

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



Notice of C-104 Denial and Request for Information

OCD denies your C-104 – *Request for Allowable and Authorization to Transport* because it is incomplete or conflicts with other information provided to OCD.

The sale or transport of product without a C-104 approved by OCD violates the Oil and Gas Act and the implementing rules, including 19.15.7.15 and 19.15.16.19 NMAC.

To avoid an enforcement action, you must submit the indicated information no later than 30 days after receipt of this notice.

Test Allowable, New Well and Recompleted Well

- ☐ C-103 (or BLM equivalent) for all casing strings

☐ Spud Notice

☐ Surface Casing

☐ Intermediate Casing (if applicable)

☐ Additional Intermediate Casing (if applicable)

☒ Production Casing or Liner check depths ↑

- ☐ Applicable Order (NSL, NSP, Other _____)

- ☐ Deviation Survey for Vertical Wells

☒ Directional Survey Certified

☒ C-102 (As-Drilled Plat for Horizontal Well)

New Well and Recompleted Well Only

☒ C-103 Completion Sundry (or BLM equivalent) approved BUM copy only

☒ C-105 Completion Report (or BLM equivalent) Csg depth conflict w/sundry

☐ All Logs Run on Well

If you have any questions please contact the local OCD District Office

[illegible]

RECEIVED

Intent ☐ As Drilled ☒

SEP 12 2019

API #

DISTRICT//ARTESIAO.C.D.

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION CO., L.P.	TOMB RAIDER 12 FED	213H

Kick Off Point (KOP)

UL O	Section 12	Township 23S	Range 31E	Lot	Feet 43	From N/S SOUTH	Feet 1710	From E/W EAST	County EDDY
Latitude 32.3118146					Longitude 103.7284925			NAD 83	

First Take Point (FTP)

UL O	Section 12	Township 23S	Range 31E	Lot	Feet 373	From N/S SOUTH	Feet 1669	From E/W EAST	County EDDY
Latitude 32.3127232					Longitude 103.7283593			NAD 83	

Last Take Point (LTP)

UL B	Section 12	Township 23S	Range 31E	Lot	Feet 168	From N/S NORTH	Feet 1669	From E/W EAST	County EDDY
Latitude 32.3257394					Longitude 103.7283565			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☒Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018



RECEIVED

March 1, 2019

SEP 12 2019

DISTRICT//ARTESIAO.C.D.

Devon Energy Corporation
20 N. Broadway
Oklahoma City, Oklahoma 73102

Attn: Terrell Grayson

Re: Final Directional Report
Tomb Raider 12 Fed 213H
Eddy County, NM

Mr. Grayson,

Included in this report are a directional comparison plot and final survey report, daily directional drilling reports, and final BHA reports.

The report covers the following:

LEAM Job #: MD-181189 for the (OH) from January 13, 2019 to January 22, 2019;
Drilling start depth of 0' MD to 11,350' total MD.

LEAM Job #: MD-181189 for the (OH) from February 24, 2019 to February 28, 2019;
Drilling start depth of 10,792' MD to 15,271' total MD.

We appreciate you giving LEAM Drilling Services the opportunity of doing business with you and look forward to working with you in the future.

Regards,

Nora Tucker
Well Planner - Manager

LEAM Drilling Services

RECEIVED

SEP 12 2019

DISTRICT 11-ARTESIA O.C.D.

Devon Energy

Eddy County, NM (NAD-83)

Tomb Raider 12 Fed

Tomb Raider 12 Fed 213H

OH

Design: OH

Standard Survey Report

10 March, 2019

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Site Tomb Raider 12 Fed
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Site:	Tomb Raider 12 Fed	MD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Well:	Tomb Raider 12 Fed 213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

Project:		Eddy 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						Tomb Raider 12 Fed											
Site Position:			Northing:			477,706.15 usft			Latitude:			32° 18' 42.6014 N					
From:			Map			Easting:			728,454.84 usft			Longitude:			103° 43' 39.5463 W		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.32 °		

