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Farmington Field Office
Bureau of Land Management

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.
NMNM136298

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.
NMNM 135255A

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

8. Well Name and No.
Kimbeto Wash Unit 769H

2. Name of Operator
Enduring Resources IV, LLC

9. API Well No.
30-045-35754

3a. Address
332 Cr 3100 Aztec, NM 87410

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

10. Field and Pool or Exploratory Area
Basin Mancos

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
SHL: 440' FSL & 1089' FEL Sec 17 T23N R9W Unit: P
SHL: 330' FNL & 382' FEL Sec 18 T23N R9W Unit: A

11. Country or Parish, State
San Juan, 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 ShutOff
☐Subsequent Report	☐Alter Casing	☐Hydraulic Fracturing	☐Reclamation	☐Well Integrity
☐Final Abandonment Notice	☐Casing Repair	☐New Construction	☐Recomplete	☒Other **CHANGE IN PLANS**
	☒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 worybk and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Enduring Resources IV, LLC requests a change in plans for the casing program per attached updated:

C102
Wellbore
Drill plan
Ops plan

NMOCD
AUG 14 2018
DISTRICT III

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

Title: Permit Specialist

Signature

Date: 7/24/18

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title PE

Date 8/13/18

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 FFO

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.

NMOCD

ADHERE TO PREVIOUS NMOCD CONDITIONS OF APPROVAL

14

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
30-045-35754	97232	BASIN MANCOS

4 Property Code	5 Property Name	6 Well Number
321239	KIMBETO WASH UNIT	769H

7 OGRID No.	8 Operator Name	9 Elevation
372286	ENDURING RESOURCES, LLC	6561'

10 Surface Location

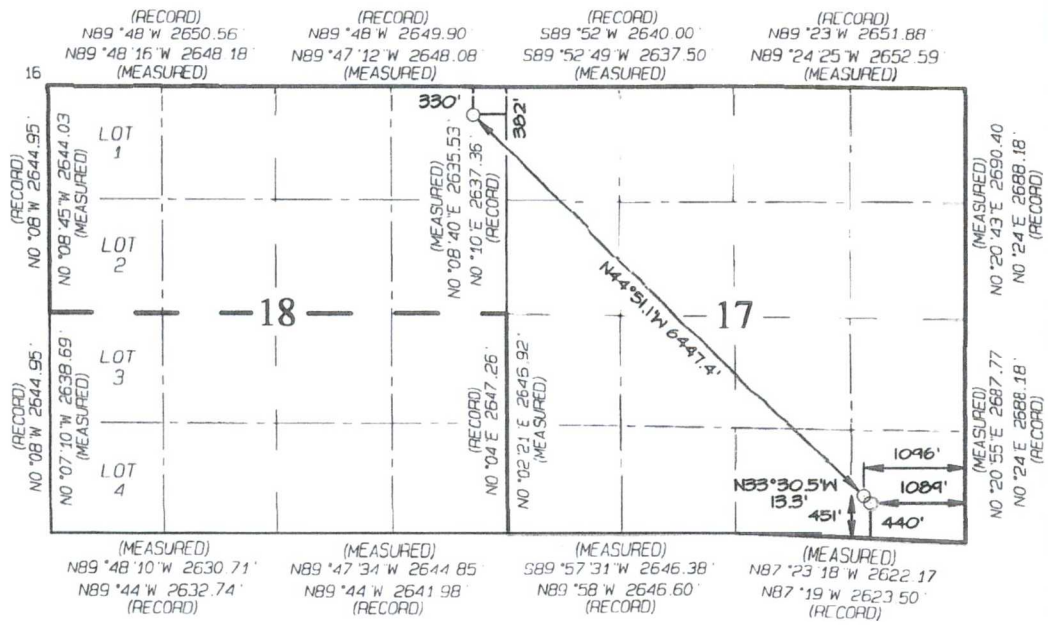
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	17	23N	9W		440	SOUTH	1089	EAST	SAN JUAN

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
A	18	23N	9W		330	NORTH	382	EAST	SAN JUAN

12 Dedicated Acres		13 Joint or Infill	14 Consolidation Code	15 Order No.
959.88	Entire Section 17 N/2 - Section 18			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



END-OF-LATERAL
330' FNL 382' FEL
SEC 18, T23N, R9W
LAT: 36.233240 °N
LONG: 107.821805 °W
DATUM: NAD1927

LAT: 36.233252 °N
LONG: 107.822421 °W
DATUM: NAD1983

POINT-OF-ENTRY
451' FSL 1096' FEL
SEC 17, T23N, R9W
LAT. 36.220681 °N
LONG. 107.806392 °W
DATUM: NAD1927

LAT: 36.220694 °N
LONG: 107.807007 °W
DATUM: NAD1983

SURFACE LOCATION
440' FSL 1089' FEL
SEC 17, T23N, R9W
LAT. 36.220650 °N
LONG: 107.806366 °W
DATUM: NAD1927

LAT: 36.220663 °N
LONG: 107.806982 °W
DATUM: NAD1983

17 OPERATOR CERTIFICATION

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

Signature — Date: 7/24/18

Laćey Granillo

Printed Name

lgranillo@enduringresources.com

E-mail Address

18 SURVEYOR CERTIFICATION

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

Date Revised: JUNE 26, 2018
Survey Date: DECEMBER 3, 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 Gallup formation***

