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

HOBBS OCD

DEC 19 2016

RECEIVED

Carlsbad Field Office
OCD Hobbs

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

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMNM124080
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA/Agreement, Name and/or No.
	8. Well Name and No. MUSIC MASTER 27 FEDERAL 3H
2. Name of Operator ENDURANCE RESOURCES LLC Contact: TINLEE TILTON E-Mail: tinlee@endurance resourcesllc.com	9. API Well No. 30-025-43387-00-X1
3a. Address MIDLAND, TX 79701 3b. Phone No. (include area code) Ph: 432.242.4680	10. Field and Pool or Exploratory Area WILDCAT;WOLFCAMP
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)* Sec 27 T25S R35E SWSE 330FNL 2250FEL	11. County or Parish, State LEA 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.

Endurance Resources LLC respectfully requests to change the bottom hole location of the wellbore to only encompass one section. The updated C-102 has been attached as well as the associated directional plan.

A pilot hole is also being requested with a TVD of 9200' (9204' MD) with the plugs stated in the attached drilling plan.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #360424 verified by the BLM Well Information System
For ENDURANCE RESOURCES LLC, sent to the Hobbs
Committed to AFMSS for processing by MUSTAFA HAQUE on 12/09/2016 (17MH0012SE)

Name *(Printed/Typed)* TINLEE TILTON	Title ENGINEER
Signature (Electronic Submission)	Date 12/08/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By MUSTAFA HAQUE	Title PETROLEUM ENGINEER	Date 12/12/2016
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 Hobbs	

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 ****

ENDURANCE
RESOURCES, LLC

Endurance Resources LLC

DRILLING & OPERATIONS PROGRAM
Music Master 27 Fed 3H
SHL: 330' FNL & 2250' FEL
Sec 27-25S-35E
BHL: 330' FSL & 2200' FEL
Sec 34-25S-35E
Lea Co, NM

1. Geological Name of Surface Formation
   Quaternary

2. Estimated Tops of Important Geological Markers

Fresh Water	400'
Rustler	882'
Top of Salt	1,473'
Lamar Limestone	5,134'
Delaware	5,204' – Oil
Brushy canyon	7,706' – Oil
Bone Spring	8,967' – Oil
Avalon	9,003' – Oil

   TVD: 8,941'; MD: 13,416'
   Pilot Hole TVD: 9,200'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas
   The estimated depths at which water, oil and gas will be encountered are as follows:
   Water: Average depth to water: 400'. Minimum depth: 0'. Max: 400'. As reported from the New Mexico Office of the State Engineer website.
   Oil & Gas: 5,255' – 9,200' (Bell Canyon through Brushy Canyon)
   No other formations are expected to give up oil, gas, or fresh water in measurable quantities.

ENDURANCE
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4. Proposed Casing Program:

Hole Size	Casing Size	Depth	#/ft	Grade	Connection	Collapse	Burst	Tension
17 ½"	13 3/8"	0 - 940'	54.5	J-55	BTC	2.31	5.59	10.03
12 ¼"	9 5/8"	0 - 4350'	40	HCL-80	J-55	1.26	1.94	2.99
12 ¼"	9 5/8"	4350' – 5145'	40	HCL-80	LT&C	1.59	2.37	3.50
8 ¾"	7"	0 - 8350'	29	HCP-110	BTC/TTRS-1	2.50	2.87	3.50
8 ¾"	5 ½"	8350' - 13416'	20	HCP-110	BTC/TTRS-1	2.92	3.02	1.79

NOTE: ALL CASING IS NEW & API APPROVED. WHILE RUNNING CASING, PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING COLLAPSE PRESSURE OF THE CASING. SURFACE CASING WILL BE WATCHED & NECESSARY ADJUSTMENTS MADE TO ENSURE PIPE IF FULL DUE TO LOST CIRCULATION ZONES THAT MAY OCCUR. CENTRALIZERS WILL BE USED ON SURFACE, INTERMEDIATE, and PRODUCTION CASING.

5. Proposed Cement Program:
   a. 13-3/8" Surface
      Lead: 635 sks ExtendaCem Class C (13.7 ppg / 1.694 cuft/sk)
      Tail: 315 sks HalCem Class C (14.8 ppg / 1.326 cuft/sk)
      **Calculated w/ 100% excess on OH volume
   b. 9-5/8" Intermediate
      Lead: 975 sxs EconoCem Class C + 0.4% HR-800 Retarder + 0.125 lbm/sk Poly-E-Flake Lost Circulation Additive (12.9 ppg / 1.887 cuft/sk)
      Tail: 390 sks HalCem Class C (14.80 ppg / 1.326 cuft/sk)
      **Calculated w/ 50% excess on OH volumes
   c. Pilot Hole Plug Back
      Low Cement – SEE COA
      Plug #1: 9204' – 8900': 142 sxs HalCem Class H (16.4 ppg / 1.07 cuft/sk)
      Plug #2: 8550' – 8150': 187 sxs HalCem Class H(16.4 ppg / 1.07 cuft/sk)
   d. 7" X 5 1/2" Production – TOC @ 4000'
      Lead: 250 sks NeoCem Class H (11.0 ppg / 3.167 cuft/sk)
      Tail: 710 sks NeoCem Class H (14.5 ppg / 2.162 cuft/sk)
      **Calculated w/ 20% excess in OH

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NOTE: THE ABOVE CEMENT VOLUMES COULD BE REVISED PENDING FLUID CALIPER & CALIPER LOG DATA. ALL VOLUMES ARE DESIGNED TO CIRCULATE TO SURFACE OR TO 4000' ON THE PRODUCTION STRING.