Well	Tomb Raider 12 Fed 213H					
Well Position	+N-S	0.00 usft	Northing:	477,706.15 usft	Latitude:	32° 18' 42.6014 N
	+E-W	0.00 usft	Easting:	728,454.84 usft	Longitude:	103° 43' 39.5463 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,504.00 usft

Wellbore: OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/28/2018	6.87	60.07	48,031.00000000

Design :		OH			
Audit Notes:					
Version:		1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.00	0.00	0.00	0.01

Survey Program		Date	3/10/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
149.00	15,213.00	Survey #1 - MWD (OH)	LEAM MWD+HDGM	MWD+HDGM	
15,271.00	15,271.00	Projection (OH)	Project	Projection	

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (TR 12 Fed 213H) - 50' FSL, 1450' FEL									
149.00	0.70	163.70	149.00	-0.87	0.26	-0.87	0.47	0.47	0.00
241.00	0.40	160.90	240.99	-1.72	0.52	-1.72	0.33	-0.33	-3.04
332.00	0.40	224.50	331.99	-2.24	0.40	-2.24	0.46	0.00	69.89
424.00	0.40	95.50	423.99	-2.50	0.49	-2.50	0.78	0.00	-140.22
514.00	0.53	75.26	513.99	-2.43	1.21	-2.43	0.23	0.14	-22.49
606.00	0.35	106.90	605.98	-2.40	1.89	-2.40	0.32	-0.20	34.39
697.00	0.20	92.80	696.98	-2.49	2.31	-2.49	0.18	-0.16	-15.49
789.00	0.70	351.20	788.98	-1.94	2.39	-1.94	0.83	0.54	-110.43

