State of New Mexico
Energy, Minerals and Natural Resources Department

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-5 form.

Operator Signature Date: **Original APD 11/12/2015**
Sundry Date 1/30/2020

WELL INFORMATION:
ENDURING RESOURCES, LLC
30-045-35732 KIMBETO WASH UNIT #787H

Conditions of Approval:
(See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- ✓ Hold C-104 for directional survey & "As Drilled" Plat
- ✓ Hold C-104 for NSL, NSP, DHC,
- ○ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ✓ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - ✓ A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - ✓ A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - ✓ A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ✓ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ✓ Submit Gas Capture Plan form prior to spudding or initiating recompletions operations.
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84

18

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM117577

6. If Indian, Allottee or Tribe Name
EASTERN NAVAJO

7. If Unit or CA/Agreement, Name and/or No.
NMNM135255A

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

8. Well Name and No.
KIMBETO WASH UNIT 889H

2. Name of Operator
ENDURING RESOURCES LLC
Contact: LACEY GRANILLO
E-Mail: LGRANILLO@ENDURINGRESOURCES.COM

9. API Well No.
30-045-35732-00-X1

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

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

10. Field and Pool or Exploratory Area
BASIN MANCOS

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 30 T23N R9W NWNW 661FNL 484FWL
36.205746 N Lat, 107.834785 W Lon

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

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original A PD
	☐ 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 recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

CHANGE IN PLANS

A summary of the requested changes to the approved APD is outlined below. Please reference the attachments for additional details.
Change name from KIMBETO WASH UNIT 787H to KIMBETO WASH UNIT 889H.
C102
Moved BHL from section 30 to section 32
Moved POE from section 19 to section 30
Drilling Program
Directional plan updated based on new POE and BHL
Casing program change

NMOCD
FEB 06 2020
DISTRICT III

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #501505 verified by the BLM Well Information System
For ENDURING RESOURCES LLC, sent to the Farmington
Committed to AFMSS for processing by JOE KILLINS on 01/30/2020 (20JK0104SE)

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

Signature (Electronic Submission) — Date 01/30/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JOE KILLINS — Title PETROLEUM ENGINEER — Date 02/05/2020

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

Office Farmington

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

(Instructions on page 2)

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

NMOCD

Additional data for EC transaction #501505 that would not fit on the form

32. Additional remarks, continued

Surface: 9-5/8 to 13-3/8
Intermediate: 7 to 9-5/8
Production: 4-1/2 liner to 5-1/2 long-string
Frac Program
Fluid type: change from nitrogen foam to slick-water
Water volume: increase from 15,000 bbls to 300,000 bbls (estimated)
Sand weight: increase from 3.1 million lbs to 23 million lbs (estimated)

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

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-35732	97232	BASIN MANCOS

4 Property Code	5 Property Name	6 Well Number
321239	KIMBETO WASH UNIT	889H

7 OGRID No.	8 Operator Name	9 Elevation
372286	ENDURING RESOURCES, LLC	6596'

10 Surface Location

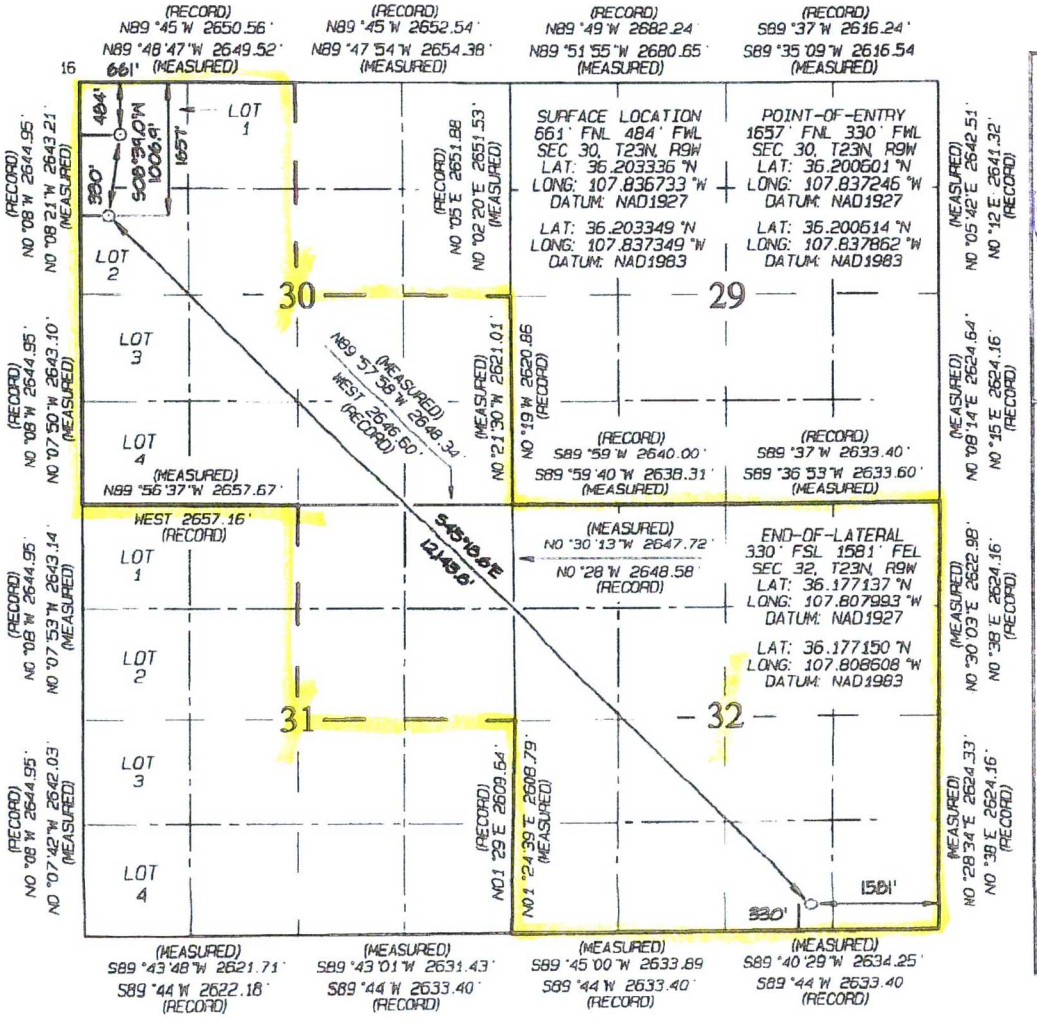
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	30	23N	9W	1	661	NORTH	484	WEST	SAN JUAN

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
O	32	23N	9W		330	SOUTH	1581	EAST	SAN JUAN

12 Dedicated Acres		13 Joint or Infill	14 Consolidation Code	15 Order No.
1280.46	W/2 & SE/4 - Section 30 NE/4 - Section 31 Entire Section 32			R-14084