WELL INFORMATION:

Name: **Kimbeto Wash Unit 769H**

API Number: **30-045-**

State: New Mexico

County: San Juan

Surface Elevation: 6,561 ft ASL (GL) 6,583 ft ASL (KB)

Surface Location: 17-23N-09W Sec-Twn-Rng 440 ft FSL 1,089 ft FEL
36.220663 ° N latitude 107.806982 ° W longitude (NAD 83)

BH Location: 18-23N-09W Sec-Twn-Rng 330 ft FNL 382 ft FEL
36.233252 ° N latitude 107.822421 ° 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 intersection; straight (southwest) exiting CR7800 and continuing on 7820 for 0.6 miles to fork in road, right (southwest) on 7820 for 1.1 miles to 4-way intersection, straight (southwest) for 2.7 miles to existing access road for Kimbeto Wash 771H well.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	6,438	145	145	W	normal
Kirtland	6,341	242	242	W	normal
Fruitland	6,081	502	502	G, W	sub
Pictured Cliffs	5,731	852	853	G, W	sub
Lewis	5,526	1,057	1,061	G, W	normal
Chacra	5,341	1,242	1,250	G, W	normal
Cliff House	4,336	2,247	2,282	G, W	sub
Menefee	4,321	2,262	2,298	G, W	normal
Point Lookout	3,331	3,252	3,315	G, W	normal
Mancos	3,051	3,532	3,602	O,G	normal
Gallup (MNCS. A)	2,826	3,757	3,833	O,G	normal
Gallup (Target Depth)	**2,079**	**4,504**	**5,081**	**O,G**	**normal**
PROJECTED WELL TD	**2,049**	**4,534**	**11,528**	**O,G**	**normal**

Surface: Nacimiento

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

Pressure: Normal pressure gradient (0.43 psi/ft) 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: 1,940 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 950 psi

Temperature: **Maximum anticipated BHT is 165° 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 chromatograph from drillout of 13-3/8" casing to TD.

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

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

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

DRILLING RIG INFORMATION:

Contractor: Aztec

Rig No.: 1000

Draw Works: E80 AC 1,500 hp

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

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

Prime Movers: 4 - GE Jenbacher Natural Gas Generator

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

BOPE 1: Cameron double gate ram (11", 3,000 psi)

BOPE 2: Cameron annular (11", 3,000 psi)

Choke Cameron (4", 10,000 psi)

KB-GL (ft): 22

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 5,000 psi for 10 minutes, and the annular preventer will be tested to 2,500 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 ft (MD)**	**Hole Section Length:**	**240 ft**
0 ft (TVD)	**to**	**240 ft ft (TVD)**	**Casing Required:**	**220 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, run gyro survey after drilling

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	510	111,406	111,406
Min. S.F.					**10.78**	**5.36**	**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 Details: Float shoe, 1 jt casing, float collar, casing to surface

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

Cement:

Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
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, install wellhead.***

220 ft (MD)	to	2,401 ft (MD)	Hole Section Length:	2,181 ft
220 ft (TVD)	to	2,362 ft (TVD)	Casing Required:	2,401 ft

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

Hole Size: 12-1/4"

Bit / Motor: PDC w/mud motor

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

Logging: None

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

Note: The intermediate hole section may be drilled with annular preventer and blind rams only (no pipe rams). Maximum anticipated surface pressure while drilling intermediate hole section is 500 psi

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					1,032	1,085	175,376	175,376
Min. S.F.					**1.96**	**3.24**	**3.22**	**2.58**

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 Details: Float shoe, 1 jt casing, float collar, landing collar, casing to surface

Centralizers: 2 centralizersper 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)
Lead	G:POZ Blend	12.3	1.987	10.16	0.3132	40%	0	420
Tail	Class G	15.8	1.148	4.98	0.3132	10%	1,901	150

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.***

2,401 ft (MD)	to	11,528 ft (MD)	Hole Section Length:	9,127 ft
2,362 ft (TVD)	to	4,534 ft (TVD)	Casing Required:	11,528 ft

Estimated KOP:	3,928	ft (MD)	3,850	ft (TVD)
Estimated Landing Point (P.O.E.):	5,081	ft (MD)	4,504	ft (TVD)
Estimated Lateral Length:	6,447	ft (MD)		