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Site Tomb Raider 12 Fed
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Site:	Tomb Raider 12 Fed	MD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Well:	Tomb Raider 12 Fed 213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)	
847.00	0.70	13.60	846.98	-1.25	2.42	-1.25	0.47	0.00	38.62	
972.00	0.60	332.10	971.97	0.07	2.29	0.07	0.38	-0.08	-33.20	
1,063.00	0.60	321.40	1,062.96	0.87	1.77	0.87	0.12	0.00	-11.76	
1,154.00	0.70	316.30	1,153.96	1.64	1.09	1.64	0.13	0.11	-5.60	
1,249.00	0.60	335.60	1,248.95	2.51	0.48	2.51	0.25	-0.11	20.32	
1,339.00	0.40	315.00	1,338.95	3.16	0.07	3.16	0.30	-0.22	-22.89	
1,430.00	0.30	309.90	1,429.95	3.54	-0.34	3.54	0.11	-0.11	-5.60	
1,521.00	0.30	334.20	1,520.95	3.91	-0.63	3.91	0.14	0.00	26.70	
1,615.00	0.40	318.40	1,614.94	4.38	-0.95	4.38	0.15	0.11	-16.81	
1,705.00	0.30	0.60	1,704.94	4.85	-1.16	4.85	0.30	-0.11	46.89	
1,798.00	0.10	123.60	1,797.94	5.05	-1.09	5.05	0.39	-0.22	132.26	
1,894.00	0.20	171.90	1,893.94	4.83	-0.99	4.83	0.16	0.10	50.31	
1,988.00	0.30	178.10	1,987.94	4.43	-0.96	4.42	0.11	0.11	6.60	
2,084.00	0.20	129.90	2,083.94	4.07	-0.83	4.07	0.23	-0.10	-50.21	
2,179.00	0.30	135.20	2,178.94	3.78	-0.52	3.78	0.11	0.11	5.58	
2,273.00	0.50	150.50	2,272.94	3.25	-0.15	3.25	0.24	0.21	16.28	
2,369.00	0.40	132.60	2,368.93	2.66	0.30	2.66	0.18	-0.10	-18.65	
2,462.00	0.50	115.30	2,461.93	2.27	0.91	2.27	0.18	0.11	-18.60	
2,557.00	0.70	109.70	2,556.93	1.89	1.83	1.89	0.22	0.21	-5.89	
2,652.00	0.70	102.90	2,651.92	1.57	2.94	1.57	0.09	0.00	-7.16	
2,742.00	0.90	90.20	2,741.91	1.44	4.19	1.44	0.30	0.22	-14.11	
2,838.00	1.00	71.00	2,837.90	1.71	5.73	1.71	0.35	0.10	-20.00	
2,931.00	1.00	76.10	2,930.88	2.17	7.29	2.17	0.10	0.00	5.48	
3,024.00	1.10	83.50	3,023.87	2.47	8.96	2.47	0.18	0.11	7.96	
3,121.00	1.10	76.10	3,120.85	2.80	10.79	2.80	0.15	0.00	-7.63	
3,216.00	0.30	121.50	3,215.84	2.89	11.89	2.89	0.96	-0.84	47.79	
3,311.00	0.40	95.30	3,310.84	2.73	12.43	2.73	0.20	0.11	-27.58	
3,407.00	1.70	250.90	3,406.83	2.23	11.42	2.23	2.16	1.35	162.08	
3,503.00	0.40	62.40	3,502.82	1.92	10.37	1.92	2.18	-1.35	178.65	
3,592.00	0.50	92.00	3,591.81	2.05	11.03	2.05	0.28	0.11	33.26	
3,686.00	1.00	103.40	3,685.81	1.85	12.24	1.85	0.55	0.53	12.13	
3,780.00	1.70	119.00	3,779.78	0.98	14.26	0.98	0.83	0.74	16.60	
3,875.00	2.60	122.70	3,874.71	-0.87	17.30	-0.87	0.96	0.95	3.89	
3,970.00	2.30	128.50	3,969.62	-3.22	20.61	-3.22	0.41	-0.32	6.11	
4,161.00	3.30	134.00	4,160.39	-9.42	27.56	-9.42	0.54	0.52	2.88	
4,254.00	3.40	136.60	4,253.24	-13.29	31.38	-13.28	0.20	0.11	2.80	
4,349.00	3.30	132.00	4,348.07	-17.16	35.35	-17.16	0.30	-0.11	-4.84	
4,445.00	3.00	133.10	4,443.93	-20.73	39.24	-20.72	0.32	-0.31	1.15	
4,539.00	2.60	132.90	4,537.82	-23.86	42.60	-23.86	0.43	-0.43	-0.21	
4,634.00	2.50	131.00	4,632.72	-26.69	45.74	-26.68	0.14	-0.11	-2.00	
4,728.00	2.50	130.50	4,726.63	-29.36	48.84	-29.36	0.02	0.00	-0.53	
4,823.00	2.20	130.30	4,821.55	-31.89	51.81	-31.88	0.32	-0.32	-0.21	
4,917.00	2.00	127.30	4,915.49	-34.05	54.49	-34.04	0.24	-0.21	-3.19	