6. Minimum Specifications for Pressure Control:

13-5/8 (10M) working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer (please see BOP schematic). A 5M choke manifold & 120 gallon accumulator with floor and remote operating stations & auxiliary power system. Rotating head as needed. A KC will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be NU and operated at least once a day while drilling and the blind rams will be operated when out of the hole during trips. From the base of the surface casing through running of production casing, the well will be equipped with a 10M BOP system. Below the surface casing shoe, this 10M system will be equipped with a HCR valve, remote kill line, & annular to match. The remote kill line will be installed prior to testing the system & tested to stack pressure.

Before drilling out of the surface casing, BOP will be tested by an independent surface company to 250 psi low & 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high. Surface casing will be tested to 1500 psi and intermediate casing will be tested to 2000 psi. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug & 30 minutes without a test plug.

A multi-bowl wellhead is being requested to be used and the BOP will not be retested after intermediate casing is set, unless required by days since pervious test. See attached wellhead schematic.

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7. Estimated BHP:

4140 psi @ 9,200' TVD

8. Mud Program: The applicable depths & properties of this system are as follows:

Depth	Type of System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0 – 940'	Fresh	8.4	29-32	NC
940' – 5145'	Brine	10	29-32	NC
5145' – 13,416'	Cut Brine	8.8 - 9.2	28-32	<25

NOTE: NECESSARY MUD PRODUCTS FOR WEIGHT ADDITION & FLUID LOSS WILL BE ON LOCATION AT ALL TIMES. VISUAL MUD MONITORING EQUIPMENT (I.E. TRIP TANK) WILL BE IN PLACE TO DETECT VOLUME CHANGES INDICATING LOSS OR GAIN OF CIRCULATION VOLUME WITH ALARMS.

9. Auxiliary Well Control & Monitoring Equipment:
   a. A KC will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times
   c. H2S detection equipment will be in operation & breathing apparatuses will be on location after the drill out of the surface casing shoe until the production casing is cemented.

10. Testing, Logging & Coring Program:
   a. No drill stem tests are planned.
   b. GR/N well log ran from KOP to surface.
   c. Triple combo will be run from the pilot TD to the intermediate shoe.
   d. No coring is planned.

11. Potential Hazards:

No abnormal pressures or temperatures are expected. If H2S is encountered, Endurance Resources LLC will comply with Onshore Order #6. Regardless, all personnel will be trained & qualified with H2S safety. Rig safety equipment will all also be checked daily once drill out of the surface casing shoe to TD. It has been

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noted that H2S has been encountered in the salt section. If H2S is encountered, measurements & formations will be reported to the BLM.

12. Anticipated starting date & Duration of Operations:
Road & location construction will begin after the BLM has approved the APD. Anticipated spud date will begin after BLM approval & after a drilling rig is secured. Move in operations & drilling is expected to take no more than 45 days. An additional 30-50 days will be needed to complete this well & construct surface facilities and/or lay flow lines in order to place well on production.

Endurance Resources L.L.C.

DrilTech, LLC

Lea County, NM (NAD 83)
Music Master 27 Federal
Well #1
Plan #3 STK
Plan #4 STK
Rig: Noram 23

ENDURANCE RESOURCES

SURFACE LOCATION

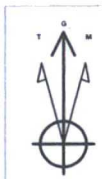
US State Plane 1983
New Mexico Eastern Zone

Elevation: GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)

Northing	Easting	Latitude	Longitude
404290.37	844530.03	32° 6' 27.676 N	103° 21' 14.868 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Music Master 3H PBHL (P4)	8941.00	-4750.24	94.70	399540.14	844624.73



Azimuths to Grid North
True North: -0.52°
Magnetic North: 6.38°

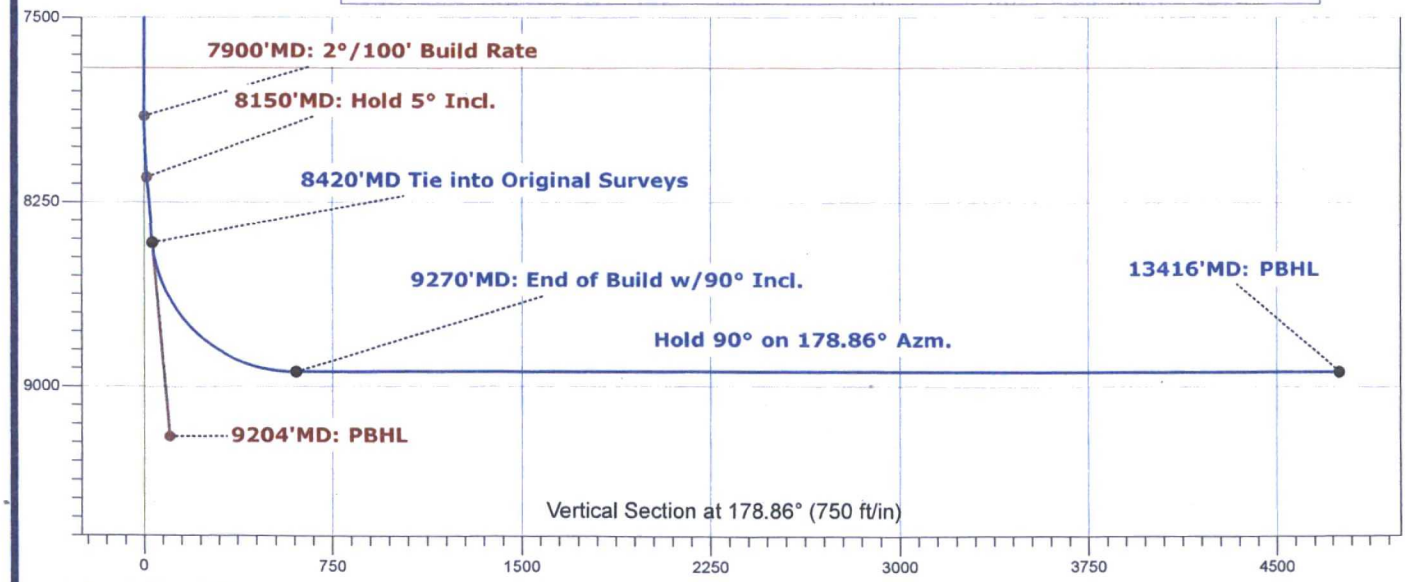
Magnetic Field
Strength: 47947.5snT
Dip Angle: 60.00°
Date: 12/7/2016
Model: IGRF2015