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



17 OPERATOR CERTIFICATION

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

Signature 7/30/19 Date

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

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

Date Revised: JULY 22, 2019
Date of Survey: JULY 15, 2015

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

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

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

WELL INFORMATION:

Name: **KIMBETO WASH UNIT 889H (FKA 787H)**
API Number: **30-045-35732**
State: New Mexico
County: San Juan
Surface Elevation: 6,596 ft ASL (GL) 6,624 ft ASL (KB)
Surface Location: 30-23N-09W Sec-Twn-Rng 661 ft FNL 484 ft FWL
36.203349 ° N latitude 107.837349 ° W longitude (NAD 83)
BH Location: 32-23N-09W Sec-Twn-Rng 330 ft FSL 1,581 ft FEL
36.17715 ° N latitude 107.808608 ° W longitude (NAD 83)
Driving Directions: From the intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM: South on US Hwy 550 for 35.9 miles to MM 115.7; right (Southwest) at Nageezi Post Office on CR #7800 for 0.4 miles to 4-way instersection; right (Northwest) remaining on CR #7800 for 3.6 miles to end of pavement; straight (Southwest) on CR #7800 for 1.2 miles to fork in roadway; left (South) for 3.0 miles; right (Northwest) on access road for 220' into Kimbeto Wash Unit 789H Pad (4 wells: 789H, 791H, 887H, 889H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	6,515	109	109	W	normal
Kirtland	6,430	194	194	W	normal
Fruitland	6,145	479	479	G, W	sub
Pictured Cliffs	5,800	824	824	G, W	sub
Lewis	5,680	944	944	G, W	normal
Chacra	5,440	1,184	1,184	G, W	normal
Cliff House	4,500	2,124	2,153	G, W	sub
Menefee	4,480	2,144	2,174	G, W	normal
Point Lookout	3,425	3,199	3,268	G, W	normal
Mancos	3,287	3,337	3,411	O,G	sub (~0.38)
Gallup (MNCS_A)	2,950	3,674	3,768	O,G	sub (~0.38)
MNCS_B	2,832	3,792	3,912	O,G	sub (~0.38)
MNCS_C	2,760	3,864	4,015	O,G	sub (~0.38)
MNCS_Cms	2,718	3,906	4,087	O,G	sub (~0.38)
P.O.E. TARGET	**2,616**	**4,008**	**4,503**	**O,G**	**sub (~0.38)**
PROJECTED TD	**2,725**	**3,899**	**16,647**	**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: 1,730 psi
Maximum anticipated surface pressure, assuming partially evacuated hole: 850 psi
Temperature: **Maximum anticipated BHT is 125° F or less**

H_2S INFORMATION:

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

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

LOGGING, CORING, AND TESTING:

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

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

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

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

DRILLING RIG INFORMATION:

Contractor: 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

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.
2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

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

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

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

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

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

DETAILED DRILLING PLAN:

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

0 ft (MD)	**to**	**240 ft (MD)**	**Hole Section Length:**	**240 ft**
0 ft (TVD)	**to**	**240 ft (TVD)**	**Casing Required:**	**240 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				105	539	111,406	111,406
Min. S.F.				**10.78**	**5.07**	**7.66**	**8.16**

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

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

Make-up as per API Buttress Connection running procedure.

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

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

Cement:

Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Class G	15.8	1.174	5.15	0.6946	100%	0	284

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

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

240 ft (MD)	to	2,543 ft (MD)	Hole Section Length:	2,303 ft
240 ft (TVD)	to	2,500 ft (TVD)	Casing Required:	2,543 ft

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

Hole Size: 12-1/4"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional

Logging: None

Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to 1,500 psi for 30 minutes.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,092	993	179,834	179,834
Min. S.F.					**1.85**	**3.54**	**3.14**	**2.52**

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

MU Torque (ft lbs): *Minumum: 3,400 Optimum: 4,530 Maximum: 5,660*

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

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

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	70%	0	558
Tail	Class G	15.8	1.148	4.98	20%	2,043	164

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

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

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

2,543 ft (MD)	to	16,647 ft (MD)	Hole Section Length:	14,104 ft
2,500 ft (TVD)	to	3,899 ft (TVD)	Casing Required:	16,647 ft

Estimated KOP:	3,528	ft (MD)	3,450	ft (TVD)
Estimated Landing Point (P.O.E.):	4,503	ft (MD)	4,008	ft (TVD)
Estimated Lateral Length:	12,144	ft (MD)		

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

Hole Size: 8-1/2"

Bit / Motor: PDC w/mud motor

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

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

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

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					1,926	8,865	344,202	344,202
Min. S.F.					**3.87**	**1.20**	**1.59**	**1.29**

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

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

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

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

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ blend	12.4	1.907	9.981	50%	0	759
Tail	G:POZ blend	13.3	1.360	5.999	10%	3,768	2,386

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

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

Note: The lateral may be drilled outside the applicaple unit setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled outside the setback, the toe initiation sleeve(s) and all perforations will be placed inside the setback. An unorthodox location application is not required because the completed interval will be entirely within the setback as defined and allowed by NMAC 19.15.16.7B(1), NMAC 19.15.16.14B(2), NMAC 19.15.16.15B(2) . Kimbeto Wash Unit Order Number is R-14084.

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

COMPLETION AND PRODUCTION PLAN:

Frac: 70 plug-and-perf stages with 280,000 bbls slickwater fluid and 23,000,000 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: 9/1/2019
Completion: 10/31/2019
Production: 11/30/2019

Prepared by: **Alec Bridge** **7/25/2019**

WELL NAME: KIMBETO WASH UNIT 889H (FKA 787H)