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

Hole Size: 8-1/2"

Bit / Motor: PDC w/mud motor

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

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

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

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,240	8,924	269,110	269,110
Min. S.F.					**3.33**	**1.19**	**2.03**	**1.65**

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 Details: Float shoe, 2 jts casing, float collar, landing collar, toe-intitiation sleeve with handling pups, 1 jt casing, toe-initiation sleeve, with handling pups, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000'. Place Floatation Sub at KOP (+/-). Continue running casing to surface. **The toe-initiation sleeves must be positioned INSIDE the 330' unit setback.**

Centralizers: Lateral: Minimum of 1 centralizer per 2 joints
Curve: 1 centralizer every joint from landing point to KOP
Vertical: 1 centralizer every 2 joints from KOP to 9-5/8" shoe, 1 every 3 joints from 9-5/8" shoe to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ blend	12.3	1.987	10.16	0.2691	40%	0	689
Tail	G:POZ blend	13.3	1.354	5.94	0.2291	10%	3,850	1,429

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 past applicaple setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled past the setback, the toe Initiation sleeve 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) . Order number for Kimbeto Wash Unit is R-14084.

FINISH WELL: ***ND BOP, NU WH with BPV and cap, RDMO.***

COMPLETION AND PRODUCTION PLAN:

Frac: Lateral will be fracture-stimulated in approximately 33 plug-and-perf stages with approximately 165,000 bbls slickwater fluid and 12,000,000 lbs of proppant.

Flowback: Depending on well pressures, flow back may be either up 5-1/2" casing or 2-7/8" production tubing. Well will be flowed back until proppant volumes are low enough that the well can safely be produced through permanent production facilities.

Production: Well will produce up production tubing via gas-lift into permanent production and storage facilities.

ESTIMATED START DATES:

Drilling: 9/1/2018
Completion: 11/1/2018
Production: 12/15/2018

Prepared by: **Alec Bridge** **7/11/2018**

Enduring Resources LLC

San Juan Basin - Kimbeto Wash Unit
771H pad
769H

Wellbore #1

Plan: Design #1

Standard Planning Report

24 July, 2018

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	771H pad, San Juan Co., New Mexico				
Site Position:		Northing:	1,899,575.11 usft	Latitude:	36.220539°N
From:	Lat/Long	Easting:	2,730,824.78 usft	Longitude:	107.807116°W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.02 °

Well	769H					
Well Position	+N/-S	45.1 usft	Northing:	1,899,620.26 usft	Latitude:	36.220663°N
	+E/-W	39.5 usft	Easting:	2,730,864.29 usft	Longitude:	107.806982°W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,561.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	10.01	63.05	50,603.04475379

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	315.17	

Plan Survey Tool Program Date 7/24/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	11,531.6	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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,159.1	13.18	135.00	1,153.3	-53.4	53.4	2.00	2.00	0.00	135.00	
3,928.8	13.18	135.00	3,850.0	-500.0	500.0	0.00	0.00	0.00	0.00	769H KOP
4,835.7	85.67	315.19	4,494.0	-164.7	167.6	10.90	7.99	-19.83	-179.81	
5,084.1	89.73	315.15	4,504.0	11.3	-7.4	1.64	1.64	-0.02	-0.56	769H POE
11,531.6	89.73	315.15	4,534.0	4,582.2	-4,554.4	0.00	0.00	0.00	0.00	769H BHL