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Site Tomb Raider 12 Fed
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Site:	Tomb Raider 12 Fed	MD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Well:	Tomb Raider 12 Fed 213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
5,012.00	1.80	124.30	5,010.44	-35.89	57.04	-35.89	0.24	-0.21	-3.16
5,106.00	1.80	120.40	5,104.39	-37.47	59.54	-37.47	0.13	0.00	-4.15
5,202.00	1.60	112.00	5,200.35	-38.74	62.08	-38.73	0.33	-0.21	-8.75
5,303.00	1.40	117.10	5,301.31	-39.83	64.48	-39.82	0.24	-0.20	5.05
5,390.00	1.20	123.20	5,388.29	-40.81	66.19	-40.81	0.28	-0.23	7.01
5,493.00	1.10	121.30	5,491.27	-41.92	67.94	-41.91	0.10	-0.10	-1.84
5,579.00	1.10	130.60	5,577.26	-42.88	69.27	-42.88	0.21	0.00	10.81
5,663.00	1.10	130.10	5,661.24	-43.93	70.50	-43.92	0.01	0.00	-0.60
5,760.00	0.90	135.70	5,758.22	-45.07	71.75	-45.06	0.23	-0.21	5.77
5,864.00	0.80	119.70	5,862.21	-46.02	72.95	-46.01	0.25	-0.10	-15.38
5,958.00	0.90	127.60	5,956.20	-46.79	74.10	-46.78	0.16	0.11	8.40
6,018.00	0.89	124.26	6,016.20	-47.34	74.86	-47.33	0.09	-0.02	-5.57
9 5/8"									
6,048.00	0.88	122.55	6,046.19	-47.59	75.24	-47.59	0.09	-0.02	-5.69
6,143.00	0.18	257.90	6,141.19	-48.02	75.71	-48.01	1.07	-0.74	142.47
6,238.00	1.85	276.00	6,236.17	-47.89	74.04	-47.88	1.77	1.76	19.05
6,333.00	3.69	278.46	6,331.06	-47.28	69.49	-47.27	1.94	1.94	2.59
6,428.00	4.84	274.42	6,425.79	-46.52	62.47	-46.51	1.25	1.21	-4.25
6,522.00	5.72	274.77	6,519.39	-45.82	53.85	-45.82	0.94	0.94	0.37
6,617.00	6.42	276.88	6,613.86	-44.79	43.86	-44.79	0.77	0.74	2.22
6,712.00	6.60	275.48	6,708.25	-43.64	33.15	-43.63	0.25	0.19	-1.47
6,806.00	6.42	276.35	6,801.64	-42.54	22.55	-42.54	0.22	-0.19	0.93
6,901.00	6.33	274.60	6,896.05	-41.53	12.05	-41.53	0.23	-0.09	-1.84
6,996.00	6.60	271.61	6,990.45	-40.96	1.38	-40.96	0.45	0.28	-3.15
7,091.00	6.16	271.61	7,084.86	-40.66	-9.18	-40.66	0.46	-0.46	0.00
7,186.00	6.95	275.65	7,179.24	-39.95	-19.99	-39.96	0.96	0.83	4.25
7,279.00	7.12	279.17	7,271.54	-38.48	-31.28	-38.48	0.50	0.18	3.78
7,374.00	7.03	280.05	7,365.82	-36.53	-42.82	-36.53	0.15	-0.09	0.93
7,469.00	7.03	281.45	7,460.10	-34.36	-54.24	-34.36	0.18	0.00	1.47
7,563.00	6.95	280.92	7,553.40	-32.14	-65.46	-32.15	0.11	-0.09	-0.56
7,658.00	6.77	281.10	7,647.72	-29.97	-76.60	-29.98	0.19	-0.19	0.19
7,753.00	6.95	281.28	7,742.04	-27.77	-87.73	-27.78	0.19	0.19	0.19
7,847.00	7.12	280.05	7,835.33	-25.64	-99.05	-25.65	0.24	0.18	-1.31
7,941.00	6.77	279.87	7,928.64	-23.68	-110.24	-23.69	0.37	-0.37	-0.19
8,035.00	7.12	279.52	8,021.96	-21.76	-121.44	-21.77	0.38	0.37	-0.37
8,129.00	7.03	279.17	8,115.24	-19.88	-132.87	-19.89	0.11	-0.10	-0.37
8,222.00	7.03	278.46	8,207.54	-18.14	-144.12	-18.15	0.09	0.00	-0.76
8,317.00	6.95	277.94	8,301.83	-16.49	-155.56	-16.50	0.11	-0.08	-0.55
8,412.00	6.24	279.34	8,396.20	-14.86	-166.35	-14.87	0.77	-0.75	1.47
8,507.00	5.80	280.75	8,490.68	-13.12	-176.16	-13.14	0.49	-0.46	1.48
8,602.00	5.10	274.95	8,585.25	-11.86	-185.08	-11.88	0.94	-0.74	-6.11
8,696.00	4.57	273.01	8,678.92	-11.31	-192.98	-11.32	0.59	-0.56	-2.06
8,791.00	4.48	271.43	8,773.62	-11.02	-200.47	-11.03	0.16	-0.09	-1.66
8,886.00	5.28	267.92	8,868.28	-11.08	-208.55	-11.10	0.90	0.84	-3.69