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

API Number: 30-045-35732

State: New Mexico

County: San Juan

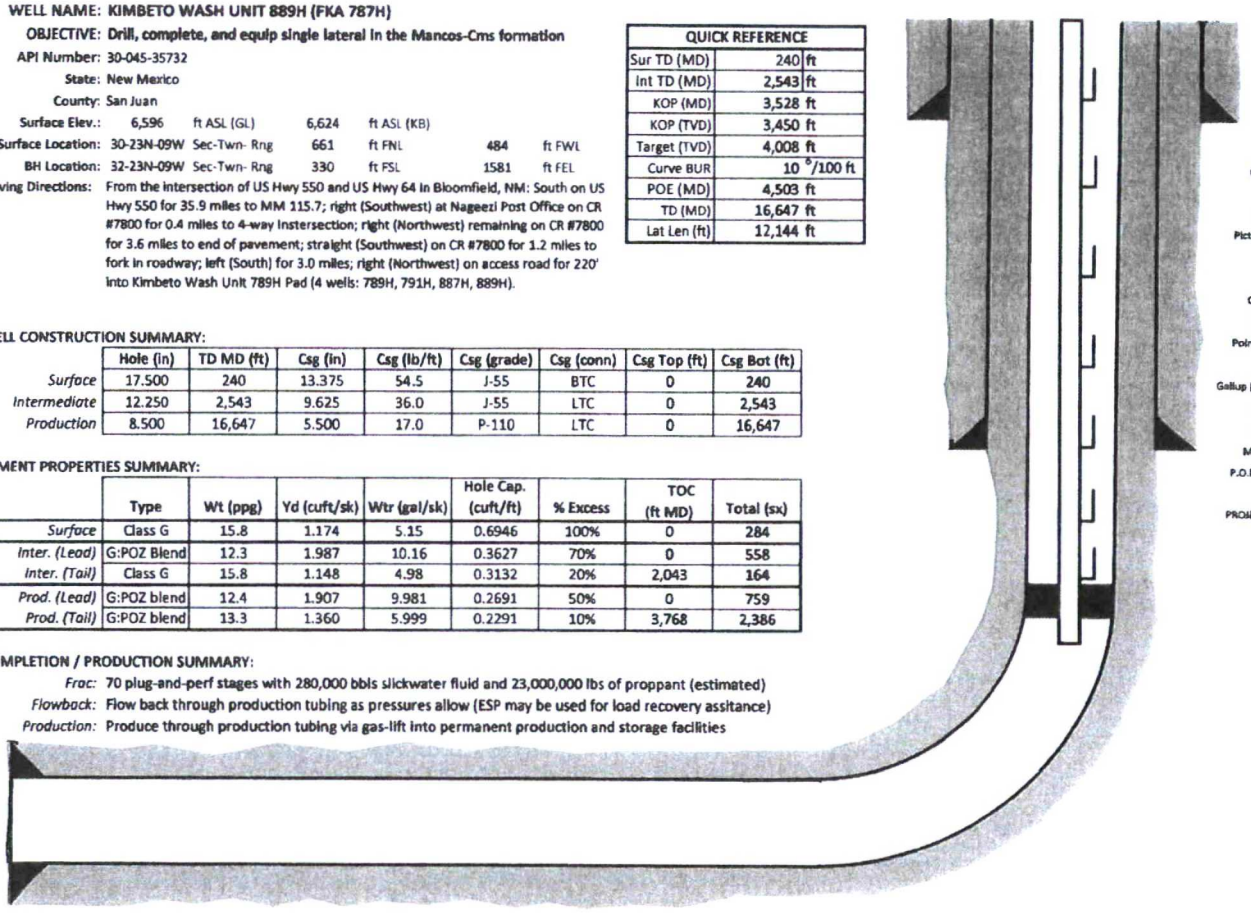
Surface Elev.: 6,596 ft ASL (GL) 6,624 ft ASL (KB)

Surface Location: 30-23N-09W Sec-Twn-Rng 661 ft FNL 484 ft FWL

BH Location: 32-23N-09W Sec-Twn-Rng 330 ft FSL 1581 ft FEL

Driving Directions: From the intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM: South on US Hwy 550 for 35.9 miles to MM 115.7; right (Southwest) at Nageezi Post Office on CR #7800 for 0.4 miles to 4-way intersection; right (Northwest) remaining on CR #7800 for 3.6 miles to end of pavement; straight (Southwest) on CR #7800 for 1.2 miles to fork in roadway; left (South) for 3.0 miles; right (Northwest) on access road for 220' into Kimbeto Wash Unit 789H Pad (4 wells: 789H, 791H, 887H, 889H).

QUICK REFERENCE	
Sur TD (MD)	240 ft
Int TD (MD)	2,543 ft
KOP (MD)	3,528 ft
KOP (TVD)	3,450 ft
Target (TVD)	4,008 ft
Curve BUR	10 °/100 ft
POE (MD)	4,503 ft
TD (MD)	16,647 ft
Lat Len (ft)	12,144 ft



Tops	TVD (ft KB)	MD (ft KB)
Ojo Alamo	109	109
Kirtland	194	194
Fruitland	479	479
Pictured Cliffs	824	824
Lewis	944	944
Chacra	1,184	1,184
Cliff House	2,124	2,153
Menefee	2,144	2,174
Point Lookout	3,199	3,268
Mancos	3,337	3,411
Gallup (MNCS_A)	3,674	3,768
MNCS_B	3,792	3,912
MNCS_C	3,864	4,015
MNCS_Cms	3,906	4,087
P.O.E. TARGET	4,008	4,503
PROJECTED TD	3,899	16,647

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	240	13.375	54.5	J-55	BTC	0	240
Intermediate	12.250	2,543	9.625	36.0	J-55	LTC	0	2,543
Production	8.500	16,647	5.500	17.0	P-110	LTC	0	16,647

CEMENT PROPERTIES SUMMARY:

	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	Class G	15.8	1.174	5.15	0.6946	100%	0	284
Inter. (Lead)	G:POZ Blend	12.3	1.987	10.16	0.3627	70%	0	558
Inter. (Tail)	Class G	15.8	1.148	4.98	0.3132	20%	2,043	164
Prod. (Lead)	G:POZ blend	12.4	1.907	9.981	0.2691	50%	0	759
Prod. (Tail)	G:POZ blend	13.3	1.360	5.999	0.2291	10%	3,768	2,386

COMPLETION / PRODUCTION SUMMARY:

Frac: 70 plug-and-perf stages with 280,000 bbls slickwater fluid and 23,000,000 lbs of proppant (estimated)