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	2.00	135.00	600.0	-1.2	1.2	-1.7	2.00	2.00	0.00
700.0	4.00	135.00	699.8	-4.9	4.9	-7.0	2.00	2.00	0.00
800.0	6.00	135.00	799.5	-11.1	11.1	-15.7	2.00	2.00	0.00
900.0	8.00	135.00	898.7	-19.7	19.7	-27.9	2.00	2.00	0.00
1,000.0	10.00	135.00	997.5	-30.8	30.8	-43.5	2.00	2.00	0.00
1,100.0	12.00	135.00	1,095.6	-44.3	44.3	-62.6	2.00	2.00	0.00
1,159.1	13.18	135.00	1,153.3	-53.4	53.4	-75.5	2.00	2.00	0.00
1,200.0	13.18	135.00	1,193.1	-60.0	60.0	-84.8	0.00	0.00	0.00
1,300.0	13.18	135.00	1,290.5	-76.1	76.1	-107.6	0.00	0.00	0.00
1,400.0	13.18	135.00	1,387.9	-92.2	92.2	-130.4	0.00	0.00	0.00
1,500.0	13.18	135.00	1,485.2	-108.3	108.3	-153.2	0.00	0.00	0.00
1,600.0	13.18	135.00	1,582.6	-124.5	124.5	-176.0	0.00	0.00	0.00
1,700.0	13.18	135.00	1,679.9	-140.6	140.6	-198.8	0.00	0.00	0.00
1,800.0	13.18	135.00	1,777.3	-156.7	156.7	-221.6	0.00	0.00	0.00
1,900.0	13.18	135.00	1,874.7	-172.8	172.8	-244.4	0.00	0.00	0.00
2,000.0	13.18	135.00	1,972.0	-189.0	189.0	-267.3	0.00	0.00	0.00
2,100.0	13.18	135.00	2,069.4	-205.1	205.1	-290.1	0.00	0.00	0.00
2,200.0	13.18	135.00	2,166.8	-221.2	221.2	-312.9	0.00	0.00	0.00
2,300.0	13.18	135.00	2,264.1	-237.4	237.4	-335.7	0.00	0.00	0.00
2,400.0	13.18	135.00	2,361.5	-253.5	253.5	-358.5	0.00	0.00	0.00
2,500.0	13.18	135.00	2,458.9	-269.6	269.6	-381.3	0.00	0.00	0.00
2,600.0	13.18	135.00	2,556.2	-285.7	285.7	-404.1	0.00	0.00	0.00
2,700.0	13.18	135.00	2,653.6	-301.9	301.9	-426.9	0.00	0.00	0.00
2,800.0	13.18	135.00	2,751.0	-318.0	318.0	-449.7	0.00	0.00	0.00
2,900.0	13.18	135.00	2,848.3	-334.1	334.1	-472.5	0.00	0.00	0.00
3,000.0	13.18	135.00	2,945.7	-350.2	350.2	-495.3	0.00	0.00	0.00
3,100.0	13.18	135.00	3,043.1	-366.4	366.4	-518.1	0.00	0.00	0.00
3,200.0	13.18	135.00	3,140.4	-382.5	382.5	-540.9	0.00	0.00	0.00
3,300.0	13.18	135.00	3,237.8	-398.6	398.6	-563.7	0.00	0.00	0.00
3,400.0	13.18	135.00	3,335.2	-414.7	414.7	-586.5	0.00	0.00	0.00
3,500.0	13.18	135.00	3,432.5	-430.9	430.9	-609.3	0.00	0.00	0.00
3,600.0	13.18	135.00	3,529.9	-447.0	447.0	-632.1	0.00	0.00	0.00
3,700.0	13.18	135.00	3,627.2	-463.1	463.1	-654.9	0.00	0.00	0.00
3,800.0	13.18	135.00	3,724.6	-479.2	479.2	-677.7	0.00	0.00	0.00
3,900.0	13.18	135.00	3,822.0	-495.4	495.4	-700.5	0.00	0.00	0.00
3,928.8	13.18	135.00	3,850.0	-500.0	500.0	-707.1	0.00	0.00	0.00
4,000.0	5.42	134.73	3,920.2	-508.1	508.1	-718.6	10.90	-10.90	-0.38
4,100.0	5.48	315.64	4,020.1	-508.0	508.2	-718.6	10.90	0.06	-179.08
4,200.0	16.38	315.33	4,118.1	-494.5	494.9	-699.6	10.90	10.90	-0.31
4,300.0	27.28	315.27	4,210.8	-468.2	468.8	-662.5	10.90	10.90	-0.06
4,400.0	38.18	315.24	4,294.8	-429.8	430.7	-608.5	10.90	10.90	-0.03
4,500.0	49.08	315.22	4,367.1	-380.9	382.2	-539.6	10.90	10.90	-0.02
4,600.0	59.98	315.21	4,425.0	-323.2	324.9	-458.3	10.90	10.90	-0.01
4,700.0	70.88	315.20	4,466.5	-258.7	261.0	-367.5	10.90	10.90	-0.01
4,800.0	81.78	315.19	4,490.1	-189.9	192.6	-270.5	10.90	10.90	-0.01
4,835.7	85.67	315.19	4,494.0	-164.7	167.6	-235.0	10.90	10.90	-0.01
4,900.0	86.72	315.18	4,498.3	-119.2	122.4	-170.8	1.64	1.64	-0.02
5,000.0	88.36	315.16	4,502.6	-48.4	51.9	-70.9	1.64	1.64	-0.02
5,084.1	89.73	315.15	4,504.0	11.3	-7.4	13.2	1.64	1.64	-0.02
5,100.0	89.73	315.15	4,504.1	22.5	-18.6	29.1	0.00	0.00	0.00
5,200.0	89.73	315.15	4,504.5	93.4	-89.1	129.1	0.00	0.00	0.00
5,300.0	89.73	315.15	4,505.0	164.3	-159.6	229.1	0.00	0.00	0.00
5,400.0	89.73	315.15	4,505.5	235.2	-230.1	329.1	0.00	0.00	0.00
5,500.0	89.73	315.15	4,505.9	306.1	-300.7	429.1	0.00	0.00	0.00
5,600.0	89.73	315.15	4,506.4	377.0	-371.2	529.1	0.00	0.00	0.00
5,700.0	89.73	315.15	4,506.9	447.9	-441.7	629.1	0.00	0.00	0.00
5,800.0	89.73	315.15	4,507.3	518.8	-512.2	729.1	0.00	0.00	0.00
5,900.0	89.73	315.15	4,507.8	589.7	-582.8	829.1	0.00	0.00	0.00
6,000.0	89.73	315.15	4,508.3	660.6	-653.3	929.1	0.00	0.00	0.00