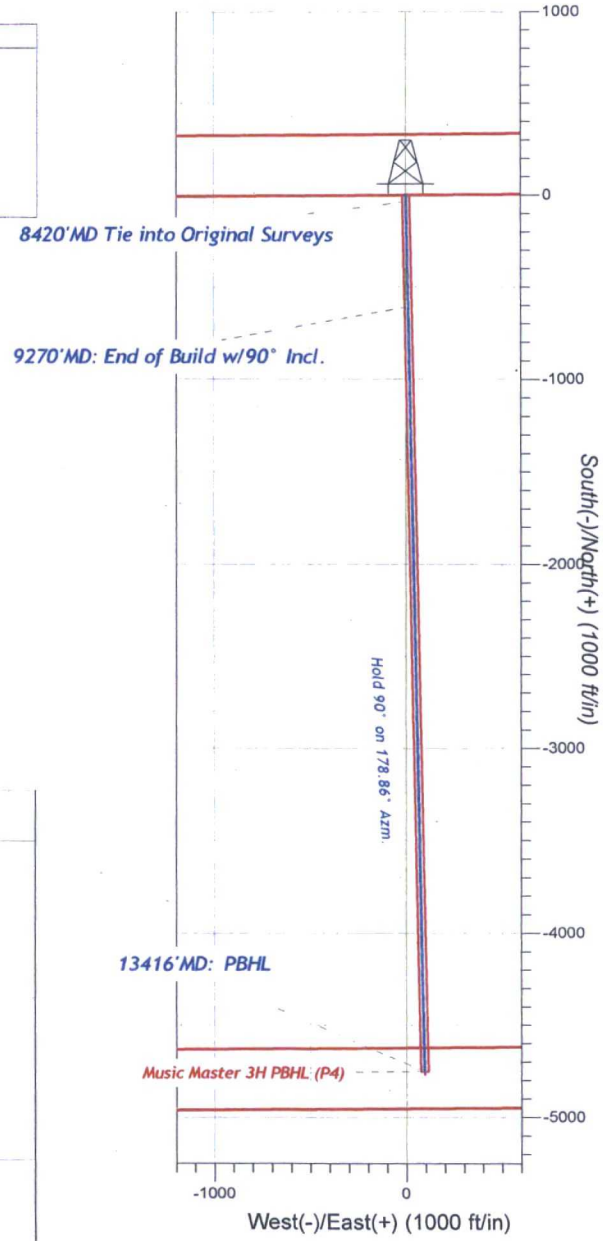
SECTION DETAILS Pilot Hole

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	0.00	0.00
8150.00	5.00	178.86	8149.68	-10.90	0.22	2.00	178.86	10.90
9204.33	5.00	178.86	9200.00	-102.77	2.05	0.00	0.00	102.79

SECTION DETAILS STK #1 (Lateral)

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
8419.50	5.00	178.86	8418.16	-34.38	0.68	0.00	0.00	34.39
9269.52	90.00	178.86	8941.18	-605.07	12.06	10.00	0.00	605.19
13415.52	90.00	178.86	8941.00	-4750.24	94.70	0.00	0.00	4751.18





Endurance Resources L.L.C.

Lea County, NM (NAD 83)
Music Master 27 Federal
Well #1

Plan #3 STK

Plan: Plan #4 STK

Standard Planning Report

08 December, 2016

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

Project	Lea County, NM (NAD 83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Music Master 27 Federal				
Site Position:		**Northing:**	404,290.37 usft	**Latitude:**	32° 6' 27.676 N
From:	Map	**Easting:**	844,530.03 usft	**Longitude:**	103° 21' 14.868 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.52 °

Well	Well #1					
Well Position	**+N/-S**	0.00 ft	**Northing:**	404,290.37 usft	**Latitude:**	32° 6' 27.676 N
	+E/-W	0.00 ft	**Easting:**	844,530.03 usft	**Longitude:**	103° 21' 14.868 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	3,193.40 ft

Wellbore	Plan #3 STK			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	12/7/2016	6.90	60.00	47,947.54314482

Design	Plan #4 STK				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	8,419.50

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	178.86

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
8,419.50	5.00	178.86	8,418.16	-34.38	0.68	0.00	0.00	0.00	0.00	
9,269.52	90.00	178.86	8,941.18	-605.07	12.06	10.00	10.00	0.00	0.00	
13,415.52	90.00	178.86	8,941.00	-4,750.24	94.70	0.00	0.00	0.00	0.00	Music Master 3H Pl