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

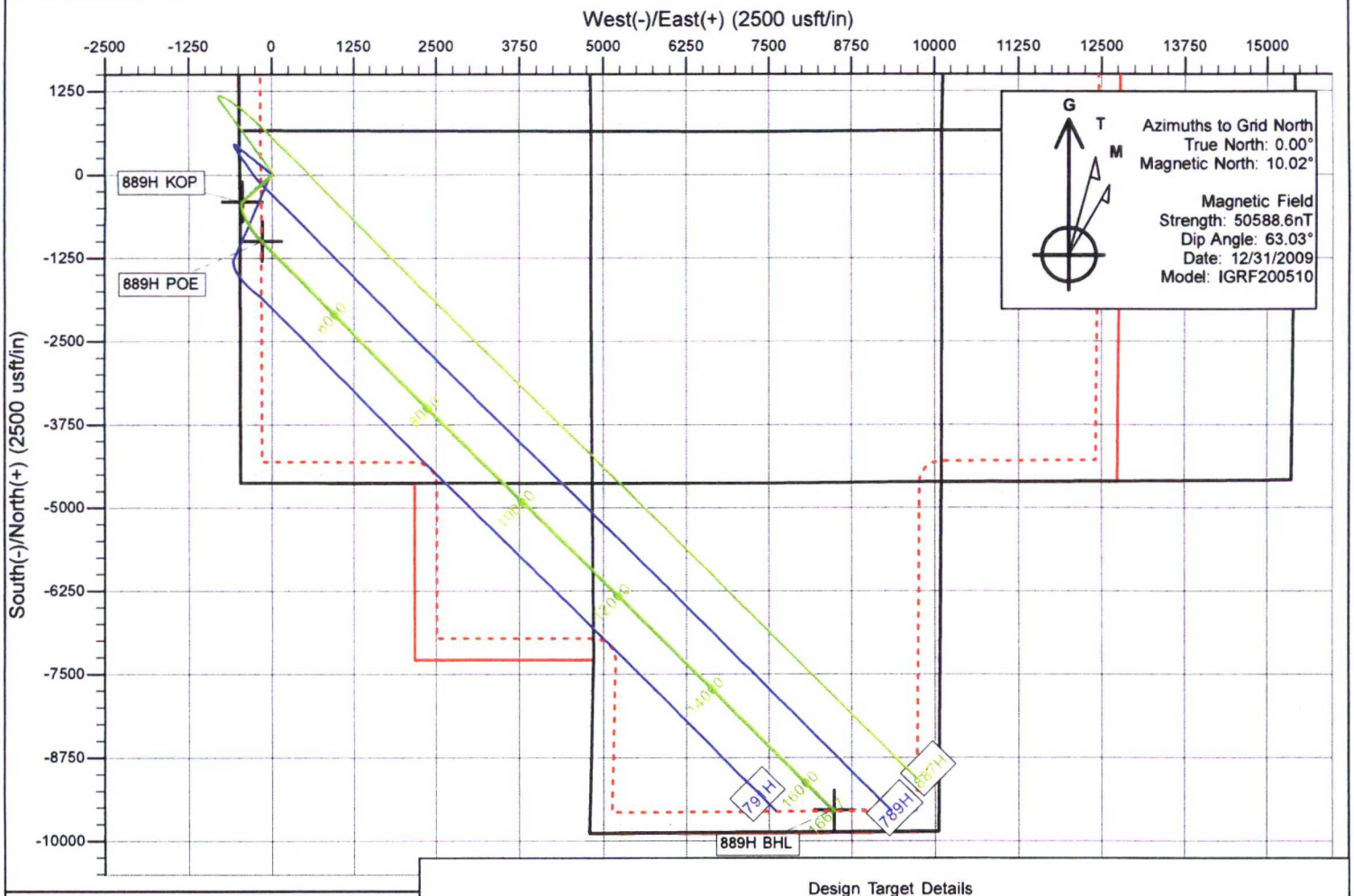
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

Enduring Resources LLC

Directional Drilling Plan
Plan View & Section View

Kimbeto Wash Unit 889H

San Juan County, New Mexico
T23N-R09W-Sec.30-Lot D
Surface Latitude: 36.203349°N
Surface Longitude: 107.837349°W
Ground Level: 6596.0
Reference Elevation: KB @ 6624.0usft (Original Well Elev)

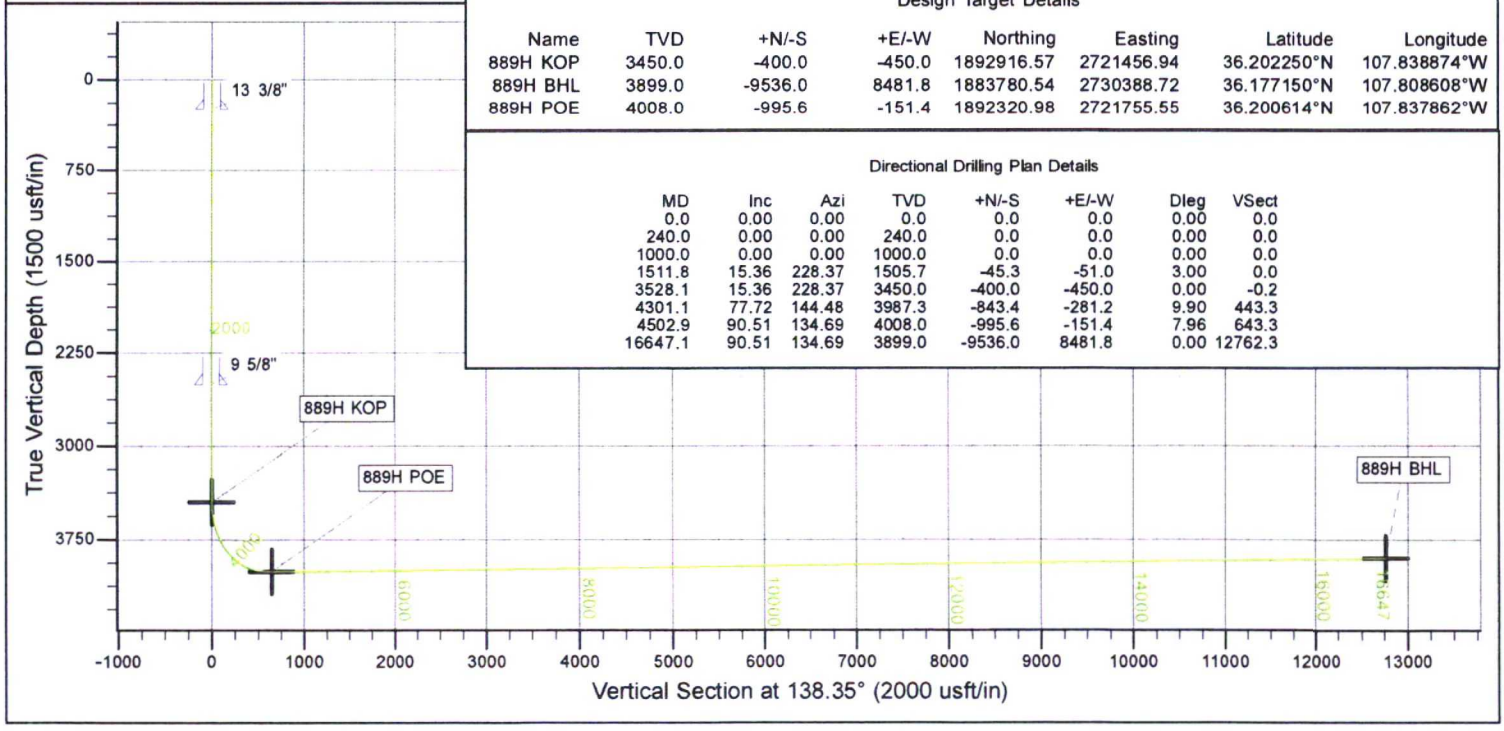


Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
889H KOP	3450.0	-400.0	-450.0	1892916.57	2721456.94	36.202250°N	107.838874°W
889H BHL	3899.0	-9536.0	8481.8	1883780.54	2730388.72	36.177150°N	107.808608°W
889H POE	4008.0	-995.6	-151.4	1892320.98	2721755.55	36.200614°N	107.837862°W

