

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., 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 Dr.
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 30-025-47722	² Pool Code 97903	³ Pool Name WC-025 G-08 S253235G; Lower Bone Spring
⁴ Property Code 329701	⁵ Property Name RUTHLESS 11 FED COM	⁶ Well Number 509H
⁷ OGRID No. 7377	⁸ Operator Name EOG RESOURCES, INC.	⁹ Elevation 3517'

¹⁰Surface Location

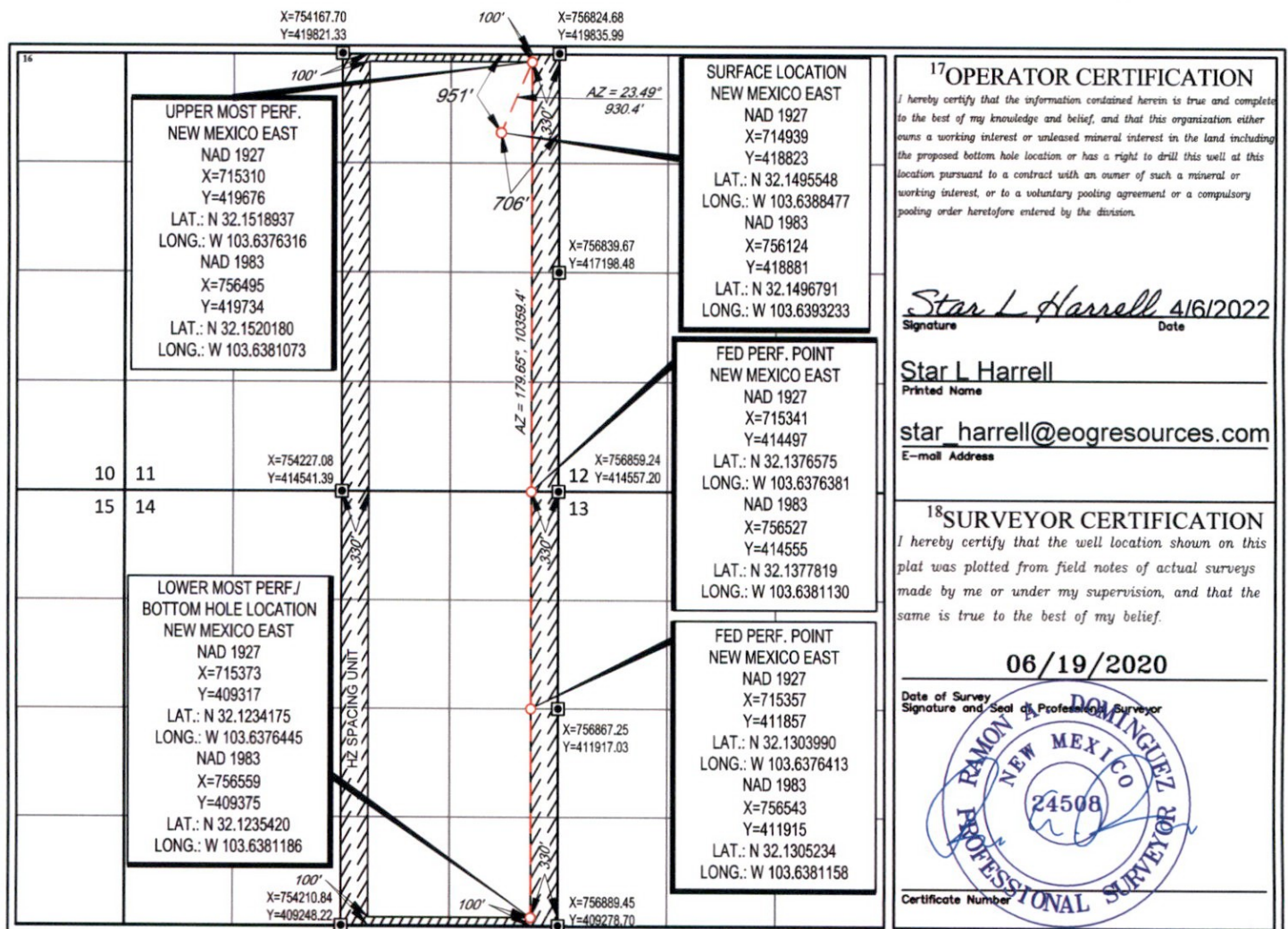
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	11	25-S	32-E	-	951'	NORTH	706'	EAST	LEA

¹¹Bottom 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
P	14	25-S	32-E	-	100'	SOUTH	330'	EAST	LEA

¹² Dedicated Acres 640.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.