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

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)
8,419.50	5.00	178.86	8,418.16	-34.38	0.68	34.39	0.00	0.00	0.00
8420'MD Tie into Original Surveys									
8,500.00	13.05	178.86	8,497.60	-47.00	0.94	47.01	10.00	10.00	0.00
8,600.00	23.05	178.86	8,592.55	-77.94	1.55	77.95	10.00	10.00	0.00
8,700.00	33.05	178.86	8,680.70	-124.89	2.49	124.92	10.00	10.00	0.00
8,800.00	43.05	178.86	8,759.34	-186.44	3.71	186.47	10.00	10.00	0.00
8,900.00	53.05	178.86	8,826.11	-260.70	5.19	260.75	10.00	10.00	0.00
9,000.00	63.05	178.86	8,878.96	-345.43	6.88	345.50	10.00	10.00	0.00
9,100.00	73.05	178.86	8,916.29	-438.04	8.73	438.13	10.00	10.00	0.00
9,200.00	83.05	178.86	8,936.97	-535.73	10.68	535.84	10.00	10.00	0.00
9,269.52	90.00	178.86	8,941.18	-605.07	12.06	605.19	10.00	10.00	0.00
Hold 90° on 178.86° Azm. - 9270'MD: End of Build w/90° Incl.									
9,300.00	90.00	178.86	8,941.18	-635.54	12.67	635.67	0.00	0.00	0.00
9,400.00	90.00	178.86	8,941.17	-735.52	14.66	735.67	0.00	0.00	0.00
9,500.00	90.00	178.86	8,941.17	-835.50	16.65	835.67	0.00	0.00	0.00
9,600.00	90.00	178.86	8,941.16	-935.48	18.65	935.67	0.00	0.00	0.00
9,700.00	90.00	178.86	8,941.16	-1,035.46	20.64	1,035.67	0.00	0.00	0.00
9,800.00	90.00	178.86	8,941.16	-1,135.44	22.63	1,135.67	0.00	0.00	0.00
9,900.00	90.00	178.86	8,941.15	-1,235.42	24.63	1,235.67	0.00	0.00	0.00
10,000.00	90.00	178.86	8,941.15	-1,335.40	26.62	1,335.67	0.00	0.00	0.00
10,100.00	90.00	178.86	8,941.14	-1,435.38	28.61	1,435.67	0.00	0.00	0.00
10,200.00	90.00	178.86	8,941.14	-1,535.36	30.61	1,535.67	0.00	0.00	0.00
10,300.00	90.00	178.86	8,941.13	-1,635.34	32.60	1,635.67	0.00	0.00	0.00
10,400.00	90.00	178.86	8,941.13	-1,735.32	34.59	1,735.67	0.00	0.00	0.00
10,500.00	90.00	178.86	8,941.13	-1,835.30	36.59	1,835.67	0.00	0.00	0.00
10,600.00	90.00	178.86	8,941.12	-1,935.28	38.58	1,935.67	0.00	0.00	0.00
10,700.00	90.00	178.86	8,941.12	-2,035.26	40.57	2,035.67	0.00	0.00	0.00
10,800.00	90.00	178.86	8,941.11	-2,135.24	42.57	2,135.67	0.00	0.00	0.00
10,900.00	90.00	178.86	8,941.11	-2,235.22	44.56	2,235.67	0.00	0.00	0.00
11,000.00	90.00	178.86	8,941.10	-2,335.20	46.55	2,335.67	0.00	0.00	0.00
11,100.00	90.00	178.86	8,941.10	-2,435.18	48.55	2,435.67	0.00	0.00	0.00
11,200.00	90.00	178.86	8,941.10	-2,535.16	50.54	2,535.67	0.00	0.00	0.00
11,300.00	90.00	178.86	8,941.09	-2,635.14	52.53	2,635.67	0.00	0.00	0.00
11,400.00	90.00	178.86	8,941.09	-2,735.12	54.53	2,735.67	0.00	0.00	0.00
11,500.00	90.00	178.86	8,941.08	-2,835.10	56.52	2,835.67	0.00	0.00	0.00
11,600.00	90.00	178.86	8,941.08	-2,935.08	58.51	2,935.67	0.00	0.00	0.00
11,700.00	90.00	178.86	8,941.07	-3,035.06	60.51	3,035.67	0.00	0.00	0.00
11,800.00	90.00	178.86	8,941.07	-3,135.04	62.50	3,135.67	0.00	0.00	0.00
11,900.00	90.00	178.86	8,941.07	-3,235.02	64.49	3,235.67	0.00	0.00	0.00
12,000.00	90.00	178.86	8,941.06	-3,335.00	66.49	3,335.67	0.00	0.00	0.00
12,100.00	90.00	178.86	8,941.06	-3,434.98	68.48	3,435.67	0.00	0.00	0.00
12,200.00	90.00	178.86	8,941.05	-3,534.97	70.47	3,535.67	0.00	0.00	0.00
12,300.00	90.00	178.86	8,941.05	-3,634.95	72.47	3,635.67	0.00	0.00	0.00
12,400.00	90.00	178.86	8,941.04	-3,734.93	74.46	3,735.67	0.00	0.00	0.00
12,500.00	90.00	178.86	8,941.04	-3,834.91	76.45	3,835.67	0.00	0.00	0.00
12,600.00	90.00	178.86	8,941.04	-3,934.89	78.44	3,935.67	0.00	0.00	0.00
12,700.00	90.00	178.86	8,941.03	-4,034.87	80.44	4,035.67	0.00	0.00	0.00
12,800.00	90.00	178.86	8,941.03	-4,134.85	82.43	4,135.67	0.00	0.00	0.00
12,900.00	90.00	178.86	8,941.02	-4,234.83	84.42	4,235.67	0.00	0.00	0.00
13,000.00	90.00	178.86	8,941.02	-4,334.81	86.42	4,335.67	0.00	0.00	0.00
13,100.00	90.00	178.86	8,941.01	-4,434.79	88.41	4,435.67	0.00	0.00	0.00
13,200.00	90.00	178.86	8,941.01	-4,534.77	90.40	4,535.67	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

