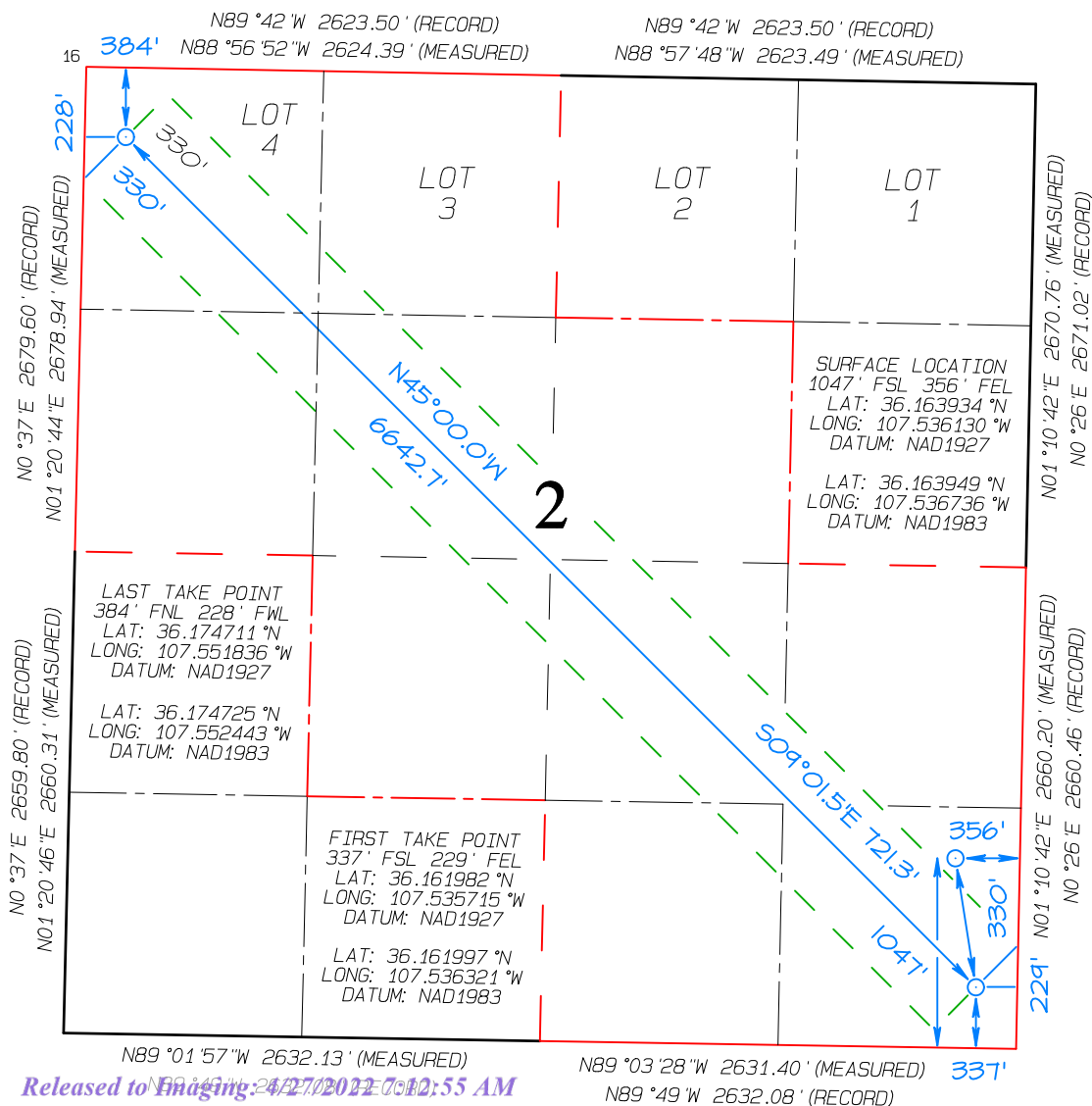
¹ API Number		² Pool Code 42289		³ Pool Name LYBROOK GALLUP	
⁴ Property Code		⁵ Property Name S CHACO UNIT			⁶ Well Number 908H
⁷ GRID No. 372286		⁸ Operator Name ENDURING RESOURCES, LLC			⁹ Elevation 7003'

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	2	22N	7W		1047	SOUTH	356	EAST	SANDOVAL

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	2	22N	7W	4	384	NORTH	228	WEST	SANDOVAL

¹² Dedicated Acres 401.03	NW/4, SW/4 NE/4 NE/4 SW/4, SE/4	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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



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 Suthivan 4/21/2021

Signature _____ Date _____

Khem Suthiwan

Printed Name
ksuthiwan@enduringresources.com

E-mail Address

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 8, 2022
Date of Survey: JUNE 12, 2015

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

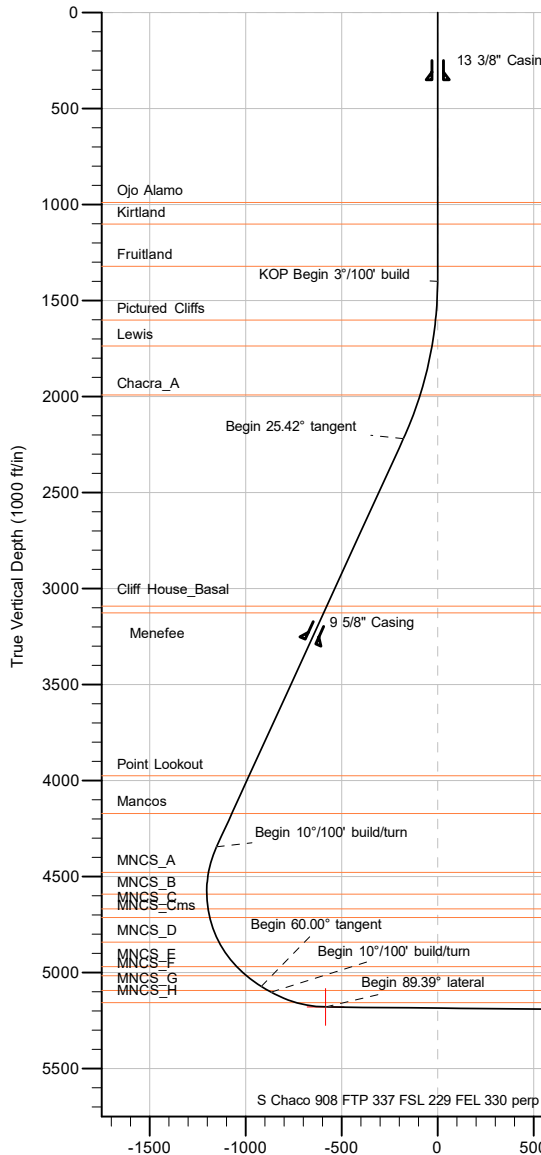
Certificate Number	15269
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Well: S Chaco Unit 908 H
Site: S Chaco Unit 344 Pad (344, 345 & 908)
Project: Sandoval County, New Mexico NAD83 NM W
Design: rev0
Rig:

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
S Chaco 908 FTP 337 FSL 229 FEL 330 perp	5179.00	-710.19	124.67	1878397.732	2810764.260	36.161997000	-107.536321000
S Chaco 908 PBHL 384 FNL 228 FWL 330 perp	5250.00	3908.89	-4647.67	1883016.807	2805991.924	36.174725000	-107.552443000



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=7003+28 @ 7031.00ft
 Surface location:
 Northing 1879107.923 Easting 2810639.589 Latitude 36.163949000 Longitude -107.536736000

Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 8.46°



Azimuths to Grid North
 True North: -0.18°
 Magnetic North: 8.46°
 Magnetic Field
 Strength: 49222.0nT
 Dip Angle: 62.72°
 Date: 3/9/2022
 Model: IGRF2020