Directional Drilling Plan Details

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
240.0	0.00	0.00	240.0	0.0	0.0	0.00	0.0
1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.0
1511.8	15.36	228.37	1505.7	-45.3	-51.0	3.00	0.0
3528.1	15.36	228.37	3450.0	-400.0	-450.0	0.00	-0.2
4301.1	77.72	144.48	3987.3	-843.4	-281.2	9.90	443.3
4502.9	90.51	134.69	4008.0	-995.6	-151.4	7.96	643.3
16647.1	90.51	134.69	3899.0	-9536.0	8481.8	0.00	12762.3



Enduring Resources LLC

San Juan Basin - Kimbeto Wash Unit
789H Pad
889H

Wellbore #1

Plan: Design #1

Standard Planning Report

24 July, 2019

Database:	EDM	**Local Co-ordinate Reference:**	Well 889H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6624.0usft (Original Well Elev)
Project:	San Juan Basin - Kimbeto Wash Unit	**MD Reference:**	KB @ 6624.0usft (Original Well Elev)
Site:	789H Pad	**North Reference:**	Grid
Well:	889H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	San Juan Basin - Kimbeto Wash Unit		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	789H Pad, San Juan County, New Mexico				
Site Position:		**Northing:**	1,893,314.75 usft	**Latitude:**	36.203344°N
From:	Lat/Long	**Easting:**	2,721,927.00 usft	**Longitude:**	107.837281°W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.00 °

Well	889H					
Well Position	**+N/-S**	1.8 usft	**Northing:**	1,893,316.57 usft	**Latitude:**	36.203349°N
	+E/-W	-20.1 usft	**Easting:**	2,721,906.94 usft	**Longitude:**	107.837349°W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	6,596.0 usft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	12/31/2009	10.02	63.03	50,588.55579641

Design	Design #1				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	138.35	

Plan Survey Tool Program **Date** 7/24/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	16,647.1	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
240.0	0.00	0.00	240.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,511.8	15.36	228.37	1,505.7	-45.3	-51.0	3.00	3.00	0.00	228.37	
3,528.1	15.36	228.37	3,450.0	-400.0	-450.0	0.00	0.00	0.00	0.00	889H KOP
4,301.1	77.72	144.48	3,987.3	-843.4	-281.2	9.90	8.07	-10.85	-87.40	
4,502.9	90.51	134.69	4,008.0	-995.6	-151.4	7.96	6.34	-4.86	-37.93	889H POE
16,647.1	90.51	134.69	3,899.0	-9,536.0	8,481.8	0.00	0.00	0.00	0.00	889H BHL