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)
13,300.00	90.00	178.86	8,941.01	-4,634.75	92.40	4,635.67	0.00	0.00	0.00
13,400.00	90.00	178.86	8,941.00	-4,734.73	94.39	4,735.67	0.00	0.00	0.00
13,415.50	90.00	178.86	8,941.00	-4,750.22	94.70	4,751.17	0.00	0.00	0.00
13416'MD: PBHL									
13,415.52	90.00	178.86	8,941.00	-4,750.24	94.70	4,751.18	0.00	0.00	0.00
Music Master 3H PBHL (P4) - Music Master 3H PBHL (P3)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Music Master 3H PBH	0.00	0.00	8,941.00	-4,750.24	94.70	399,540.14	844,624.73	32° 5' 40.665 N	103° 21' 14.269 W
- plan hits target center									
- Rectangle (sides W40.00 H4,751.18 D0.00)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
950.00	950.00	13 3/8"	13.375	17.500
950.00	950.00	13 3/8"	13.375	17.500
5,145.00	5,145.00	9 5/8"	9.625	12.250
5,145.00	5,145.00	9 5/8"	9.625	12.250
13,416.13		5 1/2"	5.500	6.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
600.00	600.00	Fresh Water		0.00	
882.00	882.00	Rustler		0.00	
1,473.00	1,473.00	Top of Salt		0.00	
5,186.00	5,186.00	Lamar		0.00	
5,204.00	5,204.00	Bell Canyon		0.00	
6,262.00	6,262.00	Cherry Canyon		0.00	
7,706.00	7,706.00	Brushy Canyon		-1.04	

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,419.50	8,418.16	-34.38	0.68	8420'MD Tie into Original Surveys
9,269.52	8,941.18	-605.07	12.06	Hold 90° on 178.86° Azm.
9,269.52	8,941.18	-605.07	12.06	9270'MD: End of Build w/90° Incl.
13,415.50	8,941.00	-4,750.22	94.70	13416'MD: PBHL

Endurance Resources L.L.C.

Lea County, NM (NAD 83)
Music Master 27 Federal
Well #1

Plan #3 STK

Plan: Plan #4 STK

Standard Planning Report - Geographic

08 December, 2016

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

Project Lea County, NM (NAD 83)

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

Site Music Master 27 Federal

Site Position:		**Northing:**	404,290.37 usft	**Latitude:**	32° 6' 27.676 N
From:	Map	**Easting:**	844,530.03 usft	**Longitude:**	103° 21' 14.868 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.52 °

Well Well #1

Well Position	**+N/-S**	0.00 ft	**Northing:**	404,290.37 usft	**Latitude:**	32° 6' 27.676 N
	+E/-W	0.00 ft	**Easting:**	844,530.03 usft	**Longitude:**	103° 21' 14.868 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	3,193.40 ft

Wellbore Plan #3 STK

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/7/2016	6.90	60.00	47,947.54314482

Design Plan #4 STK

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	8,419.50

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	178.86

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
8,419.50	5.00	178.86	8,418.16	-34.38	0.68	0.00	0.00	0.00	0.00	
9,269.52	90.00	178.86	8,941.18	-605.07	12.06	10.00	10.00	0.00	0.00	
13,415.52	90.00	178.86	8,941.00	-4,750.24	94.70	0.00	0.00	0.00	0.00	Music Master 3H Pl