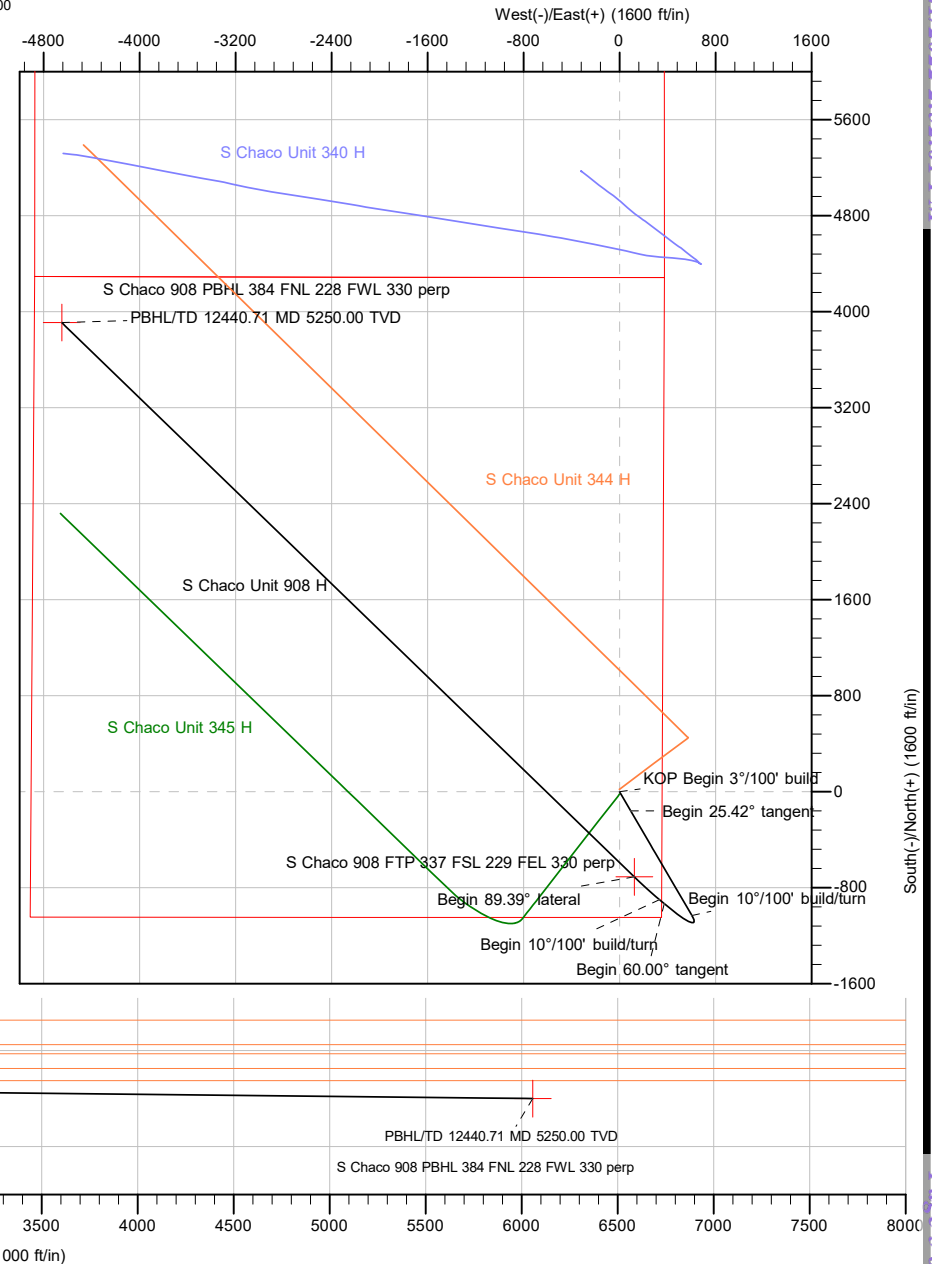
CASING DETAILS

TVD	MD	Name
350.00	350.00	13 3/8" Casing
3276.00	3416.75	9 5/8" Casing



Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	1400.00	0.00	0.000	1400.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 3°/100' build
3	2247.37	25.42	149.681	2219.85	-159.63	93.35	3.00	149.68	-178.09	Begin 25.42° tangent
4	4600.57	25.42	149.681	4345.20	-1031.62	603.30	0.00	0.00	-1150.97	Begin 10°/100' build/turn
5	5442.60	60.00	310.242	5071.66	-933.82	373.24	10.00	163.16	-917.64	Begin 60.00° tangent
6	5502.60	60.00	310.242	5101.66	-900.25	333.58	0.00	0.00	-865.79	Begin 10°/100' build/turn
7	5798.71	89.39	314.065	5179.00	-710.20	124.65	10.00	7.75	-583.50	Begin 89.39° lateral
8	12440.71	89.39	314.065	5250.00	3908.89	-4647.67	0.00	0.00	6058.12	PBHL/TD



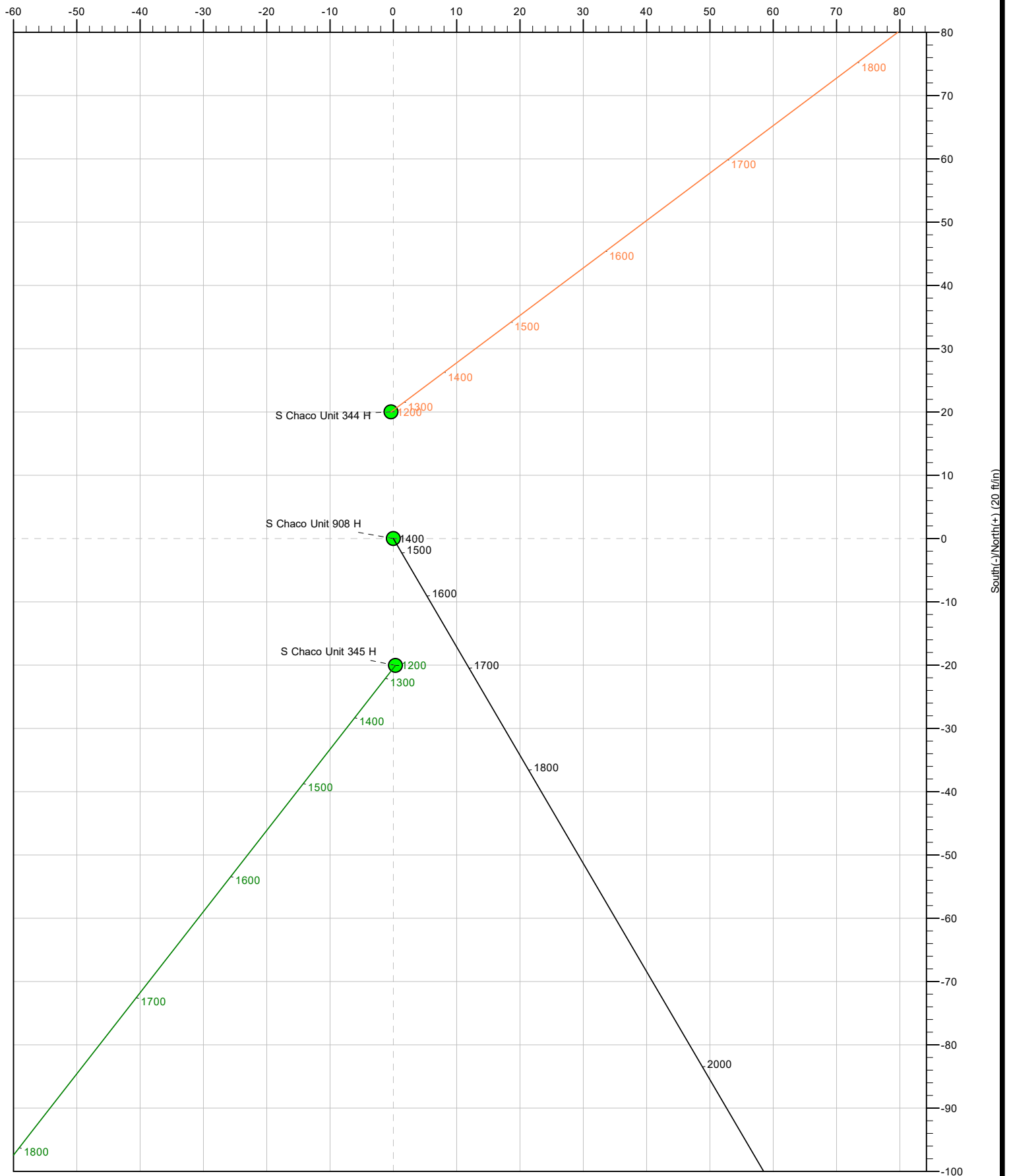
Vertical Section at 314.065° (1000 ft/in)



Well: S Chaco Unit 908 H
Site: S Chaco Unit 344 Pad (344, 345 & 908)
Project: Sandoval County, New Mexico NAD83 NM W
Design: rev0
Rig:



West(-)/East(+) (20 ft/in)





Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project	Sandoval 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	S Chaco Unit 344 Pad (344, 345 & 908)				
Site Position:		Northing:	1,879,087.903 usft	Latitude:	36.163894000
From:	Lat/Long	Easting:	2,810,639.945 usft	Longitude:	-107.536735000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	S Chaco Unit 908 H, Surf loc: 1047 FSL 356 FEL Section 02-T22N-R07W					
Well Position	+N/-S	0.00 ft	Northing:	1,879,107.923 usft	Latitude:	36.163949000
	+E/-W	0.00 ft	Easting:	2,810,639.589 usft	Longitude:	-107.536736000
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	7,003.00 ft
Grid Convergence:		0.18 °				

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/9/2022	8.63	62.72	49,222.03454503

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	314.065

Plan Survey Tool Program	Date	3/9/2022			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	12,440.71	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	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,247.37	25.42	149.681	2,219.85	-159.63	93.35	3.00	3.00	0.00	149.68	
4,600.57	25.42	149.681	4,345.20	-1,031.62	603.30	0.00	0.00	0.00	0.00	
5,442.60	60.00	310.242	5,071.66	-933.82	373.24	10.00	4.11	19.07	163.16	
5,502.60	60.00	310.242	5,101.66	-900.25	333.58	0.00	0.00	0.00	0.00	
5,798.71	89.39	314.065	5,179.00	-710.20	124.65	10.00	9.92	1.29	7.75	
12,440.71	89.39	314.065	5,250.00	3,908.89	-4,647.67	0.00	0.00	0.00	0.00	S Chaco 908 PBHL 3i