LEAM Drilling Services

Survey Report

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
8,981.00	4.57	264.93	8,962.92	-11.57	-216.69	-11.59	0.79	-0.75	-3.15
9,076.00	3.34	270.38	9,057.70	-11.89	-223.22	-11.91	1.35	-1.29	5.74
9,170.00	2.73	276.35	9,151.56	-11.63	-228.19	-11.65	0.73	-0.65	6.35
9,264.00	2.90	279.34	9,245.45	-10.99	-232.76	-11.01	0.24	0.18	3.18
9,359.00	3.43	278.46	9,340.31	-10.18	-237.94	-10.20	0.56	0.56	-0.93
9,453.00	3.17	276.71	9,434.15	-9.47	-243.30	-9.49	0.30	-0.28	-1.86
9,546.00	3.43	274.24	9,527.00	-8.96	-248.63	-8.98	0.32	0.28	-2.66
9,640.00	3.43	267.92	9,620.83	-8.85	-254.24	-8.88	0.40	0.00	-6.72
9,671.00	3.43	263.52	9,651.77	-8.99	-256.09	-9.01	0.85	0.00	-14.19
9,741.71	2.73	296.90	9,722.39	-8.47	-259.70	-8.49	2.67	-0.99	47.20
KOP (TR 12 Fed 213H) - 50' FSL, 1677' FEL S12									
9,743.00	2.73	297.62	9,723.67	-8.44	-259.75	-8.46	2.67	-0.17	56.01
9,790.00	5.63	4.95	9,770.57	-5.62	-260.55	-5.65	11.11	6.17	143.26
9,838.00	10.82	21.65	9,818.06	0.92	-258.68	0.89	11.79	10.81	34.79
9,885.00	16.53	24.11	9,863.71	11.13	-254.32	11.11	12.21	12.15	5.23
9,932.00	21.10	20.94	9,908.19	25.14	-248.56	25.12	9.96	9.72	-6.74
9,979.00	25.06	13.21	9,951.43	42.74	-243.26	42.72	10.59	8.43	-16.45
9,989.22	26.16	13.00	9,960.65	47.05	-242.26	47.02	10.85	10.81	-2.10
FTP (TR 12 Fed 213H) - 100' FSL, 1677' FEL S12									
9,996.35	26.94	12.86	9,967.02	50.15	-241.54	50.13	10.85	10.81	-1.96
100' FSL HL Crossing @ 9996.35' MD									
10,027.00	30.25	12.33	9,993.93	64.47	-238.35	64.44	10.85	10.81	-1.72
10,074.00	35.26	12.51	10,033.45	89.29	-232.88	89.27	10.66	10.66	0.38
10,122.00	39.04	6.00	10,071.71	117.87	-228.29	117.85	11.35	7.88	-13.56
10,169.00	43.79	1.78	10,106.96	148.87	-226.24	148.85	11.72	10.11	-8.98
10,216.00	50.12	2.49	10,139.02	183.18	-224.95	183.16	13.51	13.47	1.51
10,263.00	54.96	1.43	10,167.60	220.45	-223.69	220.43	10.45	10.30	-2.26
10,311.00	61.29	2.14	10,192.93	261.17	-222.41	261.15	13.25	13.19	1.48
10,358.00	68.06	1.96	10,213.03	303.60	-220.89	303.58	14.41	14.40	-0.38
10,406.00	72.55	0.73	10,229.20	348.77	-219.84	348.75	9.66	9.35	-2.56
10,453.00	73.95	0.73	10,242.74	393.77	-219.26	393.75	2.98	2.98	0.00
10,500.00	75.97	0.38	10,254.94	439.16	-218.82	439.14	4.36	4.30	-0.74
10,547.00	78.79	0.03	10,265.21	485.02	-218.66	485.00	6.04	6.00	-0.74
10,595.00	80.20	0.20	10,273.96	532.21	-218.57	532.19	2.96	2.94	0.35
10,642.00	82.57	359.50	10,281.00	578.68	-218.69	578.66	5.25	5.04	-1.49
10,689.00	85.21	358.62	10,286.00	625.40	-219.46	625.38	5.92	5.62	-1.87
10,751.00	88.02	359.15	10,289.66	687.27	-220.66	687.25	4.61	4.53	0.85
10,812.00	89.69	358.97	10,290.88	748.25	-221.66	748.23	2.75	2.74	-0.30
10,906.00	90.40	358.97	10,290.81	842.23	-223.35	842.21	0.76	0.76	0.00
11,001.00	89.78	358.44	10,290.66	937.21	-225.50	937.19	0.86	-0.65	-0.56
11,095.00	89.34	358.62	10,291.38	1,031.18	-227.91	1,031.16	0.51	-0.47	0.19
11,189.00	91.54	359.15	10,290.66	1,125.15	-229.74	1,125.13	2.41	2.34	0.56
11,284.00	90.75	0.20	10,288.76	1,220.13	-230.28	1,220.11	1.38	-0.83	1.11