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,100.0	89.73	315.15	4,508.7	731.5	-723.8	1,029.1	0.00	0.00	0.00
6,200.0	89.73	315.15	4,509.2	802.4	-794.3	1,129.1	0.00	0.00	0.00
6,300.0	89.73	315.15	4,509.7	873.3	-864.9	1,229.1	0.00	0.00	0.00
6,400.0	89.73	315.15	4,510.1	944.2	-935.4	1,329.1	0.00	0.00	0.00
6,500.0	89.73	315.15	4,510.6	1,015.1	-1,005.9	1,429.0	0.00	0.00	0.00
6,600.0	89.73	315.15	4,511.1	1,085.9	-1,076.4	1,529.0	0.00	0.00	0.00
6,700.0	89.73	315.15	4,511.5	1,156.8	-1,147.0	1,629.0	0.00	0.00	0.00
6,800.0	89.73	315.15	4,512.0	1,227.7	-1,217.5	1,729.0	0.00	0.00	0.00
6,900.0	89.73	315.15	4,512.4	1,298.6	-1,288.0	1,829.0	0.00	0.00	0.00
7,000.0	89.73	315.15	4,512.9	1,369.5	-1,358.5	1,929.0	0.00	0.00	0.00
7,100.0	89.73	315.15	4,513.4	1,440.4	-1,429.1	2,029.0	0.00	0.00	0.00
7,200.0	89.73	315.15	4,513.8	1,511.3	-1,499.6	2,129.0	0.00	0.00	0.00
7,300.0	89.73	315.15	4,514.3	1,582.2	-1,570.1	2,229.0	0.00	0.00	0.00
7,400.0	89.73	315.15	4,514.8	1,653.1	-1,640.6	2,329.0	0.00	0.00	0.00
7,500.0	89.73	315.15	4,515.2	1,724.0	-1,711.2	2,429.0	0.00	0.00	0.00
7,600.0	89.73	315.15	4,515.7	1,794.9	-1,781.7	2,529.0	0.00	0.00	0.00
7,700.0	89.73	315.15	4,516.2	1,865.8	-1,852.2	2,629.0	0.00	0.00	0.00
7,800.0	89.73	315.15	4,516.6	1,936.7	-1,922.7	2,729.0	0.00	0.00	0.00
7,900.0	89.73	315.15	4,517.1	2,007.6	-1,993.3	2,829.0	0.00	0.00	0.00
8,000.0	89.73	315.15	4,517.6	2,078.5	-2,063.8	2,929.0	0.00	0.00	0.00
8,100.0	89.73	315.15	4,518.0	2,149.4	-2,134.3	3,029.0	0.00	0.00	0.00
8,200.0	89.73	315.15	4,518.5	2,220.3	-2,204.8	3,129.0	0.00	0.00	0.00
8,300.0	89.73	315.15	4,519.0	2,291.2	-2,275.4	3,229.0	0.00	0.00	0.00
8,400.0	89.73	315.15	4,519.4	2,362.0	-2,345.9	3,329.0	0.00	0.00	0.00
8,500.0	89.73	315.15	4,519.9	2,432.9	-2,416.4	3,429.0	0.00	0.00	0.00
8,600.0	89.73	315.15	4,520.4	2,503.8	-2,486.9	3,529.0	0.00	0.00	0.00
8,700.0	89.73	315.15	4,520.8	2,574.7	-2,557.5	3,629.0	0.00	0.00	0.00
8,800.0	89.73	315.15	4,521.3	2,645.6	-2,628.0	3,729.0	0.00	0.00	0.00