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
989.00	0.00	0.000	989.00	0.00	0.00	0.00	0.00	0.00	0.00
Ojo Alamo									
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,101.00	0.00	0.000	1,101.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland									
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,321.00	0.00	0.000	1,321.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland									
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3°/100' build									
1,500.00	3.00	149.681	1,499.95	-2.26	1.32	-2.52	3.00	3.00	0.00
1,600.00	6.00	149.681	1,599.63	-9.03	5.28	-10.08	3.00	3.00	0.00
1,601.37	6.04	149.681	1,601.00	-9.16	5.35	-10.21	3.00	3.00	0.00
Pictured Cliffs									
1,700.00	9.00	149.681	1,698.77	-20.30	11.87	-22.65	3.00	3.00	0.00
1,737.76	10.13	149.681	1,736.00	-25.71	15.04	-28.69	3.00	3.00	0.00
Lewis									
1,800.00	12.00	149.681	1,797.08	-36.03	21.07	-40.19	3.00	3.00	0.00
1,900.00	15.00	149.681	1,894.31	-56.18	32.85	-62.67	3.00	3.00	0.00
2,000.00	18.00	149.681	1,990.18	-80.69	47.19	-90.02	3.00	3.00	0.00
2,000.86	18.03	149.681	1,991.00	-80.92	47.32	-90.28	3.00	3.00	0.00
Chacra_A									
2,100.00	21.00	149.681	2,084.43	-109.50	64.04	-122.17	3.00	3.00	0.00
2,200.00	24.00	149.681	2,176.81	-142.53	83.35	-159.02	3.00	3.00	0.00
2,247.37	25.42	149.681	2,219.85	-159.63	93.35	-178.09	3.00	3.00	0.00
Begin 25.42° tangent									
2,300.00	25.42	149.681	2,267.38	-179.13	104.75	-199.85	0.00	0.00	0.00
2,400.00	25.42	149.681	2,357.69	-216.18	126.43	-241.19	0.00	0.00	0.00
2,500.00	25.42	149.681	2,448.01	-253.24	148.10	-282.54	0.00	0.00	0.00
2,600.00	25.42	149.681	2,538.33	-290.30	169.77	-323.88	0.00	0.00	0.00
2,700.00	25.42	149.681	2,628.65	-327.35	191.44	-365.22	0.00	0.00	0.00
2,800.00	25.42	149.681	2,718.96	-364.41	213.11	-406.56	0.00	0.00	0.00
2,900.00	25.42	149.681	2,809.28	-401.46	234.78	-447.91	0.00	0.00	0.00
3,000.00	25.42	149.681	2,899.60	-438.52	256.45	-489.25	0.00	0.00	0.00
3,100.00	25.42	149.681	2,989.92	-475.57	278.12	-530.59	0.00	0.00	0.00
3,200.00	25.42	149.681	3,080.23	-512.63	299.79	-571.93	0.00	0.00	0.00
3,211.92	25.42	149.681	3,091.00	-517.05	302.37	-576.86	0.00	0.00	0.00
Cliff House_Basal									
3,250.67	25.42	149.681	3,126.00	-531.41	310.77	-592.88	0.00	0.00	0.00
Menefee									
3,300.00	25.42	149.681	3,170.55	-549.69	321.46	-613.28	0.00	0.00	0.00



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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	25.42	149.681	3,260.87	-586.74	343.13	-654.62	0.00	0.00	0.00
3,500.00	25.42	149.681	3,351.19	-623.80	364.80	-695.96	0.00	0.00	0.00
3,600.00	25.42	149.681	3,441.50	-660.85	386.47	-737.30	0.00	0.00	0.00
3,700.00	25.42	149.681	3,531.82	-697.91	408.14	-778.65	0.00	0.00	0.00
3,800.00	25.42	149.681	3,622.14	-734.96	429.81	-819.99	0.00	0.00	0.00
3,900.00	25.42	149.681	3,712.46	-772.02	451.48	-861.33	0.00	0.00	0.00
4,000.00	25.42	149.681	3,802.77	-809.07	473.15	-902.67	0.00	0.00	0.00
4,100.00	25.42	149.681	3,893.09	-846.13	494.82	-944.02	0.00	0.00	0.00
4,190.69	25.42	149.681	3,975.00	-879.74	514.47	-981.51	0.00	0.00	0.00
Point Lookout									
4,200.00	25.42	149.681	3,983.41	-883.19	516.49	-985.36	0.00	0.00	0.00
4,300.00	25.42	149.681	4,073.73	-920.24	538.16	-1,026.70	0.00	0.00	0.00
4,400.00	25.42	149.681	4,164.05	-957.30	559.83	-1,068.04	0.00	0.00	0.00
4,407.70	25.42	149.681	4,171.00	-960.15	561.50	-1,071.23	0.00	0.00	0.00
Mancos									
4,500.00	25.42	149.681	4,254.36	-994.35	581.50	-1,109.39	0.00	0.00	0.00
4,600.57	25.42	149.681	4,345.20	-1,031.62	603.30	-1,150.97	0.00	0.00	0.00
Begin 10°/100' build/turn									
4,650.00	20.74	153.723	4,390.66	-1,048.64	612.53	-1,169.43	10.00	-9.48	8.18
4,700.00	16.15	160.042	4,438.08	-1,063.12	618.83	-1,184.03	10.00	-9.18	12.64
4,741.21	12.59	168.517	4,478.00	-1,072.91	621.68	-1,192.89	10.00	-8.62	20.57
MNCS_A									
4,750.00	11.88	170.954	4,486.59	-1,074.74	622.01	-1,194.40	10.00	-8.10	27.71
4,800.00	8.45	191.955	4,535.82	-1,083.42	622.06	-1,200.48	10.00	-6.87	42.00
4,850.00	7.16	228.256	4,585.38	-1,089.09	618.97	-1,202.20	10.00	-2.57	72.60
4,855.66	7.22	232.756	4,591.00	-1,089.54	618.43	-1,202.12	10.00	1.06	79.47
MNCS_B									
4,900.00	9.00	262.047	4,634.91	-1,091.71	612.77	-1,199.57	10.00	4.01	66.06
4,933.61	11.35	275.755	4,668.00	-1,091.74	606.88	-1,195.35	10.00	7.00	40.78
MNCS_C									
4,950.00	12.66	280.483	4,684.03	-1,091.26	603.51	-1,192.59	10.00	8.01	28.86
4,979.85	15.21	286.948	4,713.00	-1,089.52	596.54	-1,186.38	10.00	8.55	21.66
MNCS_Cms									
5,000.00	17.01	290.212	4,732.36	-1,087.73	591.25	-1,181.33	10.00	8.94	16.20
5,050.00	21.64	295.977	4,779.53	-1,081.16	576.08	-1,165.86	10.00	9.25	11.53
5,100.00	26.40	299.767	4,825.19	-1,071.60	558.14	-1,146.32	10.00	9.52	7.58
5,117.79	28.11	300.823	4,841.00	-1,067.49	551.10	-1,138.41	10.00	9.62	5.94
MNCS_D									
5,150.00	31.23	302.462	4,868.99	-1,059.11	537.54	-1,122.83	10.00	9.68	5.09
5,200.00	36.10	304.495	4,910.59	-1,043.80	514.45	-1,095.59	10.00	9.74	4.07
5,250.00	41.00	306.102	4,949.68	-1,025.79	489.04	-1,064.81	10.00	9.80	3.21
5,276.11	43.57	306.820	4,969.00	-1,015.35	474.91	-1,047.40	10.00	9.83	2.75
MNCS_E									
5,300.00	45.92	307.420	4,985.97	-1,005.20	461.51	-1,030.70	10.00	9.84	2.51
5,345.01	50.36	308.431	5,016.00	-984.59	435.08	-997.38	10.00	9.86	2.25
MNCS_F									
5,350.00	50.85	308.535	5,019.17	-982.19	432.06	-993.55	10.00	9.87	2.08
5,400.00	55.79	309.503	5,049.03	-956.95	400.92	-953.62	10.00	9.88	1.94
5,442.60	60.00	310.242	5,071.66	-933.82	373.24	-917.64	10.00	9.89	1.73
Begin 60.00° tangent									
5,485.28	60.00	310.242	5,093.00	-909.94	345.03	-880.76	0.00	0.00	0.00
MNCS_G									
5,502.60	60.00	310.242	5,101.66	-900.25	333.58	-865.79	0.00	0.00	0.00