Ruthless 11 Fed Com 509H

Revised Permit Information 04/06/2022:

Well Name: Ruthless 11 Fed Com 509H

Location: SHL: 951' FNL & 706' FEL, Section 11, T-25-S, R-32-E, Lea Co., TX

BHL: 100' FSL & 330' FEL, Section 14, T-25-S, R-32-E, Lea Co., TX

Casing Program:

Hole Size	Interval MD		Interval TVD		Csg OD	Weight	Grade
	From (ft)	To (ft)	From (ft)	To (ft)			
17-1/2"	0	1,040	0	1,040	13-3/8"	54.5#	J-55
12-1/4"	0	4,000	0	3,928	9-5/8"	40#	J-55
12-1/4"	4,000	4,740	3,928	4,668	9-5/8"	40#	HCK-55
8-3/4"	0	20,829	0	10,518	5-1/2"	20#	P110-EC

Variance is requested to waive the centralizer requirements for the 9-5/8" casing, 12-1/4" hole size. An expansion additive will be utilized, in the cement slurry, entire length of the 12-1/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 5-1/2" casing, the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
1,040' 13-3/8"	460	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl ₂ + 0.5% Cello-Flake (TOC @ Surface)
	150	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.25 lb/sk Metasilicate (TOC @ 840')
4,740' 9-5/8"	690	12.7	2.22	Lead: Class C + 10% NaCl + 6% Bentonite Gel + 3% Metasilicate (TOC @ Surface)
	300	14.8	1.32	Tail: Class C + 10% NaCl + 3% MagOx (TOC @ 3,790')
20,829' 5-1/2"	600	11.0	3.21	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Metasilicate (TOC @ 4,240')
	2820	14.4	1.2	Tail: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Metasilicate (TOC @ 10,177')



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25 lb/sk Cello-
.2% Sodium
agOx (TOC @
)
6 Microbond
Microbond

**Ruthless 11 Fed Com 509H**

Additive	Purpose
Bentonite Gel	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
MagOx	Expansive agent
Pre-Mag-M	Expansive agent
Sodium Chloride	Accelerator
FL-62	Fluid loss control
Halad-344	Fluid loss control
Halad-9	Fluid loss control
HR-601	Retarder
Microbond	Expansive Agent

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

Mud Program:

Depth (TVD)	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,040'	Fresh - Gel	8.6-8.8	28-34	N/c
1,040' – 4,740'	Brine	8.6-8.8	28-34	N/c
4,740' – 20,829'	Oil Base	8.8-9.5	58-68	N/c - 6

Wellhead & Offline Cementing:

EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards for well control equipment testing of Onshore Order No. 2 (item III.A.2.a.i) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with Batch Drilling & Offline cement operations to include the following:

- Full BOPE test at first installation on the pad.
- Full BOPE test every 30 days per Onshore Order No. 2.
- Function test BOP elements per Onshore Order No. 2.
- Break testing BOP and BOPE coupled with batch drilling operations and option to offline cement and/or remediate (if needed) any surface or intermediate sections, according to attached offline cementing support documentation.
- After the well section is secured, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad.
- TA cap will also be installed per Wellhead vendor procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.
- See attached "EOG BLM Variance 3a -Offline Cement Intermediate Operational Procedure"



Lea County, NM (NAD 83 NME)