Database:	EDM	**Local Co-ordinate Reference:**	Well 889H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6624.0usft (Original Well Elev)
Project:	San Juan Basin - Kimbeto Wash Unit	**MD Reference:**	KB @ 6624.0usft (Original Well Elev)
Site:	789H Pad	**North Reference:**	Grid
Well:	889H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
109.0	0.00	0.00	109.0	0.0	0.0	0.0	0.00	0.00	0.00
Ojo Alamo									
194.0	0.00	0.00	194.0	0.0	0.0	0.0	0.00	0.00	0.00
Kirtland									
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
13 3/8"									
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
479.0	0.00	0.00	479.0	0.0	0.0	0.0	0.00	0.00	0.00
Fruitland									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
824.0	0.00	0.00	824.0	0.0	0.0	0.0	0.00	0.00	0.00
Pictured Cliffs									
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
944.0	0.00	0.00	944.0	0.0	0.0	0.0	0.00	0.00	0.00
Lewis									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	3.00	228.37	1,100.0	-1.7	-2.0	0.0	3.00	3.00	0.00
1,184.3	5.53	228.37	1,184.0	-5.9	-6.6	0.0	3.00	3.00	0.00
Chacra									
1,200.0	6.00	228.37	1,199.6	-7.0	-7.8	0.0	3.00	3.00	0.00
1,300.0	9.00	228.37	1,298.8	-15.6	-17.6	0.0	3.00	3.00	0.00
1,400.0	12.00	228.37	1,397.1	-27.7	-31.2	0.0	3.00	3.00	0.00
1,500.0	15.00	228.37	1,494.3	-43.2	-48.6	0.0	3.00	3.00	0.00
1,511.8	15.36	228.37	1,505.7	-45.3	-51.0	0.0	3.00	3.00	0.00
1,600.0	15.36	228.37	1,590.7	-60.8	-68.4	0.0	0.00	0.00	0.00
1,700.0	15.36	228.37	1,687.2	-78.4	-88.2	0.0	0.00	0.00	0.00
1,800.0	15.36	228.37	1,783.6	-96.0	-108.0	0.0	0.00	0.00	0.00
1,900.0	15.36	228.37	1,880.0	-113.6	-127.8	-0.1	0.00	0.00	0.00
2,000.0	15.36	228.37	1,976.5	-131.2	-147.6	-0.1	0.00	0.00	0.00
2,100.0	15.36	228.37	2,072.9	-148.8	-167.4	-0.1	0.00	0.00	0.00
2,153.0	15.36	228.37	2,124.0	-158.1	-177.8	-0.1	0.00	0.00	0.00
Cliff House									
2,173.7	15.36	228.37	2,144.0	-161.7	-182.0	-0.1	0.00	0.00	0.00
Menefee									
2,200.0	15.36	228.37	2,169.3	-166.4	-187.2	-0.1	0.00	0.00	0.00
2,300.0	15.36	228.37	2,265.8	-184.0	-206.9	-0.1	0.00	0.00	0.00
2,400.0	15.36	228.37	2,362.2	-201.5	-226.7	-0.1	0.00	0.00	0.00
2,500.0	15.36	228.37	2,458.6	-219.1	-246.5	-0.1	0.00	0.00	0.00
2,542.9	15.36	228.37	2,500.0	-226.7	-255.0	-0.1	0.00	0.00	0.00
9 5/8"									
2,600.0	15.36	228.37	2,555.1	-236.7	-266.3	-0.1	0.00	0.00	0.00
2,700.0	15.36	228.37	2,651.5	-254.3	-286.1	-0.1	0.00	0.00	0.00
2,800.0	15.36	228.37	2,747.9	-271.9	-305.9	-0.1	0.00	0.00	0.00
2,900.0	15.36	228.37	2,844.3	-289.5	-325.7	-0.1	0.00	0.00	0.00
3,000.0	15.36	228.37	2,940.8	-307.1	-345.5	-0.1	0.00	0.00	0.00
3,100.0	15.36	228.37	3,037.2	-324.7	-365.3	-0.2	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 889H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6624.0usft (Original Well Elev)
Project:	San Juan Basin - Kimbeto Wash Unit	**MD Reference:**	KB @ 6624.0usft (Original Well Elev)
Site:	789H Pad	**North Reference:**	Grid
Well:	889H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,200.0	15.36	228.37	3,133.6	-342.3	-385.1	-0.2	0.00	0.00	0.00
3,267.8	15.36	228.37	3,199.0	-354.2	-398.5	-0.2	0.00	0.00	0.00
Point Lookout									
3,300.0	15.36	228.37	3,230.1	-359.9	-404.9	-0.2	0.00	0.00	0.00
3,400.0	15.36	228.37	3,326.5	-377.5	-424.7	-0.2	0.00	0.00	0.00
3,410.9	15.36	228.37	3,337.0	-379.4	-426.8	-0.2	0.00	0.00	0.00
Mancos									
3,500.0	15.36	228.37	3,422.9	-395.1	-444.4	-0.2	0.00	0.00	0.00
3,528.1	15.36	228.37	3,450.0	-400.0	-450.0	-0.2	0.00	0.00	0.00
3,600.0	17.18	203.58	3,519.1	-416.1	-461.4	4.3	9.90	2.54	-34.47
3,700.0	23.29	180.65	3,613.1	-449.5	-467.5	25.1	9.90	6.11	-22.92
3,767.8	28.61	171.25	3,674.0	-478.9	-465.2	48.7	9.90	7.85	-13.87
Gallup (MNCS_A)									
3,800.0	31.31	167.86	3,701.9	-494.8	-462.3	62.5	9.90	8.39	-10.53
3,900.0	40.12	160.06	3,783.1	-550.6	-445.8	115.1	9.90	8.81	-7.81
3,911.8	41.19	159.33	3,792.0	-557.8	-443.1	122.3	9.90	9.05	-6.17
MNCS_B									
4,000.0	49.29	154.71	3,854.1	-615.3	-418.5	181.6	9.90	9.18	-5.23
4,015.4	50.72	154.03	3,864.0	-626.0	-413.4	193.0	9.90	9.29	-4.46
MNCS_C									
4,087.0	57.43	151.16	3,906.0	-677.4	-386.7	249.1	9.90	9.36	-4.01
MNCS_Cms									
4,100.0	58.65	150.68	3,912.9	-687.0	-381.3	259.9	9.90	9.41	-3.64
4,200.0	68.10	147.39	3,957.6	-763.5	-335.3	347.6	9.90	9.46	-3.29
4,300.0	77.62	144.52	3,987.1	-842.5	-281.8	442.2	9.90	9.51	-2.88
4,301.1	77.72	144.48	3,987.3	-843.4	-281.2	443.3	9.90	9.53	-2.74
4,400.0	83.97	139.63	4,003.1	-920.3	-221.2	540.7	7.96	6.32	-4.91
4,500.0	90.33	134.83	4,008.0	-993.6	-153.4	640.4	7.96	6.36	-4.80
4,502.9	90.51	134.69	4,008.0	-995.6	-151.4	643.3	7.96	6.37	-4.78
4,600.0	90.51	134.69	4,007.1	-1,063.9	-82.3	740.2	0.00	0.00	0.00
4,700.0	*90.51*	*134.69*	*4,006.2*	*-1,134.2*	*-11.3*	*840.0*	*0.00*	*0.00*	*0.00*
4,800.0	90.51	134.69	4,005.3	-1,204.6	59.8	939.8	0.00	0.00	0.00
4,900.0	90.51	134.69	4,004.4	-1,274.9	130.9	1,039.6	0.00	0.00	0.00
5,000.0	90.51	134.69	4,003.5	-1,345.2	202.0	1,139.4	0.00	0.00	0.00
5,100.0	90.51	134.69	4,002.6	-1,415.5	273.1	1,239.2	0.00	0.00	0.00
5,200.0	90.51	134.69	4,001.7	-1,485.9	344.2	1,339.0	0.00	0.00	0.00