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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)
Begin 10°/100' build/turn									
5,550.00	64.70	310.949	5,123.65	-872.93	301.71	-823.89	10.00	9.91	1.49
5,600.00	69.66	311.637	5,143.04	-842.52	267.10	-777.88	10.00	9.92	1.38
5,641.30	73.76	312.173	5,156.00	-816.34	237.92	-738.70	10.00	9.92	1.30
MNCS_H									
5,650.00	74.62	312.283	5,158.37	-810.71	231.72	-730.33	10.00	9.93	1.26
5,700.00	79.58	312.898	5,169.53	-777.74	195.85	-681.62	10.00	9.93	1.23
5,750.00	84.55	313.494	5,176.43	-743.85	159.76	-632.12	10.00	9.93	1.19
5,798.71	89.39	314.065	5,179.00	-710.20	124.65	-583.50	10.00	9.93	1.17
Begin 89.39° lateral									
5,800.00	89.39	314.065	5,179.02	-709.31	123.73	-582.21	0.00	0.00	0.00
5,900.00	89.39	314.065	5,180.08	-639.76	51.88	-482.21	0.00	0.00	0.00
6,000.00	89.39	314.065	5,181.15	-570.22	-19.97	-382.22	0.00	0.00	0.00
6,100.00	89.39	314.065	5,182.22	-500.67	-91.83	-282.23	0.00	0.00	0.00
6,200.00	89.39	314.065	5,183.29	-431.13	-163.68	-182.23	0.00	0.00	0.00
6,300.00	89.39	314.065	5,184.36	-361.59	-235.53	-82.24	0.00	0.00	0.00
6,400.00	89.39	314.065	5,185.43	-292.04	-307.38	17.76	0.00	0.00	0.00
6,500.00	89.39	314.065	5,186.50	-222.50	-379.23	117.75	0.00	0.00	0.00
6,600.00	89.39	314.065	5,187.57	-152.96	-451.08	217.75	0.00	0.00	0.00
6,700.00	89.39	314.065	5,188.64	-83.41	-522.93	317.74	0.00	0.00	0.00
6,800.00	89.39	314.065	5,189.70	-13.87	-594.78	417.73	0.00	0.00	0.00
6,900.00	89.39	314.065	5,190.77	55.67	-666.63	517.73	0.00	0.00	0.00
7,000.00	89.39	314.065	5,191.84	125.22	-738.48	617.72	0.00	0.00	0.00
7,100.00	89.39	314.065	5,192.91	194.76	-810.33	717.72	0.00	0.00	0.00
7,200.00	89.39	314.065	5,193.98	264.31	-882.18	817.71	0.00	0.00	0.00
7,300.00	89.39	314.065	5,195.05	333.85	-954.03	917.71	0.00	0.00	0.00
7,400.00	89.39	314.065	5,196.12	403.39	-1,025.88	1,017.70	0.00	0.00	0.00
7,500.00	89.39	314.065	5,197.19	472.94	-1,097.74	1,117.69	0.00	0.00	0.00
7,600.00	89.39	314.065	5,198.26	542.48	-1,169.59	1,217.69	0.00	0.00	0.00
7,700.00	89.39	314.065	5,199.32	612.02	-1,241.44	1,317.68	0.00	0.00	0.00
7,800.00	89.39	314.065	5,200.39	681.57	-1,313.29	1,417.68	0.00	0.00	0.00
7,900.00	89.39	314.065	5,201.46	751.11	-1,385.14	1,517.67	0.00	0.00	0.00
8,000.00	89.39	314.065	5,202.53	820.66	-1,456.99	1,617.67	0.00	0.00	0.00
8,100.00	89.39	314.065	5,203.60	890.20	-1,528.84	1,717.66	0.00	0.00	0.00
8,200.00	89.39	314.065	5,204.67	959.74	-1,600.69	1,817.65	0.00	0.00	0.00
8,300.00	89.39	314.065	5,205.74	1,029.29	-1,672.54	1,917.65	0.00	0.00	0.00
8,400.00	89.39	314.065	5,206.81	1,098.83	-1,744.39	2,017.64	0.00	0.00	0.00
8,500.00	89.39	314.065	5,207.88	1,168.37	-1,816.24	2,117.64	0.00	0.00	0.00
8,600.00	89.39	314.065	5,208.95	1,237.92	-1,888.09	2,217.63	0.00	0.00	0.00
8,700.00	89.39	314.065	5,210.01	1,307.46	-1,959.94	2,317.63	0.00	0.00	0.00
8,800.00	89.39	314.065	5,211.08	1,377.01	-2,031.80	2,417.62	0.00	0.00	0.00
8,900.00	89.39	314.065	5,212.15	1,446.55	-2,103.65	2,517.61	0.00	0.00	0.00
9,000.00	89.39	314.065	5,213.22	1,516.09	-2,175.50	2,617.61	0.00	0.00	0.00
9,100.00	89.39	314.065	5,214.29	1,585.64	-2,247.35	2,717.60	0.00	0.00	0.00
9,200.00	89.39	314.065	5,215.36	1,655.18	-2,319.20	2,817.60	0.00	0.00	0.00
9,300.00	89.39	314.065	5,216.43	1,724.72	-2,391.05	2,917.59	0.00	0.00	0.00
9,400.00	89.39	314.065	5,217.50	1,794.27	-2,462.90	3,017.59	0.00	0.00	0.00
9,500.00	89.39	314.065	5,218.57	1,863.81	-2,534.75	3,117.58	0.00	0.00	0.00
9,600.00	89.39	314.065	5,219.63	1,933.36	-2,606.60	3,217.57	0.00	0.00	0.00
9,700.00	89.39	314.065	5,220.70	2,002.90	-2,678.45	3,317.57	0.00	0.00	0.00
9,800.00	89.39	314.065	5,221.77	2,072.44	-2,750.30	3,417.56	0.00	0.00	0.00
9,900.00	89.39	314.065	5,222.84	2,141.99	-2,822.15	3,517.56	0.00	0.00	0.00
10,000.00	89.39	314.065	5,223.91	2,211.53	-2,894.00	3,617.55	0.00	0.00	0.00



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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)
10,100.00	89.39	314.065	5,224.98	2,281.07	-2,965.85	3,717.55	0.00	0.00	0.00
10,200.00	89.39	314.065	5,226.05	2,350.62	-3,037.71	3,817.54	0.00	0.00	0.00
10,300.00	89.39	314.065	5,227.12	2,420.16	-3,109.56	3,917.53	0.00	0.00	0.00
10,400.00	89.39	314.065	5,228.19	2,489.70	-3,181.41	4,017.53	0.00	0.00	0.00
10,500.00	89.39	314.065	5,229.26	2,559.25	-3,253.26	4,117.52	0.00	0.00	0.00
10,600.00	89.39	314.065	5,230.32	2,628.79	-3,325.11	4,217.52	0.00	0.00	0.00
10,700.00	89.39	314.065	5,231.39	2,698.34	-3,396.96	4,317.51	0.00	0.00	0.00
10,800.00	89.39	314.065	5,232.46	2,767.88	-3,468.81	4,417.51	0.00	0.00	0.00
10,900.00	89.39	314.065	5,233.53	2,837.42	-3,540.66	4,517.50	0.00	0.00	0.00
11,000.00	89.39	314.065	5,234.60	2,906.97	-3,612.51	4,617.49	0.00	0.00	0.00
11,100.00	89.39	314.065	5,235.67	2,976.51	-3,684.36	4,717.49	0.00	0.00	0.00
11,200.00	89.39	314.065	5,236.74	3,046.05	-3,756.21	4,817.48	0.00	0.00	0.00
11,300.00	89.39	314.065	5,237.81	3,115.60	-3,828.06	4,917.48	0.00	0.00	0.00
11,400.00	89.39	314.065	5,238.88	3,185.14	-3,899.91	5,017.47	0.00	0.00	0.00
11,500.00	89.39	314.065	5,239.94	3,254.69	-3,971.77	5,117.47	0.00	0.00	0.00
11,600.00	89.39	314.065	5,241.01	3,324.23	-4,043.62	5,217.46	0.00	0.00	0.00
11,700.00	89.39	314.065	5,242.08	3,393.77	-4,115.47	5,317.45	0.00	0.00	0.00
11,800.00	89.39	314.065	5,243.15	3,463.32	-4,187.32	5,417.45	0.00	0.00	0.00
11,900.00	89.39	314.065	5,244.22	3,532.86	-4,259.17	5,517.44	0.00	0.00	0.00
12,000.00	89.39	314.065	5,245.29	3,602.40	-4,331.02	5,617.44	0.00	0.00	0.00
12,100.00	89.39	314.065	5,246.36	3,671.95	-4,402.87	5,717.43	0.00	0.00	0.00
12,200.00	89.39	314.065	5,247.43	3,741.49	-4,474.72	5,817.43	0.00	0.00	0.00
12,300.00	89.39	314.065	5,248.50	3,811.04	-4,546.57	5,917.42	0.00	0.00	0.00
12,400.00	89.39	314.065	5,249.56	3,880.58	-4,618.42	6,017.41	0.00	0.00	0.00
12,440.71	89.39	314.065	5,250.00	3,908.89	-4,647.67	6,058.12	0.00	0.00	0.00
PBHL/TD 12440.71 MD 5250.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
S Chaco 908 FTP 337 F	0.00	0.000	5,179.00	-710.19	124.67	1,878,397.732	2,810,764.261	36.161997000	-107.536321000
- plan misses target center by 0.02ft at 5798.70ft MD (5179.00 TVD, -710.21 N, 124.66 E)									
- Point									
S Chaco 908 PBHL 384	0.00	0.000	5,250.00	3,908.89	-4,647.67	1,883,016.807	2,805,991.924	36.174725000	-107.552443000
- plan hits target center									
- Point									