8,900.0	89.73	315.15	4,521.8	2,716.5	-2,698.5	3,829.0	0.00	0.00	0.00
9,000.0	89.73	315.15	4,522.2	2,787.4	-2,769.0	3,929.0	0.00	0.00	0.00
9,100.0	89.73	315.15	4,522.7	2,858.3	-2,839.6	4,029.0	0.00	0.00	0.00
9,200.0	89.73	315.15	4,523.2	2,929.2	-2,910.1	4,129.0	0.00	0.00	0.00
9,300.0	89.73	315.15	4,523.6	3,000.1	-2,980.6	4,229.0	0.00	0.00	0.00
9,400.0	89.73	315.15	4,524.1	3,071.0	-3,051.1	4,329.0	0.00	0.00	0.00
9,500.0	89.73	315.15	4,524.5	3,141.9	-3,121.7	4,429.0	0.00	0.00	0.00
9,600.0	89.73	315.15	4,525.0	3,212.8	-3,192.2	4,529.0	0.00	0.00	0.00
9,700.0	89.73	315.15	4,525.5	3,283.7	-3,262.7	4,629.0	0.00	0.00	0.00
9,800.0	89.73	315.15	4,525.9	3,354.6	-3,333.2	4,729.0	0.00	0.00	0.00
9,900.0	89.73	315.15	4,526.4	3,425.5	-3,403.8	4,829.0	0.00	0.00	0.00
10,000.0	89.73	315.15	4,526.9	3,496.4	-3,474.3	4,929.0	0.00	0.00	0.00
10,100.0	89.73	315.15	4,527.3	3,567.3	-3,544.8	5,029.0	0.00	0.00	0.00
10,200.0	89.73	315.15	4,527.8	3,638.1	-3,615.3	5,129.0	0.00	0.00	0.00
10,300.0	89.73	315.15	4,528.3	3,709.0	-3,685.9	5,229.0	0.00	0.00	0.00
10,400.0	89.73	315.15	4,528.7	3,779.9	-3,756.4	5,329.0	0.00	0.00	0.00
10,500.0	89.73	315.15	4,529.2	3,850.8	-3,826.9	5,429.0	0.00	0.00	0.00
10,600.0	89.73	315.15	4,529.7	3,921.7	-3,897.4	5,529.0	0.00	0.00	0.00
10,700.0	89.73	315.15	4,530.1	3,992.6	-3,968.0	5,629.0	0.00	0.00	0.00
10,800.0	89.73	315.15	4,530.6	4,063.5	-4,038.5	5,729.0	0.00	0.00	0.00
10,900.0	89.73	315.15	4,531.1	4,134.4	-4,109.0	5,829.0	0.00	0.00	0.00
11,000.0	89.73	315.15	4,531.5	4,205.3	-4,179.5	5,929.0	0.00	0.00	0.00
11,100.0	89.73	315.15	4,532.0	4,276.2	-4,250.1	6,029.0	0.00	0.00	0.00
11,200.0	89.73	315.15	4,532.5	4,347.1	-4,320.6	6,129.0	0.00	0.00	0.00
11,300.0	89.73	315.15	4,532.9	4,418.0	-4,391.1	6,229.0	0.00	0.00	0.00
11,400.0	89.73	315.15	4,533.4	4,488.9	-4,461.6	6,329.0	0.00	0.00	0.00
11,500.0	89.73	315.15	4,533.9	4,559.8	-4,532.2	6,429.0	0.00	0.00	0.00
11,531.6	89.73	315.15	4,534.0	4,582.2	-4,554.4	6,460.6	0.00	0.00	0.00