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Site Tomb Raider 12 Fed
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Site:	Tomb Raider 12 Fed	MD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Well:	Tomb Raider 12 Fed 213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
11,379.00	91.45	0.20	10,286.93	1,315.11	-229.95	1,315.09	0.74	0.74	0.00
11,473.00	93.39	1.43	10,282.97	1,409.01	-228.61	1,408.99	2.44	2.06	1.31
11,567.00	91.80	2.14	10,278.71	1,502.86	-225.68	1,502.84	1.85	-1.69	0.76
11,662.00	87.67	0.73	10,279.15	1,597.81	-223.31	1,597.79	4.59	-4.35	-1.48
11,756.00	87.05	0.55	10,283.48	1,691.70	-222.26	1,691.68	0.69	-0.66	-0.19
11,851.00	86.70	0.90	10,288.66	1,786.55	-221.06	1,786.53	0.52	-0.37	0.37
11,945.00	88.20	359.85	10,292.84	1,880.45	-220.44	1,880.43	1.95	1.60	-1.12
12,041.00	89.43	358.97	10,294.83	1,976.43	-221.43	1,976.41	1.58	1.28	-0.92
12,135.00	89.60	0.20	10,295.62	2,070.42	-222.11	2,070.40	1.32	0.18	1.31
12,230.00	88.72	359.67	10,297.01	2,165.41	-222.22	2,165.39	1.08	-0.93	-0.56
12,324.00	90.13	0.03	10,297.96	2,259.40	-222.47	2,259.38	1.55	1.50	0.38
12,419.00	89.16	358.80	10,298.55	2,354.39	-223.44	2,354.37	1.65	-1.02	-1.29
12,513.00	90.66	358.80	10,298.69	2,448.37	-225.40	2,448.35	1.60	1.60	0.00
12,608.00	91.98	359.15	10,296.50	2,543.32	-227.10	2,543.30	1.44	1.39	0.37
12,702.00	89.43	358.80	10,295.35	2,637.29	-228.78	2,637.27	2.74	-2.71	-0.37
12,796.00	90.40	359.50	10,295.49	2,731.28	-230.18	2,731.26	1.27	1.03	0.74
12,891.00	88.99	359.50	10,295.99	2,826.27	-231.01	2,826.25	1.48	-1.48	0.00
12,986.00	89.34	359.32	10,297.38	2,921.26	-231.99	2,921.24	0.41	0.37	-0.19
13,081.00	89.96	359.67	10,297.96	3,016.25	-232.82	3,016.23	0.75	0.65	0.37
13,175.00	90.57	0.03	10,297.52	3,110.25	-233.07	3,110.23	0.75	0.65	0.38
13,271.00	91.98	0.20	10,295.39	3,206.22	-232.88	3,206.20	1.48	1.47	0.18
13,365.00	90.13	359.85	10,293.66	3,300.20	-232.84	3,300.18	2.00	-1.97	-0.37
13,459.00	88.02	0.03	10,295.17	3,394.19	-232.93	3,394.17	2.25	-2.24	0.19
13,554.00	88.99	0.38	10,297.65	3,489.15	-232.59	3,489.13	1.09	1.02	0.37
13,648.00	89.60	0.38	10,298.81	3,583.14	-231.97	3,583.12	0.65	0.65	0.00
13,743.00	89.25	0.20	10,299.76	3,678.14	-231.49	3,678.12	0.41	-0.37	-0.19
13,837.00	91.36	0.20	10,299.26	3,772.13	-231.16	3,772.11	2.24	2.24	0.00
13,932.00	92.33	359.67	10,296.20	3,867.08	-231.27	3,867.06	1.16	1.02	-0.56
14,027.00	90.13	359.32	10,294.16	3,962.05	-232.11	3,962.03	2.34	-2.32	-0.37
14,122.00	91.19	359.32	10,293.07	4,057.03	-233.23	4,057.01	1.12	1.12	0.00
14,216.00	89.52	359.85	10,292.49	4,151.02	-233.92	4,151.00	1.86	-1.78	0.56
14,310.00	89.08	359.15	10,293.64	4,245.01	-234.74	4,244.99	0.88	-0.47	-0.74
14,405.00	89.16	358.97	10,295.10	4,339.99	-236.29	4,339.97	0.21	0.08	-0.19
14,502.00	89.34	358.80	10,296.36	4,436.96	-238.18	4,436.94	0.26	0.19	-0.18
14,596.00	90.48	359.32	10,296.51	4,530.95	-239.72	4,530.93	1.33	1.21	0.55
14,691.00	91.45	358.62	10,294.91	4,625.92	-241.43	4,625.90	1.26	1.02	-0.74
14,785.00	93.12	358.09	10,291.16	4,719.80	-244.13	4,719.78	1.86	1.78	-0.56
14,880.00	91.28	359.32	10,287.52	4,814.70	-246.27	4,814.68	2.33	-1.94	1.29
14,974.00	88.81	0.73	10,287.44	4,908.69	-246.23	4,908.67	3.03	-2.63	1.50
15,069.00	89.34	359.50	10,288.98	5,003.67	-246.04	5,003.65	1.41	0.56	-1.29
15,163.00	91.10	359.85	10,288.62	5,097.67	-246.57	5,097.65	1.91	1.87	0.37
15,191.30	91.60	359.55	10,287.95	5,125.96	-246.72	5,125.94	2.05	1.76	-1.06
100' FNL HL Crossing @ 15191.30' MD									
15,191.60	91.60	359.55	10,287.94	5,126.26	-246.72	5,126.24	2.05	1.76	-1.06