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,419.50	5.00	178.86	8,418.16	-34.38	0.68	404,255.99	844,530.71	32° 6' 27.336 N	103° 21' 14.863 W
8420'MD Tie into Original Surveys									
8,500.00	13.05	178.86	8,497.60	-47.00	0.94	404,243.37	844,530.96	32° 6' 27.211 N	103° 21' 14.862 W
8,600.00	23.05	178.86	8,592.55	-77.94	1.55	404,212.43	844,531.58	32° 6' 26.905 N	103° 21' 14.858 W
8,700.00	33.05	178.86	8,680.70	-124.89	2.49	404,165.48	844,532.52	32° 6' 26.440 N	103° 21' 14.852 W
8,800.00	43.05	178.86	8,759.34	-186.44	3.71	404,103.93	844,533.74	32° 6' 25.831 N	103° 21' 14.844 W
8,900.00	53.05	178.86	8,826.11	-260.70	5.19	404,029.67	844,535.22	32° 6' 25.096 N	103° 21' 14.835 W
9,000.00	63.05	178.86	8,878.96	-345.43	6.88	403,944.94	844,536.91	32° 6' 24.257 N	103° 21' 14.824 W
9,100.00	73.05	178.86	8,916.29	-438.04	8.73	403,852.33	844,538.76	32° 6' 23.341 N	103° 21' 14.813 W
9,200.00	83.05	178.86	8,936.97	-535.73	10.68	403,754.64	844,540.71	32° 6' 22.374 N	103° 21' 14.800 W
9,269.52	90.00	178.86	8,941.18	-605.07	12.06	403,685.30	844,542.09	32° 6' 21.688 N	103° 21' 14.791 W
Hold 90° on 178.86° Azm. - 9270'MD: End of Build w/90° Incl.									
9,300.00	90.00	178.86	8,941.18	-635.54	12.67	403,654.83	844,542.70	32° 6' 21.386 N	103° 21' 14.788 W
9,400.00	90.00	178.86	8,941.17	-735.52	14.66	403,554.85	844,544.69	32° 6' 20.397 N	103° 21' 14.775 W
9,500.00	90.00	178.86	8,941.17	-835.50	16.65	403,454.87	844,546.68	32° 6' 19.407 N	103° 21' 14.762 W
9,600.00	90.00	178.86	8,941.16	-935.48	18.65	403,354.89	844,548.68	32° 6' 18.418 N	103° 21' 14.750 W
9,700.00	90.00	178.86	8,941.16	-1,035.46	20.64	403,254.91	844,550.67	32° 6' 17.428 N	103° 21' 14.737 W
9,800.00	90.00	178.86	8,941.16	-1,135.44	22.63	403,154.93	844,552.66	32° 6' 16.439 N	103° 21' 14.725 W
9,900.00	90.00	178.86	8,941.15	-1,235.42	24.63	403,054.95	844,554.66	32° 6' 15.449 N	103° 21' 14.712 W
10,000.00	90.00	178.86	8,941.15	-1,335.40	26.62	402,954.97	844,556.65	32° 6' 14.460 N	103° 21' 14.699 W
10,100.00	90.00	178.86	8,941.14	-1,435.38	28.61	402,854.99	844,558.64	32° 6' 13.471 N	103° 21' 14.687 W
10,200.00	90.00	178.86	8,941.14	-1,535.36	30.61	402,755.01	844,560.64	32° 6' 12.481 N	103° 21' 14.674 W
10,300.00	90.00	178.86	8,941.13	-1,635.34	32.60	402,655.03	844,562.63	32° 6' 11.492 N	103° 21' 14.661 W
10,400.00	90.00	178.86	8,941.13	-1,735.32	34.59	402,555.05	844,564.62	32° 6' 10.502 N	103° 21' 14.649 W
10,500.00	90.00	178.86	8,941.13	-1,835.30	36.59	402,455.07	844,566.62	32° 6' 9.513 N	103° 21' 14.636 W
10,600.00	90.00	178.86	8,941.12	-1,935.28	38.58	402,355.09	844,568.61	32° 6' 8.523 N	103° 21' 14.624 W
10,700.00	90.00	178.86	8,941.12	-2,035.26	40.57	402,255.11	844,570.60	32° 6' 7.534 N	103° 21' 14.611 W
10,800.00	90.00	178.86	8,941.11	-2,135.24	42.57	402,155.13	844,572.60	32° 6' 6.544 N	103° 21' 14.598 W
10,900.00	90.00	178.86	8,941.11	-2,235.22	44.56	402,055.15	844,574.59	32° 6' 5.555 N	103° 21' 14.586 W
11,000.00	90.00	178.86	8,941.10	-2,335.20	46.55	401,955.17	844,576.58	32° 6' 4.565 N	103° 21' 14.573 W
11,100.00	90.00	178.86	8,941.10	-2,435.18	48.55	401,855.19	844,578.57	32° 6' 3.576 N	103° 21' 14.561 W
11,200.00	90.00	178.86	8,941.10	-2,535.16	50.54	401,755.21	844,580.57	32° 6' 2.586 N	103° 21' 14.548 W
11,300.00	90.00	178.86	8,941.09	-2,635.14	52.53	401,655.23	844,582.56	32° 6' 1.597 N	103° 21' 14.535 W
11,400.00	90.00	178.86	8,941.09	-2,735.12	54.53	401,555.25	844,584.55	32° 6' 0.608 N	103° 21' 14.523 W
11,500.00	90.00	178.86	8,941.08	-2,835.10	56.52	401,455.27	844,586.55	32° 5' 59.618 N	103° 21' 14.510 W
11,600.00	90.00	178.86	8,941.08	-2,935.08	58.51	401,355.29	844,588.54	32° 5' 58.629 N	103° 21' 14.498 W
11,700.00	90.00	178.86	8,941.07	-3,035.06	60.51	401,255.31	844,590.53	32° 5' 57.639 N	103° 21' 14.485 W
11,800.00	90.00	178.86	8,941.07	-3,135.04	62.50	401,155.33	844,592.53	32° 5' 56.650 N	103° 21' 14.472 W
11,900.00	90.00	178.86	8,941.07	-3,235.02	64.49	401,055.35	844,594.52	32° 5' 55.660 N	103° 21' 14.460 W
12,000.00	90.00	178.86	8,941.06	-3,335.00	66.49	400,955.37	844,596.51	32° 5' 54.671 N	103° 21' 14.447 W
12,100.00	90.00	178.86	8,941.06	-3,434.98	68.48	400,855.39	844,598.51	32° 5' 53.681 N	103° 21' 14.434 W
12,200.00	90.00	178.86	8,941.05	-3,534.97	70.47	400,755.41	844,600.50	32° 5' 52.692 N	103° 21' 14.422 W
12,300.00	90.00	178.86	8,941.05	-3,634.95	72.47	400,655.43	844,602.49	32° 5' 51.702 N	103° 21' 14.409 W
12,400.00	90.00	178.86	8,941.04	-3,734.93	74.46	400,555.45	844,604.49	32° 5' 50.713 N	103° 21' 14.397 W
12,500.00	90.00	178.86	8,941.04	-3,834.91	76.45	400,455.47	844,606.48	32° 5' 49.723 N	103° 21' 14.384 W
12,600.00	90.00	178.86	8,941.04	-3,934.89	78.44	400,355.49	844,608.47	32° 5' 48.734 N	103° 21' 14.371 W
12,700.00	90.00	178.86	8,941.03	-4,034.87	80.44	400,255.51	844,610.47	32° 5' 47.745 N	103° 21' 14.359 W
12,800.00	90.00	178.86	8,941.03	-4,134.85	82.43	400,155.53	844,612.46	32° 5' 46.755 N	103° 21' 14.346 W
12,900.00	90.00	178.86	8,941.02	-4,234.83	84.42	400,055.55	844,614.45	32° 5' 45.766 N	103° 21' 14.334 W
13,000.00	90.00	178.86	8,941.02	-4,334.81	86.42	399,955.57	844,616.45	32° 5' 44.776 N	103° 21' 14.321 W
13,100.00	90.00	178.86	8,941.01	-4,434.79	88.41	399,855.59	844,618.44	32° 5' 43.787 N	103° 21' 14.308 W
13,200.00	90.00	178.86	8,941.01	-4,534.77	90.40	399,755.61	844,620.43	32° 5' 42.797 N	103° 21' 14.296 W