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
769H KOP - plan hits target center - Point	0.00	0.01	3,850.0	-500.0	500.0	1,899,120.26	2,731,364.29	36.219289°N	107.805288°W
769H POE - plan hits target center - Point	0.00	0.00	4,504.0	11.3	-7.4	1,899,631.54	2,730,856.91	36.220694°N	107.807007°W
769H BHL - plan misses target center by 0.3usft at 11531.3usft MD (4534.0 TVD, 4582.0 N, -4554.2 E) - Point	0.00	0.00	4,534.0	4,581.8	-4,554.4	1,904,202.05	2,726,309.87	36.233252°N	107.822421°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
2,400.5	2,362.0	9 5/8"	9-5/8	12-1/4

Formations

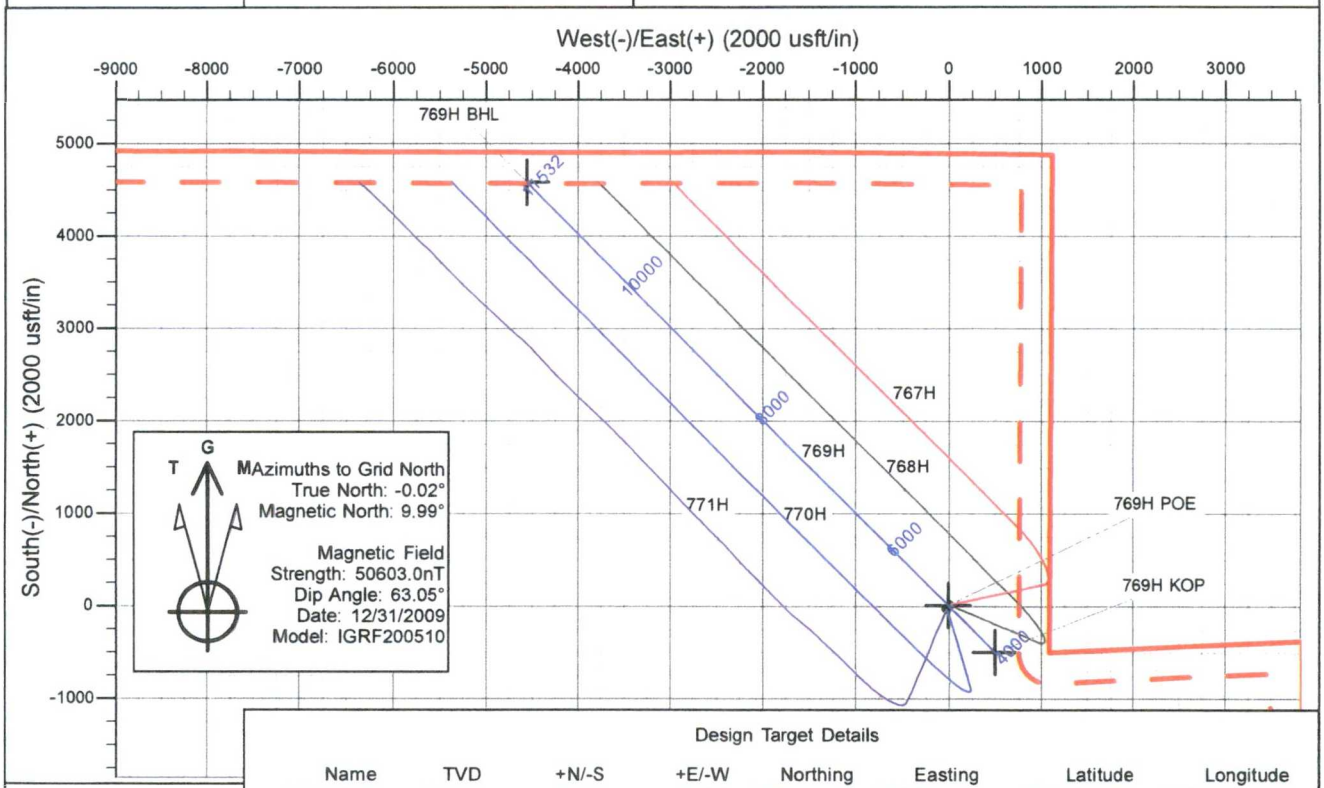
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
145.0	145.0	Ojo Alamo		0.00	
242.0	242.0	Kirtland		0.00	
502.0	502.0	Fruitland		0.00	
852.9	852.0	Pictured Cliffs		0.00	
1,060.6	1,057.0	Lewis		0.00	
1,250.2	1,242.0	Chacra		0.00	
2,282.4	2,247.0	Cliff House		0.00	
2,297.8	2,262.0	Menefee		0.00	
3,314.6	3,252.0	Point Lookout		0.00	
3,602.2	3,532.0	Mancos		0.00	
3,833.3	3,757.0	Gallup (MNCS. A)		0.00	
5,084.1	4,504.0	Gallup (Target)		0.00	