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	
3,416.75	3,276.00	9 5/8" Casing	9-5/8	12-1/4	



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
989.00	989.00	Ojo Alamo				
1,101.00	1,101.00	Kirtland				
1,321.00	1,321.00	Fruitland				
1,601.37	1,601.00	Pictured Cliffs				
1,737.76	1,736.00	Lewis				
2,000.86	1,991.00	Chacra_A				
3,211.92	3,091.00	Cliff House_Basal				
3,250.67	3,126.00	Menefee				
4,190.69	3,975.00	Point Lookout				
4,407.70	4,171.00	Mancos				
4,741.21	4,478.00	MNCS_A				
4,855.66	4,591.00	MNCS_B				
4,933.61	4,668.00	MNCS_C				
4,979.85	4,713.00	MNCS_Cms				
5,117.79	4,841.00	MNCS_D				
5,276.11	4,969.00	MNCS_E				
5,345.01	5,016.00	MNCS_F				
5,485.28	5,093.00	MNCS_G				
5,641.30	5,156.00	MNCS_H				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,400.00	1,400.00	0.00	0.00	KOP Begin 3°/100' build	
2,247.37	2,219.85	-159.63	93.35	Begin 25.42° tangent	
4,600.57	4,345.20	-1,031.62	603.30	Begin 10°/100' build/turn	
5,442.60	5,071.66	-933.82	373.24	Begin 60.00° tangent	
5,502.60	5,101.66	-900.25	333.58	Begin 10°/100' build/turn	
5,798.71	5,179.00	-710.20	124.65	Begin 89.39° lateral	
12,440.71	5,250.00	3,908.89	-4,647.67	PBHL/TD 12440.71 MD 5250.00 TVD	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project	Sandoval 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	S Chaco Unit 344 Pad (344, 345 & 908)				
Site Position:		Northing:	1,879,087.903 usft	Latitude:	36.163894000
From:	Lat/Long	Easting:	2,810,639.945 usft	Longitude:	-107.536735000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	S Chaco Unit 908 H, Surf loc: 1047 FSL 356 FEL Section 02-T22N-R07W					
Well Position	+N/-S	0.00 ft	Northing:	1,879,107.923 usft	Latitude:	36.163949000
	+E/-W	0.00 ft	Easting:	2,810,639.589 usft	Longitude:	-107.536736000
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	7,003.00 ft
Grid Convergence:		0.18 °				

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/9/2022	8.63	62.72	49,222.03454503

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	314.065

Plan Survey Tool Program	Date	3/9/2022		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,440.71 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	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,247.37	25.42	149.681	2,219.85	-159.63	93.35	3.00	3.00	0.00	149.68	
4,600.57	25.42	149.681	4,345.20	-1,031.62	603.30	0.00	0.00	0.00	0.00	
5,442.60	60.00	310.242	5,071.66	-933.82	373.24	10.00	4.11	19.07	163.16	
5,502.60	60.00	310.242	5,101.66	-900.25	333.58	0.00	0.00	0.00	0.00	
5,798.71	89.39	314.065	5,179.00	-710.20	124.65	10.00	9.92	1.29	7.75	
12,440.71	89.39	314.065	5,250.00	3,908.89	-4,647.67	0.00	0.00	0.00	0.00	S Chaco 908 PBHL 3i



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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	0.00	0.000	0.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
100.00	0.00	0.000	100.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
200.00	0.00	0.000	200.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
300.00	0.00	0.000	300.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
400.00	0.00	0.000	400.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
500.00	0.00	0.000	500.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
600.00	0.00	0.000	600.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
700.00	0.00	0.000	700.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
800.00	0.00	0.000	800.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
900.00	0.00	0.000	900.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
989.00	0.00	0.000	989.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
Ojo Alamo									
1,000.00	0.00	0.000	1,000.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
1,100.00	0.00	0.000	1,100.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
1,101.00	0.00	0.000	1,101.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
Kirtland									
1,200.00	0.00	0.000	1,200.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
1,300.00	0.00	0.000	1,300.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
1,321.00	0.00	0.000	1,321.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
Fruitland									
1,400.00	0.00	0.000	1,400.00	0.00	0.00	1,879,107.923	2,810,639.589	36.163949000	-107.536736000
KOP Begin 3°/100' build									
1,500.00	3.00	149.681	1,499.95	-2.26	1.32	1,879,105.663	2,810,640.910	36.163942782	-107.536731547
1,600.00	6.00	149.681	1,599.63	-9.03	5.28	1,879,098.891	2,810,644.870	36.163924145	-107.536718201
1,601.37	6.04	149.681	1,601.00	-9.16	5.35	1,879,098.767	2,810,644.943	36.163923803	-107.536717956
Pictured Cliffs									
1,700.00	9.00	149.681	1,698.77	-20.30	11.87	1,879,087.625	2,810,651.459	36.163893141	-107.536695997
1,737.76	10.13	149.681	1,736.00	-25.71	15.04	1,879,082.209	2,810,654.626	36.163878235	-107.536685322
Lewis									
1,800.00	12.00	149.681	1,797.08	-36.03	21.07	1,879,071.896	2,810,660.657	36.163849855	-107.536664998
1,900.00	15.00	149.681	1,894.31	-56.18	32.85	1,879,051.747	2,810,672.441	36.163794404	-107.536625287
2,000.00	18.00	149.681	1,990.18	-80.69	47.19	1,879,027.233	2,810,686.777	36.163726942	-107.536576973
2,000.86	18.03	149.681	1,991.00	-80.92	47.32	1,879,027.002	2,810,686.912	36.163726307	-107.536576519
Chacra_A									
2,100.00	21.00	149.681	2,084.43	-109.50	64.04	1,878,998.421	2,810,703.627	36.163647652	-107.536520190
2,200.00	24.00	149.681	2,176.81	-142.53	83.35	1,878,965.391	2,810,722.943	36.163556752	-107.536455093
2,247.37	25.42	149.681	2,219.85	-159.63	93.35	1,878,948.296	2,810,732.940	36.163509707	-107.536421402
Begin 25.42° tangent									
2,300.00	25.42	149.681	2,267.38	-179.13	104.75	1,878,928.795	2,810,744.344	36.163456041	-107.536382970
2,400.00	25.42	149.681	2,357.69	-216.18	126.43	1,878,891.739	2,810,766.015	36.163354064	-107.536309940
2,500.00	25.42	149.681	2,448.01	-253.24	148.10	1,878,854.684	2,810,787.685	36.163252087	-107.536236910
2,600.00	25.42	149.681	2,538.33	-290.30	169.77	1,878,817.628	2,810,809.355	36.163150110	-107.536163881
2,700.00	25.42	149.681	2,628.65	-327.35	191.44	1,878,780.572	2,810,831.025	36.163048133	-107.536090851
2,800.00	25.42	149.681	2,718.96	-364.41	213.11	1,878,743.517	2,810,852.696	36.162946156	-107.536017822
2,900.00	25.42	149.681	2,809.28	-401.46	234.78	1,878,706.461	2,810,874.366	36.162844179	-107.535944794
3,000.00	25.42	149.681	2,899.60	-438.52	256.45	1,878,669.406	2,810,896.036	36.162742202	-107.535871765
3,100.00	25.42	149.681	2,989.92	-475.57	278.12	1,878,632.350	2,810,917.707	36.162640224	-107.535798736
3,200.00	25.42	149.681	3,080.23	-512.63	299.79	1,878,595.294	2,810,939.377	36.162538247	-107.535725708
3,211.92	25.42	149.681	3,091.00	-517.05	302.37	1,878,590.877	2,810,941.960	36.162526091	-107.535717003
Cliff House_Basal									
3,250.67	25.42	149.681	3,126.00	-531.41	310.77	1,878,576.517	2,810,950.358	36.162486573	-107.535688703
Menefee									
3,300.00	25.42	149.681	3,170.55	-549.69	321.46	1,878,558.239	2,810,961.047	36.162436270	-107.535652680