5,300.0	90.51	134.69	4,000.8	-1,556.2	415.3	1,438.8	0.00	0.00	0.00
5,400.0	90.51	134.69	3,999.9	-1,626.5	486.4	1,538.6	0.00	0.00	0.00
5,500.0	*90.51*	*134.69*	*3,999.1*	*-1,696.8*	*557.5*	*1,638.4*	*0.00*	*0.00*	*0.00*
5,600.0	90.51	134.69	3,998.2	-1,767.2	628.5	1,738.1	0.00	0.00	0.00
5,700.0	90.51	134.69	3,997.3	-1,837.5	699.6	1,837.9	0.00	0.00	0.00
5,800.0	90.51	134.69	3,996.4	-1,907.8	770.7	1,937.7	0.00	0.00	0.00
5,900.0	90.51	134.69	3,995.5	-1,978.1	841.8	2,037.5	0.00	0.00	0.00
6,000.0	90.51	134.69	3,994.6	-2,048.5	912.9	2,137.3	0.00	0.00	0.00
6,100.0	90.51	134.69	3,993.7	-2,118.8	984.0	2,237.1	0.00	0.00	0.00
6,200.0	90.51	134.69	3,992.8	-2,189.1	1,055.1	2,336.9	0.00	0.00	0.00
6,300.0	90.51	134.69	3,991.9	-2,259.4	1,126.2	2,436.7	0.00	0.00	0.00
6,400.0	90.51	134.69	3,991.0	-2,329.8	1,197.3	2,536.5	0.00	0.00	0.00
6,500.0	90.51	134.69	3,990.1	-2,400.1	1,268.3	2,636.3	0.00	0.00	0.00
6,600.0	90.51	134.69	3,989.2	-2,470.4	1,339.4	2,736.1	0.00	0.00	0.00
6,700.0	90.51	134.69	3,988.3	-2,540.7	1,410.5	2,835.9	0.00	0.00	0.00
6,800.0	90.51	134.69	3,987.4	-2,611.1	1,481.6	2,935.7	0.00	0.00	0.00
6,900.0	90.51	134.69	3,986.5	-2,681.4	1,552.7	3,035.4	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 889H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6624.0usft (Original Well Elev)
Project:	San Juan Basin - Kimbeto Wash Unit	**MD Reference:**	KB @ 6624.0usft (Original Well Elev)
Site:	789H Pad	**North Reference:**	Grid
Well:	889H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,000.0	90.51	134.69	3,985.6	-2,751.7	1,623.8	3,135.2	0.00	0.00	0.00
7,100.0	90.51	134.69	3,984.7	-2,822.0	1,694.9	3,235.0	0.00	0.00	0.00
7,200.0	90.51	134.69	3,983.8	-2,892.4	1,766.0	3,334.8	0.00	0.00	0.00
7,300.0	90.51	134.69	3,982.9	-2,962.7	1,837.1	3,434.6	0.00	0.00	0.00
7,400.0	90.51	134.69	3,982.0	-3,033.0	1,908.1	3,534.4	0.00	0.00	0.00
7,500.0	90.51	134.69	3,981.1	-3,103.3	1,979.2	3,634.2	0.00	0.00	0.00
7,600.0	90.51	134.69	3,980.2	-3,173.7	2,050.3	3,734.0	0.00	0.00	0.00
7,700.0	90.51	134.69	3,979.3	-3,244.0	2,121.4	3,833.8	0.00	0.00	0.00
7,800.0	90.51	134.69	3,978.4	-3,314.3	2,192.5	3,933.6	0.00	0.00	0.00
7,900.0	90.51	134.69	3,977.5	-3,384.6	2,263.6	4,033.4	0.00	0.00	0.00
8,000.0	90.51	134.69	3,976.6	-3,455.0	2,334.7	4,133.2	0.00	0.00	0.00
8,100.0	90.51	134.69	3,975.7	-3,525.3	2,405.8	4,233.0	0.00	0.00	0.00
8,200.0	90.51	134.69	3,974.8	-3,595.6	2,476.8	4,332.7	0.00	0.00	0.00
8,300.0	90.51	134.69	3,973.9	-3,665.9	2,547.9	4,432.5	0.00	0.00	0.00
8,400.0	90.51	134.69	3,973.0	-3,736.3	2,619.0	4,532.3	0.00	0.00	0.00
8,500.0	90.51	134.69	3,972.1	-3,806.6	2,690.1	4,632.1	0.00	0.00	0.00
8,600.0	90.51	134.69	3,971.2	-3,876.9	2,761.2	4,731.9	0.00	0.00	0.00
8,700.0	90.51	134.69	3,970.3	-3,947.2	2,832.3	4,831.7	0.00	0.00	0.00
8,800.0	90.51	134.69	3,969.4	-4,017.6	2,903.4	4,931.5	0.00	0.00	0.00
8,900.0	90.51	134.69	3,968.5	-4,087.9	2,974.5	5,031.3	0.00	0.00	0.00
9,000.0	90.51	134.69	3,967.6	-4,158.2	3,045.6	5,131.1	0.00	0.00	0.00
9,100.0	90.51	134.69	3,966.7	-4,228.5	3,116.6	5,230.9	0.00	0.00	0.00
9,200.0	90.51	134.69	3,965.8	-4,298.9	3,187.7	5,330.7	0.00	0.00	0.00
9,300.0	90.51	134.69	3,964.9	-4,369.2	3,258.8	5,430.5	0.00	0.00	0.00
9,400.0	90.51	134.69	3,964.0	-4,439.5	3,329.9	5,530.3	0.00	0.00	0.00
9,500.0	90.51	134.69	3,963.1	-4,509.8	3,401.0	5,630.0	0.00	0.00	0.00
9,600.0	90.51	134.69	3,962.3	-4,580.2	3,472.1	5,729.8	0.00	0.00	0.00
9,700.0	90.51	134.69	3,961.4	-4,650.5	3,543.2	5,829.6	0.00	0.00	0.00
9,800.0	90.51	134.69	3,960.5	-4,720.8	3,614.3	5,929.4	0.00	0.00	0.00
9,900.0	90.51	134.69	3,959.6	-4,791.1	3,685.4	6,029.2	0.00	0.00	0.00
10,000.0	90.51	134.69	3,958.7	-4,861.5	3,756.4	6,129.0	0.00	0.00	0.00
10,100.0	90.51	134.69	3,957.8	-4,931.8	3,827.5	6,228.8	0.00	0.00	0.00
10,200.0	90.51	134.69	3,956.9	-5,002.1	3,898.6	6,328.6	0.00	0.00	0.00
10,300.0	90.51	134.69	3,956.0	-5,072.4	3,969.7	6,428.4	0.00	0.00	0.00
10,400.0	90.51	134.69	3,955.1	-5,142.8	4,040.8	6,528.2	0.00	0.00	0.00
10,500.0	90.51	134.69	3,954.2	-5,213.1	4,111.9	6,628.0	0.00	0.00	0.00
10,600.0	90.51	134.69	3,953.3	-5,283.4	4,183.0	6,727.8	0.00	0.00	0.00
10,700.0	90.51	134.69	3,952.4	-5,353.7	4,254.1	6,827.6	0.00	0.00	0.00
10,800.0	90.51	134.69	3,951.5	-5,424.1	4,325.1	6,927.3	0.00	0.00	0.00
10,900.0	90.51	134.69	3,950.6	-5,494.4	4,396.2	7,027.1	0.00	0.00	0.00
11,000.0	90.51	134.69	3,949.7	-5,564.7	4,467.3	7,126.9	0.00	0.00	0.00
11,100.0	90.51	134.69	3,948.8	-5,635.0	4,538.4	7,226.7	0.00	0.00	0.00
11,200.0	90.51	134.69	3,947.9	-5,705.4	4,609.5	7,326.5	0.00	0.00	0.00
11,300.0	90.51	134.69	3,947.0	-5,775.7	4,680.6	7,426.3	0.00	0.00	0.00
11,400.0	90.51	134.69	3,946.1	-5,846.0	4,751.7	7,526.1	0.00	0.00	0.00
11,500.0	90.51	134.69	3,945.2	-5,916.3	4,822.8	7,625.9	0.00	0.00	0.00
11,600.0	90.51	134.69	3,944.3	-5,986.7	4,893.9	7,725.7	0.00	0.00	0.00
11,700.0	90.51	134.69	3,943.4	-6,057.0	4,964.9	7,825.5	0.00	0.00	0.00
11,800.0	90.51	134.69	3,942.5	-6,127.3	5,036.0	7,925.3	0.00	0.00	0.00
11,900.0	90.51	134.69	3,941.6	-6,197.6	5,107.1	8,025.1	0.00	0.00	0.00