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Site Tomb Raider 12 Fed
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Site:	Tomb Raider 12 Fed	MD Reference:	3504.0' GE + 32' KB @ 3536.00usft
Well:	Tomb Raider 12 Fed 213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
LTP (TR 12 Fed 213H) - 100' FNL, 1651' FEL S12									
15,213.00	91.98	359.32	10,287.27	5,147.65	-246.93	5,147.63	2.05	1.76	-1.06
15,271.00	91.98	359.32	10,285.27	5,205.61	-247.62	5,205.59	0.00	0.00	0.00
TD Projection - PBHL (TR 12 Fed 213H) - 20' FNL, 1650' FEL S12 - BHL (TR 12 Fed 213H) - 20.34' FNL, 1668.92' FEL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (TR 12 Fed 213H) -	0.00	0.00	0.00	0.00	0.00	477,706.15	728,454.84	32° 18' 42.6014 N	103° 43' 39.5463 W
- actual wellpath hits target center									
- Point									
BHL (TR 12 Fed 213H) -	0.00	0.00	10,285.27	5,205.61	-247.62	482,911.76	728,207.21	32° 19' 34.1266 N	103° 43' 42.0893 W
- actual wellpath hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,018.00	6,016.20	9 5/8"	9-5/8	12-1/4

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,996.35	9,967.02	50.15	-241.54	100' FSL HL Crossing @ 9996.35' MD
15,191.30	10,287.95	5,125.96	-246.72	100' FNL HL Crossing @ 15191.30' MD
15,271.00	10,285.27	5,205.61	-247.62	TD Projection

Checked By: _____ Approved By: _____ Date: _____