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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	25.42	149.681	3,260.87	-586.74	343.13	1,878,521.183	2,810,982.717	36.162334292	-107.535579652
3,500.00	25.42	149.681	3,351.19	-623.80	364.80	1,878,484.127	2,811,004.388	36.162232315	-107.535506624
3,600.00	25.42	149.681	3,441.50	-660.85	386.47	1,878,447.072	2,811,026.058	36.162130337	-107.535433597
3,700.00	25.42	149.681	3,531.82	-697.91	408.14	1,878,410.016	2,811,047.728	36.162028360	-107.535360569
3,800.00	25.42	149.681	3,622.14	-734.96	429.81	1,878,372.961	2,811,069.398	36.161926382	-107.535287542
3,900.00	25.42	149.681	3,712.46	-772.02	451.48	1,878,335.905	2,811,091.069	36.161824405	-107.535214515
4,000.00	25.42	149.681	3,802.77	-809.07	473.15	1,878,298.849	2,811,112.739	36.161722427	-107.535141489
4,100.00	25.42	149.681	3,893.09	-846.13	494.82	1,878,261.794	2,811,134.409	36.161620449	-107.535068462
4,190.69	25.42	149.681	3,975.00	-879.74	514.47	1,878,228.189	2,811,154.062	36.161527967	-107.535002235
Point Lookout									
4,200.00	25.42	149.681	3,983.41	-883.19	516.49	1,878,224.738	2,811,156.080	36.161518472	-107.534995436
4,300.00	25.42	149.681	4,073.73	-920.24	538.16	1,878,187.683	2,811,177.750	36.161416494	-107.534922409
4,400.00	25.42	149.681	4,164.05	-957.30	559.83	1,878,150.627	2,811,199.420	36.161314516	-107.534849383
4,407.70	25.42	149.681	4,171.00	-960.15	561.50	1,878,147.774	2,811,201.089	36.161306663	-107.534843760
Mancos									
4,500.00	25.42	149.681	4,254.36	-994.35	581.50	1,878,113.571	2,811,221.090	36.161212538	-107.534776357
4,600.57	25.42	149.681	4,345.20	-1,031.62	603.30	1,878,076.303	2,811,242.885	36.161109974	-107.534702912
Begin 10°/100' build/turn									
4,650.00	20.74	153.723	4,390.66	-1,048.64	612.53	1,878,059.289	2,811,252.120	36.161063158	-107.534671805
4,700.00	16.15	160.042	4,438.08	-1,063.12	618.83	1,878,044.808	2,811,258.416	36.161023323	-107.534650627
4,741.21	12.59	168.517	4,478.00	-1,072.91	621.68	1,878,035.015	2,811,261.267	36.160996398	-107.534641070
MNCS_A									
4,750.00	11.88	170.954	4,486.59	-1,074.74	622.01	1,878,033.182	2,811,261.600	36.160991360	-107.534639961
4,800.00	8.45	191.955	4,535.82	-1,083.42	622.06	1,878,024.501	2,811,261.649	36.160967512	-107.534639886
4,850.00	7.16	228.256	4,585.38	-1,089.09	618.97	1,878,018.830	2,811,258.561	36.160951960	-107.534650405
4,855.66	7.22	232.756	4,591.00	-1,089.54	618.43	1,878,018.380	2,811,258.015	36.160950728	-107.534652261
MNCS_B									
4,900.00	9.00	262.047	4,634.91	-1,091.71	612.77	1,878,016.213	2,811,252.361	36.160944823	-107.534671436
4,933.61	11.35	275.755	4,668.00	-1,091.74	606.88	1,878,016.181	2,811,246.466	36.160944785	-107.534691408
MNCS_C									
4,950.00	12.66	280.483	4,684.03	-1,091.26	603.51	1,878,016.670	2,811,243.096	36.160946155	-107.534702820
4,979.85	15.21	286.948	4,713.00	-1,089.52	596.54	1,878,018.407	2,811,236.130	36.160950987	-107.534726398
MNCS_Cms									
5,000.00	17.01	290.212	4,732.36	-1,087.73	591.25	1,878,020.196	2,811,230.835	36.160955947	-107.534744318
5,050.00	21.64	295.977	4,779.53	-1,081.16	576.08	1,878,026.766	2,811,215.673	36.160974122	-107.534795614
5,100.00	26.40	299.767	4,825.19	-1,071.60	558.14	1,878,036.329	2,811,197.724	36.161000544	-107.534856318
5,117.79	28.11	300.823	4,841.00	-1,067.49	551.10	1,878,040.439	2,811,190.693	36.161011895	-107.534880094
MNCS_D									
5,150.00	31.23	302.462	4,868.99	-1,059.11	537.54	1,878,048.812	2,811,177.126	36.161035011	-107.534925967
5,200.00	36.10	304.495	4,910.59	-1,043.80	514.45	1,878,064.121	2,811,154.035	36.161077260	-107.535004032
5,250.00	41.00	306.102	4,949.68	-1,025.79	489.04	1,878,082.139	2,811,128.627	36.161126971	-107.535089919
5,276.11	43.57	306.820	4,969.00	-1,015.35	474.91	1,878,092.580	2,811,114.502	36.161155772	-107.535137664
MNCS_E									
5,300.00	45.92	307.420	4,985.97	-1,005.20	461.51	1,878,102.728	2,811,101.096	36.161183764	-107.535182973
5,345.01	50.36	308.431	5,016.00	-984.59	435.08	1,878,123.335	2,811,074.666	36.161240595	-107.535272294
MNCS_F									
5,350.00	50.85	308.535	5,019.17	-982.19	432.06	1,878,125.733	2,811,071.649	36.161247208	-107.535282488
5,400.00	55.79	309.503	5,049.03	-956.95	400.92	1,878,150.977	2,811,040.513	36.161316819	-107.535387704
5,442.60	60.00	310.242	5,071.66	-933.82	373.24	1,878,174.107	2,811,012.832	36.161380590	-107.535481238
Begin 60.00° tangent									
5,485.28	60.00	310.242	5,093.00	-909.94	345.03	1,878,197.985	2,810,984.618	36.161446423	-107.535576569
MNCS_G									



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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
5,502.60	60.00	310.242	5,101.66	-900.25	333.58	1,878,207.675	2,810,973.169	36.161473139	-107.535615256
Begin 10°/100' build/turn									
5,550.00	64.70	310.949	5,123.65	-872.93	301.71	1,878,234.995	2,810,941.297	36.161548458	-107.535722944
5,600.00	69.66	311.637	5,143.04	-842.52	267.10	1,878,265.401	2,810,906.685	36.161632279	-107.535839883
5,641.30	73.76	312.173	5,156.00	-816.34	237.92	1,878,291.587	2,810,877.509	36.161704458	-107.535938450
MNCS_H									
5,650.00	74.62	312.283	5,158.37	-810.71	231.72	1,878,297.213	2,810,871.310	36.161719967	-107.535959392
5,700.00	79.58	312.898	5,169.53	-777.74	195.85	1,878,330.189	2,810,835.442	36.161810854	-107.536080562
5,750.00	84.55	313.494	5,176.43	-743.85	159.76	1,878,364.076	2,810,799.352	36.161904250	-107.536202471
5,798.71	89.39	314.065	5,179.00	-710.20	124.65	1,878,397.723	2,810,764.241	36.161996976	-107.536321067
Begin 89.39° lateral									
5,800.00	89.39	314.065	5,179.02	-709.31	123.73	1,878,398.618	2,810,763.317	36.161999442	-107.536324190
5,900.00	89.39	314.065	5,180.08	-639.76	51.88	1,878,468.162	2,810,691.466	36.162191088	-107.536566879
6,000.00	89.39	314.065	5,181.15	-570.22	-19.97	1,878,537.705	2,810,619.614	36.162382733	-107.536809568
6,100.00	89.39	314.065	5,182.22	-500.67	-91.83	1,878,607.249	2,810,547.764	36.162574377	-107.537052259
6,200.00	89.39	314.065	5,183.29	-431.13	-163.68	1,878,676.792	2,810,475.913	36.162766021	-107.537294951
6,300.00	89.39	314.065	5,184.36	-361.59	-235.53	1,878,746.336	2,810,404.063	36.162957665	-107.537537644
6,400.00	89.39	314.065	5,185.43	-292.04	-307.38	1,878,815.880	2,810,332.212	36.163149308	-107.537780339
6,500.00	89.39	314.065	5,186.50	-222.50	-379.23	1,878,885.423	2,810,260.361	36.163340951	-107.538023034
6,600.00	89.39	314.065	5,187.57	-152.96	-451.08	1,878,954.967	2,810,188.511	36.163532593	-107.538265731
6,700.00	89.39	314.065	5,188.64	-83.41	-522.93	1,879,024.510	2,810,116.660	36.163724234	-107.538508429
6,800.00	89.39	314.065	5,189.70	-13.87	-594.78	1,879,094.054	2,810,044.810	36.163915875	-107.538751128
6,900.00	89.39	314.065	5,190.77	55.67	-666.63	1,879,163.597	2,809,972.959	36.164107516	-107.538993828
7,000.00	89.39	314.065	5,191.84	125.22	-738.48	1,879,233.141	2,809,901.108	36.164299156	-107.539236530
7,100.00	89.39	314.065	5,192.91	194.76	-810.33	1,879,302.685	2,809,829.258	36.164490796	-107.539479233
7,200.00	89.39	314.065	5,193.98	264.31	-882.18	1,879,372.228	2,809,757.407	36.164682435	-107.539721936
7,300.00	89.39	314.065	5,195.05	333.85	-954.03	1,879,441.772	2,809,685.557	36.164874073	-107.539964641
7,400.00	89.39	314.065	5,196.12	403.39	-1,025.88	1,879,511.315	2,809,613.706	36.165065711	-107.540207348
7,500.00	89.39	314.065	5,197.19	472.94	-1,097.74	1,879,580.859	2,809,541.855	36.165257349	-107.540450055
7,600.00	89.39	314.065	5,198.26	542.48	-1,169.59	1,879,650.402	2,809,470.005	36.165448986	-107.540692764
7,700.00	89.39	314.065	5,199.32	612.02	-1,241.44	1,879,719.946	2,809,398.154	36.165640623	-107.540935473
7,800.00	89.39	314.065	5,200.39	681.57	-1,313.29	1,879,789.490	2,809,326.304	36.165832259	-107.541178184
7,900.00	89.39	314.065	5,201.46	751.11	-1,385.14	1,879,859.033	2,809,254.453	36.166023895	-107.541420896
8,000.00	89.39	314.065	5,202.53	820.66	-1,456.99	1,879,928.577	2,809,182.602	36.166215530	-107.541663610
8,100.00	89.39	314.065	5,203.60	890.20	-1,528.84	1,879,998.120	2,809,110.752	36.166407165	-107.541906324
8,200.00	89.39	314.065	5,204.67	959.74	-1,600.69	1,880,067.664	2,809,038.901	36.166598799	-107.542149040
8,300.00	89.39	314.065	5,205.74	1,029.29	-1,672.54	1,880,137.207	2,808,967.051	36.166790433	-107.542391756
8,400.00	89.39	314.065	5,206.81	1,098.83	-1,744.39	1,880,206.751	2,808,895.200	36.166982066	-107.542634474
8,500.00	89.39	314.065	5,207.88	1,168.37	-1,816.24	1,880,276.295	2,808,823.349	36.167173698	-107.542877193
8,600.00	89.39	314.065	5,208.95	1,237.92	-1,888.09	1,880,345.838	2,808,751.499	36.167365331	-107.543119913
8,700.00	89.39	314.065	5,210.01	1,307.46	-1,959.94	1,880,415.382	2,808,679.648	36.167556962	-107.543362635
8,800.00	89.39	314.065	5,211.08	1,377.01	-2,031.80	1,880,484.925	2,808,607.798	36.167748594	-107.543605358
8,900.00	89.39	314.065	5,212.15	1,446.55	-2,103.65	1,880,554.469	2,808,535.947	36.167940224	-107.543848082
9,000.00	89.39	314.065	5,213.22	1,516.09	-2,175.50	1,880,624.012	2,808,464.097	36.168131855	-107.544090807
9,100.00	89.39	314.065	5,214.29	1,585.64	-2,247.35	1,880,693.556	2,808,392.246	36.168323484	-107.544333533
9,200.00	89.39	314.065	5,215.36	1,655.18	-2,319.20	1,880,763.100	2,808,320.395	36.168515114	-107.544576260
9,300.00	89.39	314.065	5,216.43	1,724.72	-2,391.05	1,880,832.643	2,808,248.545	36.168706742	-107.544818989
9,400.00	89.39	314.065	5,217.50	1,794.27	-2,462.90	1,880,902.187	2,808,176.694	36.168898371	-107.545061719
9,500.00	89.39	314.065	5,218.57	1,863.81	-2,534.75	1,880,971.730	2,808,104.844	36.169089998	-107.545304450
9,600.00	89.39	314.065	5,219.63	1,933.36	-2,606.60	1,881,041.274	2,808,032.993	36.169281626	-107.545547182
9,700.00	89.39	314.065	5,220.70	2,002.90	-2,678.45	1,881,110.818	2,807,961.142	36.169473253	-107.545789916
9,800.00	89.39	314.065	5,221.77	2,072.44	-2,750.30	1,881,180.361	2,807,889.292	36.169664879	-107.546032650
9,900.00	89.39	314.065	5,222.84	2,141.99	-2,822.15	1,881,249.905	2,807,817.441	36.169856505	-107.546275386
10,000.00	89.39	314.065	5,223.91	2,211.53	-2,894.00	1,881,319.448	2,807,745.591	36.170048130	-107.546518123