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Well #1
Company:	Endurance Resources L.L.C.	**TVD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL 3193.4 + 27.7 RKB @ 3221.10ft (Noram 23)
Site:	Music Master 27 Federal	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan #3 STK		
Design:	Plan #4 STK		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,300.00	90.00	178.86	8,941.01	-4,634.75	92.40	399,655.63	844,622.43	32° 5' 41.808 N	103° 21' 14.283 W
13,400.00	90.00	178.86	8,941.00	-4,734.73	94.39	399,555.65	844,624.42	32° 5' 40.818 N	103° 21' 14.270 W
13,415.50	90.00	178.86	8,941.00	-4,750.22	94.70	399,540.15	844,624.73	32° 5' 40.665 N	103° 21' 14.269 W
13416'MD: PBHL									
13,415.52	90.00	178.86	8,941.00	-4,750.24	94.70	399,540.14	844,624.73	32° 5' 40.665 N	103° 21' 14.269 W
Music Master 3H PBHL (P4) - Music Master 3H PBHL (P3)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Music Master 3H PBH - plan hits target center - Rectangle (sides W40.00 H4,751.18 D0.00)	0.00	0.00	8,941.00	-4,750.24	94.70	399,540.14	844,624.73	32° 5' 40.665 N	103° 21' 14.269 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
950.00	950.00	13 3/8"	13.375	17.500
950.00	950.00	13 3/8"	13.375	17.500
5,145.00	5,145.00	9 5/8"	9.625	12.250
5,145.00	5,145.00	9 5/8"	9.625	12.250
13,416.13		5 1/2"	5.500	6.000

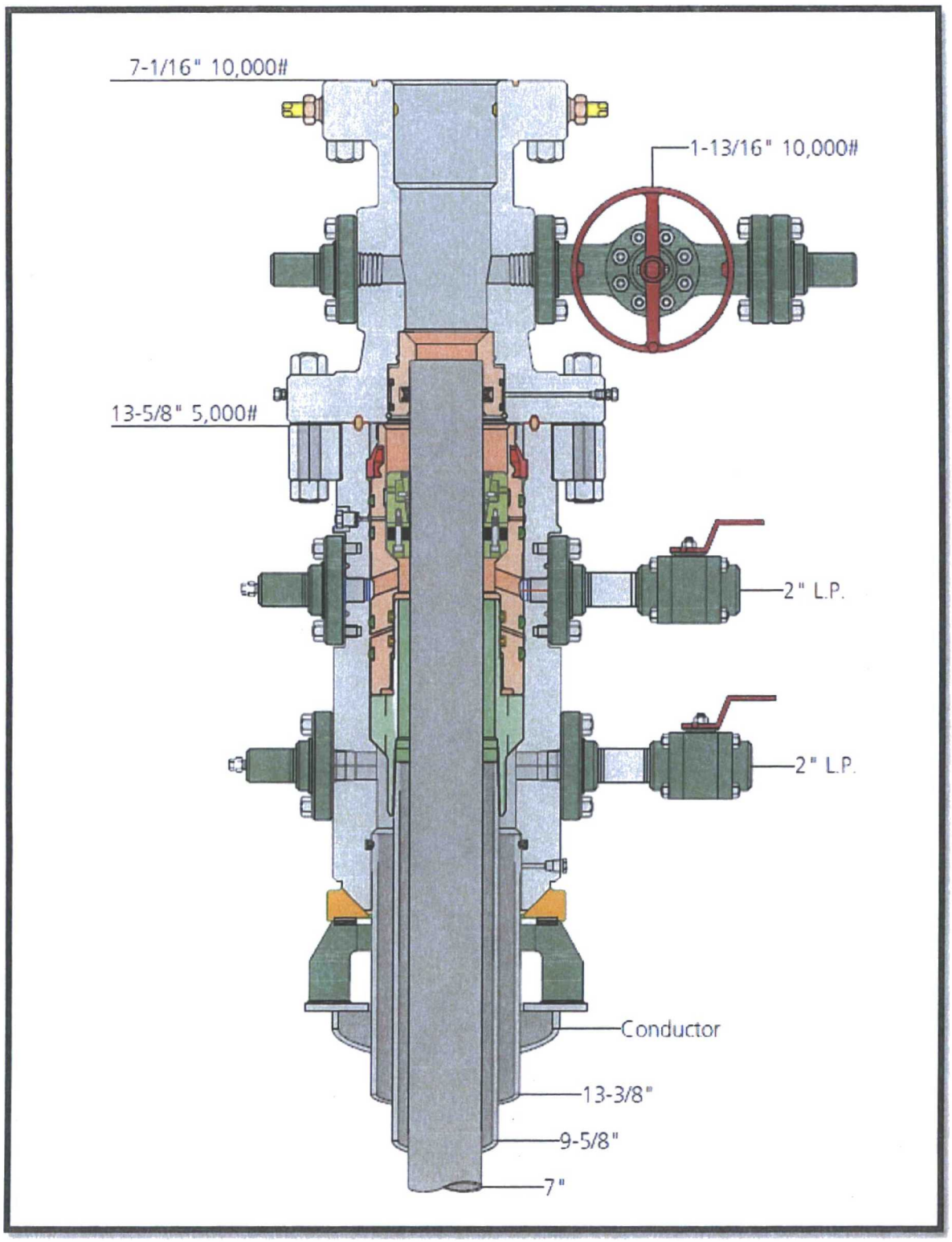
Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,706.00	7,706.00	Brushy Canyon		-1.04	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,419.50	8,418.16	-34.38	0.68	8420'MD Tie into Original Surveys
9,269.52	8,941.18	-605.07	12.06	Hold 90° on 178.86° Azm.
9,269.52	8,941.18	-605.07	12.06	9270'MD: End of Build w/90° Incl.
13,415.50	8,941.00	-4,750.22	94.70	13416'MD: PBHL

ENDURANCE
RESOURCES, LLC



TTRS1 Casing Connection

SIZE: 7 in. [177.8]
WEIGHT: 29 lbm/ft [43.16]
GRADE: HCP-110
CONNECTION: TTRS1
High Collapse