12,000.0	90.51	134.69	3,940.7	-6,268.0	5,178.2	8,124.9	0.00	0.00	0.00
12,100.0	90.51	134.69	3,939.8	-6,338.3	5,249.3	8,224.6	0.00	0.00	0.00
12,200.0	90.51	134.69	3,938.9	-6,408.6	5,320.4	8,324.4	0.00	0.00	0.00
12,300.0	90.51	134.69	3,938.0	-6,478.9	5,391.5	8,424.2	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 889H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6624.0usft (Original Well Elev)
Project:	San Juan Basin - Kimbeto Wash Unit	**MD Reference:**	KB @ 6624.0usft (Original Well Elev)
Site:	789H Pad	**North Reference:**	Grid
Well:	889H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,400.0	90.51	134.69	3,937.1	-6,549.3	5,462.6	8,524.0	0.00	0.00	0.00
12,500.0	90.51	134.69	3,936.2	-6,619.6	5,533.7	8,623.8	0.00	0.00	0.00
12,600.0	90.51	134.69	3,935.3	-6,689.9	5,604.7	8,723.6	0.00	0.00	0.00
12,700.0	90.51	134.69	3,934.4	-6,760.2	5,675.8	8,823.4	0.00	0.00	0.00
12,800.0	90.51	134.69	3,933.5	-6,830.6	5,746.9	8,923.2	0.00	0.00	0.00
12,900.0	90.51	134.69	3,932.6	-6,900.9	5,818.0	9,023.0	0.00	0.00	0.00
13,000.0	90.51	134.69	3,931.7	-6,971.2	5,889.1	9,122.8	0.00	0.00	0.00
13,100.0	90.51	134.69	3,930.8	-7,041.5	5,960.2	9,222.6	0.00	0.00	0.00
13,200.0	90.51	134.69	3,929.9	-7,111.9	6,031.3	9,322.4	0.00	0.00	0.00
13,300.0	90.51	134.69	3,929.0	-7,182.2	6,102.4	9,422.2	0.00	0.00	0.00
13,400.0	90.51	134.69	3,928.1	-7,252.5	6,173.5	9,521.9	0.00	0.00	0.00
13,500.0	90.51	134.69	3,927.2	-7,322.8	6,244.5	9,621.7	0.00	0.00	0.00
13,600.0	90.51	134.69	3,926.3	-7,393.2	6,315.6	9,721.5	0.00	0.00	0.00
13,700.0	90.51	134.69	3,925.5	-7,463.5	6,386.7	9,821.3	0.00	0.00	0.00
13,800.0	90.51	134.69	3,924.6	-7,533.8	6,457.8	9,921.1	0.00	0.00	0.00
13,900.0	90.51	134.69	3,923.7	-7,604.1	6,528.9	10,020.9	0.00	0.00	0.00
14,000.0	90.51	134.69	3,922.8	-7,674.5	6,600.0	10,120.7	0.00	0.00	0.00
14,100.0	90.51	134.69	3,921.9	-7,744.8	6,671.1	10,220.5	0.00	0.00	0.00
14,200.0	90.51	134.69	3,921.0	-7,815.1	6,742.2	10,320.3	0.00	0.00	0.00
14,300.0	90.51	134.69	3,920.1	-7,885.4	6,813.2	10,420.1	0.00	0.00	0.00
14,400.0	90.51	134.69	3,919.2	-7,955.8	6,884.3	10,519.9	0.00	0.00	0.00
14,500.0	90.51	134.69	3,918.3	-8,026.1	6,955.4	10,619.7	0.00	0.00	0.00
14,600.0	90.51	134.69	3,917.4	-8,096.4	7,026.5	10,719.4	0.00	0.00	0.00
14,700.0	90.51	134.69	3,916.5	-8,166.7	7,097.6	10,819.2	0.00	0.00	0.00
14,800.0	90.51	134.69	3,915.6	-8,237.1	7,168.7	10,919.0	0.00	0.00	0.00
14,900.0	90.51	134.69	3,914.7	-8,307.4	7,239.8	11,018.8	0.00	0.00	0.00
15,000.0	90.51	134.69	3,913.8	-8,377.7	7,310.9	11,118.6	0.00	0.00	0.00
15,100.0	90.51	134.69	3,912.9	-8,448.0	7,382.0	11,218.4	0.00	0.00	0.00
15,200.0	90.51	134.69	3,912.0	-8,518.4	7,453.0	11,318.2	0.00	0.00	0.00
15,300.0	90.51	134.69	3,911.1	-8,588.7	7,524.1	11,418.0	0.00	0.00	0.00
15,400.0	90.51	134.69	3,910.2	-8,659.0	7,595.2	11,517.8	0.00	0.00	0.00
15,500.0	90.51	134.69	3,909.3	-8,729.3	7,666.3	11,617.6	0.00	0.00	0.00
15,600.0	90.51	134.69	3,908.4	-8,799.7	7,737.4	11,717.4	0.00	0.00	0.00
15,700.0	90.51	134.69	3,907.5	-8,870.0	7,808.5	11,817.2	0.00	0.00	0.00
15,800.0	90.51	134.69	3,906.6	-8,940.3	7,879.6	11,917.0	0.00	0.00	0.00
15,900.0	90.51	134.69	3,905.7	-9,010.6	7,950.7	12,016.7	0.00	0.00	0.00
16,000.0	90.51	134.69	3,904.8	-9,081.0	8,021.8	12,116.5	0.00	0.00	0.00
16,100.0	90.51	134.69	3,903.9	-9,151.3	8,092.8	12,216.3	0.00	0.00	0.00
16,200.0	90.51	134.69	3,903.0	-9,221.6	8,163.9	12,316.1	0.00	0.00	0.00
16,300.0	90.51	134.69	3,902.1	-9,291.9	8,235.0	12,415.9	0.00	0.00	0.00
16,400.0	90.51	134.69	3,901.2	-9,362.3	8,306.1	12,515.7	0.00	0.00	0.00
16,500.0	90.51	134.69	3,900.3	-9,432.6	8,377.2	12,615.5	0.00	0.00	0.00
16,600.0	90.51	134.69	3,899.4	-9,502.9	8,448.3	12,715.3	0.00	0.00	0.00
16,647.1	90.51	134.69	3,899.0	-9,536.0	8,481.8	12,762.3	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 889H
Company:	Enduring Resources LLC	**TVD Reference:**	KB @ 6624.0usft (Original Well Elev)
Project:	San Juan Basin - Kimbeto Wash Unit	**MD Reference:**	KB @ 6624.0usft (Original Well Elev)
Site:	789H Pad	**North Reference:**	Grid
Well:	889H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
889H KOP - plan hits target center - Point	0.00	0.01	3,450.0	-400.0	-450.0	1,892,916.57	2,721,456.94	36.202250°N	107.838874°W
889H BHL - plan hits target center - Point	0.00	0.01	3,899.0	-9,536.0	8,481.8	1,883,780.54	2,730,388.72	36.177150°N	107.808608°W
889H POE - plan hits target center - Point	0.00	0.01	4,008.0	-995.6	-151.4	1,892,320.99	2,721,755.55	36.200614°N	107.837862°W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
240.0	240.0	13 3/8"	13-3/8	17-1/2
2,542.9	2,500.0	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
109.0	109.0	Ojo Alamo		0.00	
194.0	194.0	Kirtland		0.00	
479.0	479.0	Fruitland		0.00	
824.0	824.0	Pictured Cliffs		0.00	
944.0	944.0	Lewis		0.00	
1,184.3	1,184.0	Chacra		0.00	
2,153.0	2,124.0	Cliff House		0.00	
2,173.7	2,144.0	Menefee		0.00	
3,267.8	3,199.0	Point Lookout		0.00	
3,410.9	3,337.0	Mancos		0.00	
3,767.8	3,674.0	Gallup (MNCS_A)		0.00	
3,911.8	3,792.0	MNCS_B		0.00	
4,015.4	3,864.0	MNCS_C		0.00	
4,087.0	3,906.0	MNCS_Cms		0.00	