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	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	
10,100.00	89.39	314.065	5,224.98	2,281.07	-2,965.85	1,881,388.992	2,807,673.740	36.170239755	-107.546760861	
10,200.00	89.39	314.065	5,226.05	2,350.62	-3,037.71	1,881,458.535	2,807,601.889	36.170431379	-107.547003600	
10,300.00	89.39	314.065	5,227.12	2,420.16	-3,109.56	1,881,528.079	2,807,530.039	36.170623003	-107.547246341	
10,400.00	89.39	314.065	5,228.19	2,489.70	-3,181.41	1,881,597.623	2,807,458.188	36.170814626	-107.547489082	
10,500.00	89.39	314.065	5,229.26	2,559.25	-3,253.26	1,881,667.166	2,807,386.338	36.171006249	-107.547731825	
10,600.00	89.39	314.065	5,230.32	2,628.79	-3,325.11	1,881,736.710	2,807,314.487	36.171197872	-107.547974569	
10,700.00	89.39	314.065	5,231.39	2,698.34	-3,396.96	1,881,806.253	2,807,242.636	36.171389493	-107.548217314	
10,800.00	89.39	314.065	5,232.46	2,767.88	-3,468.81	1,881,875.797	2,807,170.786	36.171581115	-107.548460061	
10,900.00	89.39	314.065	5,233.53	2,837.42	-3,540.66	1,881,945.340	2,807,098.935	36.171772736	-107.548702808	
11,000.00	89.39	314.065	5,234.60	2,906.97	-3,612.51	1,882,014.884	2,807,027.085	36.171964356	-107.548945557	
11,100.00	89.39	314.065	5,235.67	2,976.51	-3,684.36	1,882,084.428	2,806,955.234	36.172155976	-107.549188307	
11,200.00	89.39	314.065	5,236.74	3,046.05	-3,756.21	1,882,153.971	2,806,883.383	36.172347595	-107.549431058	
11,300.00	89.39	314.065	5,237.81	3,115.60	-3,828.06	1,882,223.515	2,806,811.533	36.172539214	-107.549673811	
11,400.00	89.39	314.065	5,238.88	3,185.14	-3,899.91	1,882,293.058	2,806,739.682	36.172730833	-107.549916564	
11,500.00	89.39	314.065	5,239.94	3,254.69	-3,971.77	1,882,362.602	2,806,667.832	36.172922451	-107.550159319	
11,600.00	89.39	314.065	5,241.01	3,324.23	-4,043.62	1,882,432.145	2,806,595.981	36.173114068	-107.550402075	
11,700.00	89.39	314.065	5,242.08	3,393.77	-4,115.47	1,882,501.689	2,806,524.130	36.173305685	-107.550644832	
11,800.00	89.39	314.065	5,243.15	3,463.32	-4,187.32	1,882,571.233	2,806,452.280	36.173497301	-107.550887590	
11,900.00	89.39	314.065	5,244.22	3,532.86	-4,259.17	1,882,640.776	2,806,380.429	36.173688917	-107.551130349	
12,000.00	89.39	314.065	5,245.29	3,602.40	-4,331.02	1,882,710.320	2,806,308.579	36.173880533	-107.551373110	
12,100.00	89.39	314.065	5,246.36	3,671.95	-4,402.87	1,882,779.863	2,806,236.728	36.174072148	-107.551615872	
12,200.00	89.39	314.065	5,247.43	3,741.49	-4,474.72	1,882,849.407	2,806,164.877	36.174263762	-107.551858634	
12,300.00	89.39	314.065	5,248.50	3,811.04	-4,546.57	1,882,918.950	2,806,093.027	36.174455376	-107.552101399	
12,400.00	89.39	314.065	5,249.56	3,880.58	-4,618.42	1,882,988.494	2,806,021.176	36.174646990	-107.552344164	
12,440.71	89.39	314.065	5,250.00	3,908.89	-4,647.67	1,883,016.807	2,805,991.924	36.174725000	-107.552443000	
PBHL/TD 12440.71 MD 5250.00 TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
S Chaco 908 FTP 337 F	0.00	0.000	5,179.00	-710.19	124.67	1,878,397.732	2,810,764.261	36.161997000	-107.536321000	
- plan misses target center by 0.02ft at 5798.70ft MD (5179.00 TVD, -710.21 N, 124.66 E)										
- Point										
S Chaco 908 PBHL 384	0.00	0.000	5,250.00	3,908.89	-4,647.67	1,883,016.807	2,805,991.924	36.174725000	-107.552443000	
- plan hits target center										
- Point										

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	
3,416.75	3,276.00	9 5/8" Casing	9-5/8	12-1/4	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well S Chaco Unit 908 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=7003+28 @ 7031.00ft
Project:	Sandoval County, New Mexico NAD83 NM W	MD Reference:	RKB=7003+28 @ 7031.00ft
Site:	S Chaco Unit 344 Pad (344, 345 & 908)	North Reference:	Grid
Well:	S Chaco Unit 908 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
989.00	989.00	Ojo Alamo			
1,101.00	1,101.00	Kirtland			
1,321.00	1,321.00	Fruitland			
1,601.37	1,601.00	Pictured Cliffs			
1,737.76	1,736.00	Lewis			
2,000.86	1,991.00	Chacra_A			
3,211.92	3,091.00	Cliff House_Basal			
3,250.67	3,126.00	Menefee			
4,190.69	3,975.00	Point Lookout			
4,407.70	4,171.00	Mancos			
4,741.21	4,478.00	MNCS_A			
4,855.66	4,591.00	MNCS_B			
4,933.61	4,668.00	MNCS_C			
4,979.85	4,713.00	MNCS_Cms			
5,117.79	4,841.00	MNCS_D			
5,276.11	4,969.00	MNCS_E			
5,345.01	5,016.00	MNCS_F			
5,485.28	5,093.00	MNCS_G			
5,641.30	5,156.00	MNCS_H			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,400.00	1,400.00	0.00	0.00	KOP Begin 3°/100' build	
2,247.37	2,219.85	-159.63	93.35	Begin 25.42° tangent	
4,600.57	4,345.20	-1,031.62	603.30	Begin 10°/100' build/turn	
5,442.60	5,071.66	-933.82	373.24	Begin 60.00° tangent	
5,502.60	5,101.66	-900.25	333.58	Begin 10°/100' build/turn	
5,798.71	5,179.00	-710.20	124.65	Begin 89.39° lateral	
12,440.71	5,250.00	3,908.89	-4,647.67	PBHL/TD 12440.71 MD 5250.00 TVD	



ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80111

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

WELL INFORMATION:

Name: S CHACO UNIT 908H

API Number: 30-043-21281

AFE Number: not yet assigned

ER Well Number: not yet assigned

State: New Mexico

County: San Juan

Surface Elevation: 7,003 ft ASL (GL) 7,031 ft ASL (KB)

Surface Location: 2-22N-07W Sec-Twn-Rng 1,047 ft FSL 356 ft FEL

36.163949 ° N latitude 107.536736 ° W longitude (NAD 83)

BH Location: 35-23N-07W Sec-Twn-Rng 384 ft FNL 228 ft FWL

36.174725 ° N latitude 107.552443 ° 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 48.3 miles to MM 103.0; Right (South) on Atkins Road for 4.2 miles to 4-way intersection; Left (East) exiting Atkins Road for 0.3 miles to fork; Right (South) along existing access road for 0.2 miles; Right (South) for 0.6 miles to S CHACO UNIT 344H PAD (WELLS: 344H, 345H, 908H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,042	989	989	W	normal
	Kirtland	5,930	1,101	1,101	W	normal
	Fruitland	5,710	1,321	1,321	G, W	sub
	Pictured Cliffs	5,430	1,601	1,601	G, W	sub
	Lewis	5,295	1,736	1,738	G, W	normal
	Chacra	5,040	1,991	2,001	G, W	normal
	Cliff House	3,940	3,091	3,212	G, W	sub
	Menefee	3,905	3,126	3,251	G, W	normal
	Point Lookout	3,056	3,975	4,191	G, W	normal
	Mancos	2,860	4,171	4,408	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,553	4,478	4,741	O,G	sub (~0.38)
	MNCS_B	2,440	4,591	4,856	O,G	sub (~0.38)
	MNCS_C	2,363	4,668	4,934	O,G	sub (~0.38)
	MNCS_Cms	2,318	4,713	4,980	O,G	sub (~0.38)
	MNCS_D	2,190	4,841	5,118	O,G	sub (~0.38)
	MNCS_E	2,062	4,969	5,276	O,G	sub (~0.38)
	MNCS_F	2,015	5,016	5,345	O,G	sub (~0.38)
	MNCS_G	1,938	5,093	5,485	O,G	sub (~0.38)
	MNCS_H	1,875	5,156	5,641	O,G	sub (~0.38)
	FTP (LP) TARGET	1,852	5,179	5,799	O,G	sub (~0.38)
	LTP (TD) TARGET	1,781	5,250	12,441	O,G	sub (~0.38)

Surface: Nacimiento

Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup

Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations

Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,260 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 1,110 psi

Temperature: Maximum anticipated BHT is 135° F or less

H₂S INFORMATION:

H₂S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.

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

LOGGING, CORING, AND TESTING:

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

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

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

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

DRILLING RIG INFORMATION:

Contractor: Ensign

Rig No.: 773

Draw Works: Pacific Rim 1500AC

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

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

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

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

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

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

Choke 3", 10,000 psi

KB-GL (ft): 28

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

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

- 1) Rig will be equipped with upper and lower kelly cocks with handles available.
- 2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
- 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 minimize 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. 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	708	116,634	116,634
Min. S.F.					7.39	3.86	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): Minimum: 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)
	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

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

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

350 ft (MD)	to	3,417 ft (MD)	Hole Section Length:	3,067 ft
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350 ft (TVD)	to	3,276 ft (TVD)	Casing Required:	3,417 ft
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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					1,431	1,297	207,272	207,272
Min. S.F.					1.41	2.71	2.72	2.19

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): Minimum: 3,400 Optimum: 4,530 Maximum: 5,660

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	698
Tail	Type III	14.6	1.38	6.64	20%	2,917	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

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

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

3,417 ft (MD)	to	12,441 ft (MD)	Hole Section Length:	9,024 ft
3,276 ft (TVD)	to	5,250 ft (TVD)	Casing Required:	12,441 ft

Estimated KOP:	4,601 ft (MD)	4,345 ft (TVD)
Estimated Landing Point (FTP):	5,799 ft (MD)	5,179 ft (TVD)
Estimated Lateral Length:	6,642 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 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					2,594	8,991	332,503	332,503
Min. S.F.					2.88	1.18	1.64	1.34

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): Minimum: 3,470 Optimum: 4,620 Maximum: 5,780

Casing Summary: Float shoe, 1 jt casing, float collar w/debris catcher, 1 jt casing, float collar, 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 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

Lateral: 1 centralizer per joint

FTP 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 III	12.4	2.360	13.40	65%	0	548
Tail	G:POZ blend	13.3	1.560	7.70	10%	4,408	1,298

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

Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as defined by NMAC 19.15.16.15.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 bottom 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, cap well, RDMO.

COMPLETION AND PRODUCTION PLAN:

Frac: 30 plug-and-perf stages with 270,000 bbls slickwater fluid and 11,000,000 lbs of proppant (estimated)

Flowback: Flow back through production tubing as pressures allow (ESP may be used for load recovery assistance)

Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: 6/1/2022

Completion: 7/21/2022

Production: 9/9/2022

Prepared by: Alec Bridge 3/14/2022

WELL NAME: S CHACO UNIT 908H
OBJECTIVE: Drill, complete, and equip single lateral in the Mancos-H formation
API Number: 30-043-21281
AFE Number: not yet assigned
ER Well Number: not yet assigned
State: New Mexico
County: San Juan

Surface Elev.: 7,003 ft ASL (GL) 7,031 ft ASL (KB)
Surface Location: 2-22N-07W Sec-Twn- Rng 1,047 ft FSL 356 ft FEL
BH Location: 35-23N-07W Sec-Twn- Rng 384 ft FNL 228 ft FWL

Driving Directions: FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:
South on US Hwy 550 for 48.3 miles to MM 103.0; Right (South) on Atkins Road for 4.2 miles to 4-way intersection; Left (East) exiting Atkins Road for 0.3 miles to fork; Right (South) along existing access road for 0.2 miles; Right (South) for 0.6 miles to S CHACO UNIT 344H PAD (WELLS: 344H, 345H, 908H).

QUICK REFERENCE	
Sur TD (MD)	350 ft
Int TD (MD)	3,417 ft
KOP (MD)	4,601 ft
KOP (TVD)	4,345 ft
Target (TVD)	5,179 ft
Curve BUR	10 °/100 ft
POE (MD)	5,799 ft
TD (MD)	12,441 ft
Lat Len (ft)	6,642 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	3,417	9.625	36.0	J-55	LTC	0	3,417
Production	8.500	12,441	5.500	17.0	P-110	LTC	0	12,441

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	698
Inter. (Tail)	Type III	14.6	1.38	6.64	0.3132	20%	2,917	136
Prod. (Lead)	Type III	12.4	2.360	13.4	0.2691	65%	0	548
Prod. (Tail)	G:POZ blend	13.3	1.560	7.7	0.2291	10%	4,408	1,298

COMPLETION / PRODUCTION SUMMARY:

Frac: 30 plug-and-perf stages with 270,000 bbls slickwater fluid and 11,000,000 lbs of proppant (estimated)
Flowback: Flow back through production tubing as pressures allow (ESP may be used for load recovery assistance)
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

	Tops	TVD (ft KB)	MD (ft KB)
	Ojo Alamo	989	989
	Kirtland	1,101	1,101
	Fruitland	1,321	1,321
	Pictured Cliffs	1,601	1,601
	Lewis	1,736	1,738
	Chacra	1,991	2,001
	Cliff House	3,091	3,212
	Menefee	3,126	3,251
	Point Lookout	3,975	4,191
	Mancos	4,171	4,408
	Gallup (MNCS_A)	4,478	4,741
	MNCS_B	4,591	4,856
	MNCS_C	4,668	4,934
	MNCS_Cms	4,713	4,980
	MNCS_D	4,841	5,118
	MNCS_E	4,969	5,276
	MNCS_F	5,016	5,345
	MNCS_G	5,093	5,485
	MNCS_H	5,156	5,641
	FTP (LP) TARGET	5,179	5,799
	LTP (TD) TARGET	5,250	12,441

District I
1625 N. French Dr., Hobbs, NM 88240
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 100668

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 100668
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	No NSP required.	4/27/2022
kpickford	Adhere to previous NMOCD Conditions of Approval	4/27/2022