Material	Imperial	Metric
Yield Stress (min) (psi [kPa])	110,000	758,423
Yield Stress (max) (psi [kPa])	140,000	965,266
Tensile Stress (min) (psi [kPa])	125,000	861,845
Hardness (max) (HRC [HBW])	N/A	N/A
Pipe Body Data		
Outside Diameter, Nominal (in [mm])	7.000	177.80
Weight, Nominal (lbm/ft [kg/m])	29.00	43.16
Wall Thickness, Nominal (in [mm])	0.408	10.36
Inside Diameter, Nominal (in [mm])	6.184	157.07
API Drift Diameter (in [mm])	6.059	153.90
Alternate Drift Diameter (in [mm])	6.125	155.58
Cross Section, Nominal (sq.in. [mm2])	8.449	5450.96
Pipe Performance		
Tensile Yield (lbf [N])	929,390	4,134,131
Internal Yield Pressure (psi [kPa])	11,220	77,359
High Collapse Pressure (psi [kPa])	11,076	76,366
Hydrostatic Test Pressure (psi [kPa])	10,000	68,948
Connection Data		
Connection OD (in [mm])	7.875	200.03
Special Clearance OD (in [mm])	7.640	N/A
Connection ID (in [mm])	6.184	157.07
Coupling Length (min) (in [mm])	10.000	254.00
Make-up Loss (in [mm])	4.500	114.30
Threads per Inch (pitch [mm])	5.000	5.08
Torques (Make-Up, Operational, Yield)		
Minimum (lbf-ft[N.m])	9,900	13,420
Optimum (lbf-ft [N.m])	10,300	13,960
Maximum (lbf-ft [N.m])	11,700	15,860
Max Operational, 1.176 S.F. (lbf-ft [N.m])	29,762	40,350
Yield (lbf-ft [N.m])	35,000	47,450

All connection performance and torque values are calculated (to be verified by testing).

Connection Performance	
Tensile Efficiency (% of pipe Body)	100%
Internal Yield Pressure (% of pipe Body)	100%
External yield pressure (% of pipe Body)	100%
Compression Efficiency (% of pipe Body)	100%
Bending rate, with sealability (°/100 ft)	20°

REDUCED STRESS

Inspection Criteria: All the material is inspected to 5% Test notch inspection for OD/ID, Long/Trans and wall check per API/ASTM requirements though EMI/SEA.

Technical Support:
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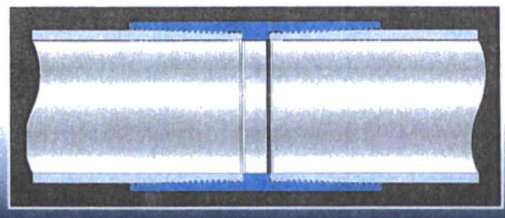
licenseesupport@tejastubular.com

tejas® tubular

TTRS1 Connections *



5 1/2-in 20.0 ppf HC P-110 Tejas Tubular Reduced Stress

Pipe Body	Data
	Imperial [Metric]
Nominal OD (in [mm])	5.500 [139.7]
Nominal weight (lbm/ft)	20.0
Minimum yield of material (psi [kPa])	110,000 [758,423]
Minimum ID (in [mm])	4.778 [121.4]
Drift (in [mm])	4.653 [118.2]
Wall thickness (in [mm])	0.361 [9.17]
Plain end weight (lbm/ft)	19.83
Cross sectional area (in^2 [mm^2])	5.828 [3,760.0]
Performance	
API tensile yield (lbf [N])	641,000 [2,851,310]
API internal yield pressure (psi [kPa])	12,640 [87,150]
API external yield pressure (psi [kPa])	13,340 [91,976]
Connection Dimensions	
Coupling OD (in [mm])	6.050 [153.7]
Coupling ID (in [mm])	4.778 [121.4]
Coupling length (in [mm])	9.375 [238.1]
Make-up loss (in [mm])	4.125 [104.8]
Threads per inch	5
Connection Performance	
Tensile yield strength** (lbf [N])	641,000 [2,851,310]
Internal yield pressure** (psi [kPa])	12,640 [87,150]
External yield pressure** (psi [kPa])	13,340 [91,976]
Compression strength** (lbf [N])	641,000 [2,851,310]
Working bending rate, tested (°/100 ft)	20
Bending rate, calculated (°/100 ft)	92
***Values based on 100% efficiency*	
Torque Values	
Minimum (lbf.ft [N.m])	8,200 [11,118]
Optimum, recommended make-up (lbf.ft [N.m])	8,600 [11,660]
Maximum (lbf.ft [N.m])	10,000 [13,558]
Yield (lbf.ft [N.m])	23,000 [31,184]
Max. operational torque (lbf.ft [N.m])	20,000 [27,116]

Inspection Criteria

All the material is inspected to 5% Test notch inspection for OD/ID, Long/Trans and wall check as per API/ASTM requirements through EMI/SEA.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Endurance Resources LLC
LEASE NO.:	NM134080
WELL NAME & NO.:	3H-Music Master 27 Federal
SURFACE HOLE FOOTAGE:	330'/N & 2250'/E
BOTTOM HOLE FOOTAGE	200'/S & 2200'/E
LOCATION:	Section 27, T. 25 S., R. 35 E., NMPM
COUNTY:	Lea County, New Mexico

All previous COAs still apply except for the following:

A. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Risks:
Possibility of water flows in the Castile and Salado.
Possibility of lost circulation in the Red Beds, Rustler, and Delaware.

1. The **13 3/8** inch surface casing shall be set at approximately **940** feet **(in a competent bedrock; if salt is encountered, set casing at least 25 feet above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13 3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **9 5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see A.1.a, c-d above.

Formation below the 9 5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-393-3612) prior to tag of bottom plug, which must be a minimum of 200' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug. Note plug

tops on subsequent drilling report. Excess cement calculates to 20% for the top and bottom plug – Additional cement might be required

3. The minimum required fill of cement behind the **7 X 5 1/2** inch production casing is:

   ☒ Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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