Enduring Resources LLC

Directional Drilling Plan
Plan View & Section View

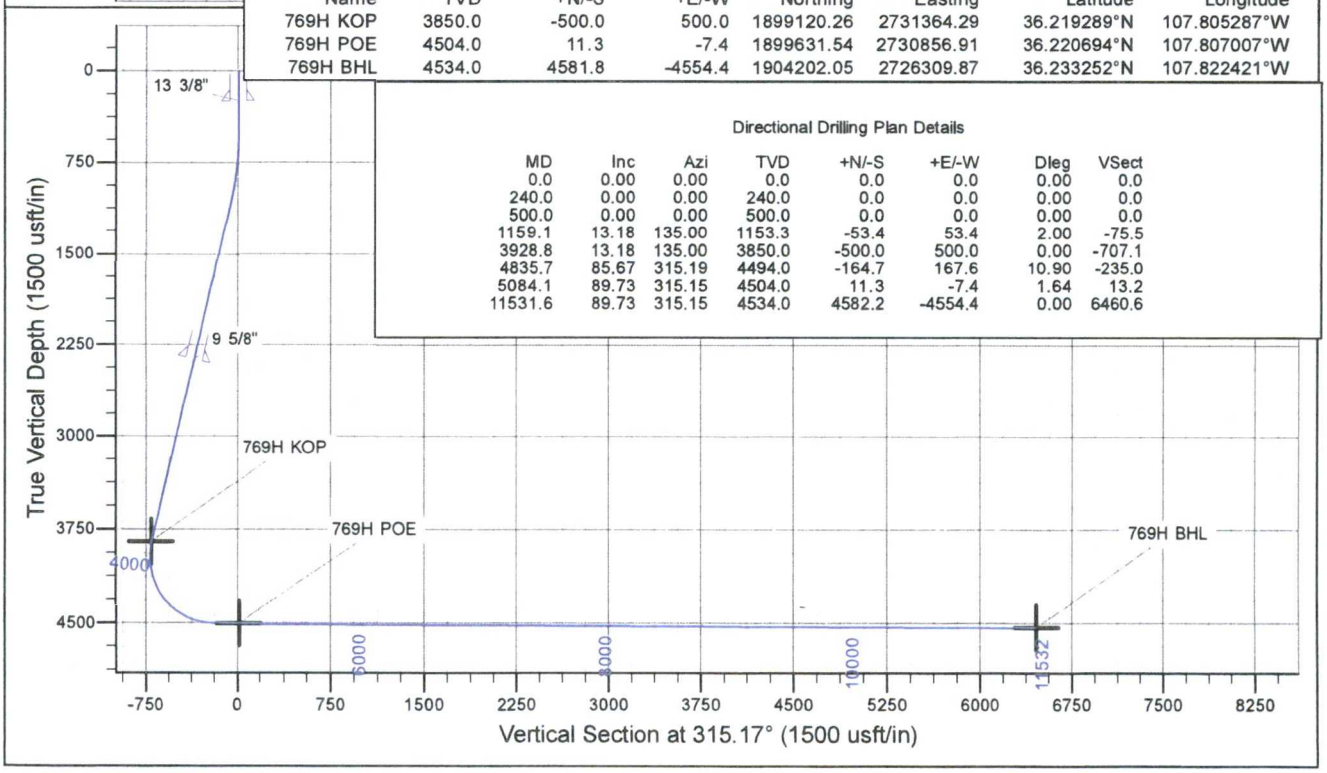
Kimbeto Wash Unit 769H

San Juan Co., New Mexico
T23N-R09W-Sec.17-Lot P
Surface Latitude: 36.220663°N
Surface Longitude: 107.806982°W
Ground Level: 6561.0
Reference Elevation: KB @ 6583.0usft (Original Well Elev)



Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
769H KOP	3850.0	-500.0	500.0	1899120.26	2731364.29	36.219289°N	107.805287°W
769H POE	4504.0	11.3	-7.4	1899631.54	2730856.91	36.220694°N	107.807007°W
769H BHL	4534.0	4581.8	-4554.4	1904202.05	2726309.87	36.233252°N	107.822421°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
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.0
1159.1	13.18	135.00	1153.3	-53.4	53.4	2.00	-75.5
3928.8	13.18	135.00	3850.0	-500.0	500.0	0.00	-707.1
4835.7	85.67	315.19	4494.0	-164.7	167.6	10.90	-235.0
5084.1	89.73	315.15	4504.0	11.3	-7.4	1.64	13.2
11531.6	89.73	315.15	4534.0	4582.2	-4554.4	0.00	6460.6

WELL NAME: Kimbeto Wash Unit 769H

OBJECTIVE: Drill, complete, and equip single lateral in the Gallup formation

API Number: 30-045-

State: New Mexico

County: San Juan

Surface Elev.: 6,561 ft ASL (GL) 6,583 ft ASL (KB)

Surface Location: 17-23N-09W Sec-Twn- Rng 440 ft FSL 1,089 ft FEL

BH Location: 18-23N-09W Sec-Twn- Rng 330 ft FNL 382 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; straight (southwest) exiting CR7800 and continuing on 7820 for 0.6 miles to fork in road, right (southwest) on 7820 for 1.1 miles to 4-way intersection, straight (southwest) for 2.7 miles to existing access road for Kimbeto Wash 771H well.

QUICK REFERENCE		
Sur TD (MD)	240	ft
Int TD (MD)	2,401	ft
KOP (MD)	3,928	ft
KOP (TVD)	3,850	ft
Target (TVD)	4,504	ft
Curve BUR	10	°/100 ft
POE (MD)	5,081	ft
TD (MD)	11,528	ft
Lat Len (ft)	6,447	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	240	13.375	54.5	J-55	BTC	0	220
Intermediate	12.250	2,401	9.625	36.0	J-55	LTC	0	2,401
Production	8.500	11,528	5.500	17.0	P-110	LTC	0	11,528

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	0.3132	40%	0	420
Inter. (Tail)	Class G	15.8	1.148	4.98	0.3132	10%	1,901	150
Prod. (Lead)	G:POZ blend	12.3	1.987	10.16	0.2691	40%	0	689
Prod. (Tail)	G:POZ blend	13.3	1.354	5.94	0.2291	10%	3,850	1,429

COMPLETION / PRODUCTION SUMMARY:

Frac: 33-stage (+/-) plug-and-perf frac with slick water and 12,000,000 lbs (+/-) proppant

Flowback: Flow up 5-1/2" casing or 2-7/8" tubing until returns are free of sand

Production: 2-7/8" tubing with packer set in 5-1/2" casing and gas-lift mandrels as needed