Ruthless 11 Fed Com #509H

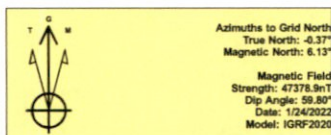
OH

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

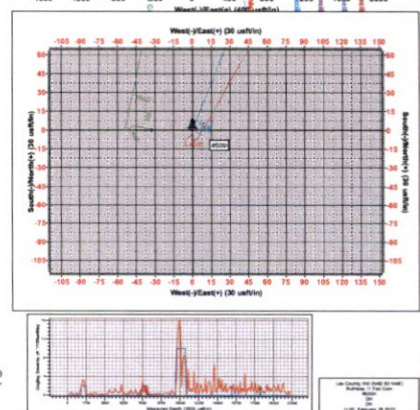
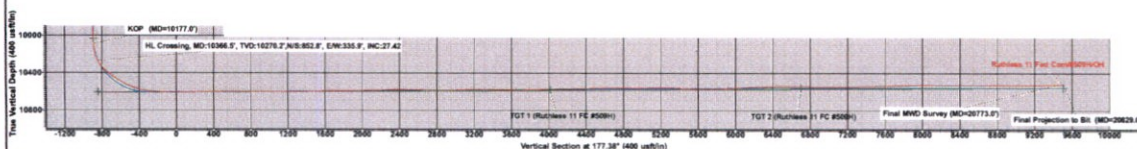
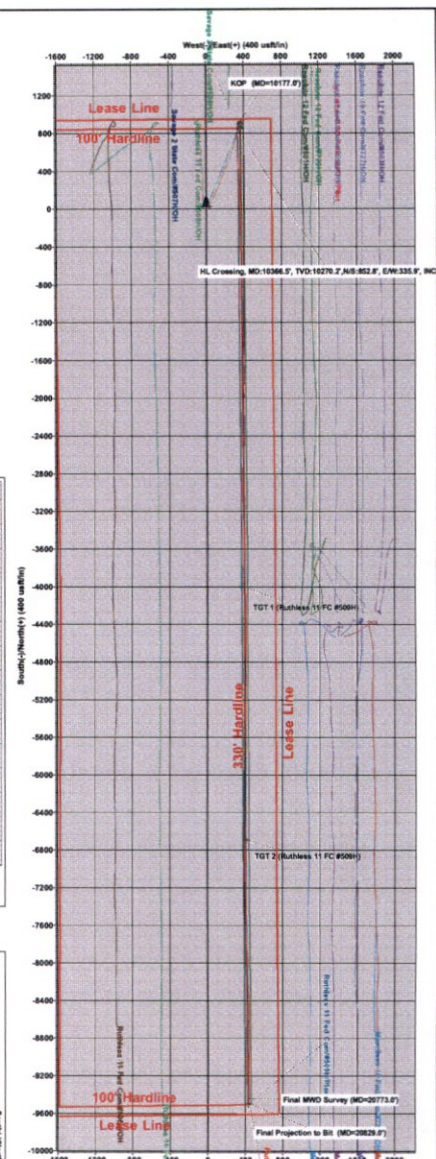
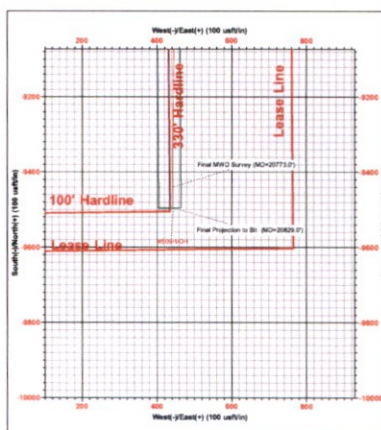
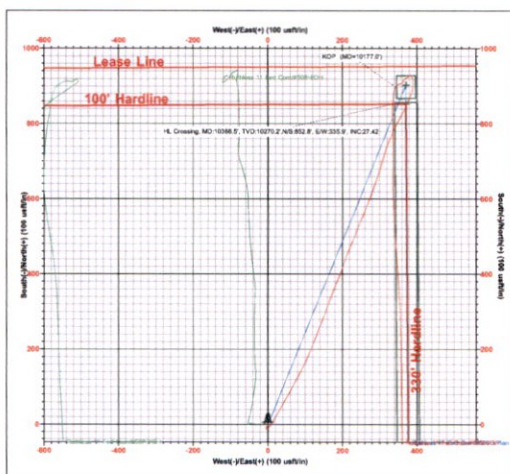
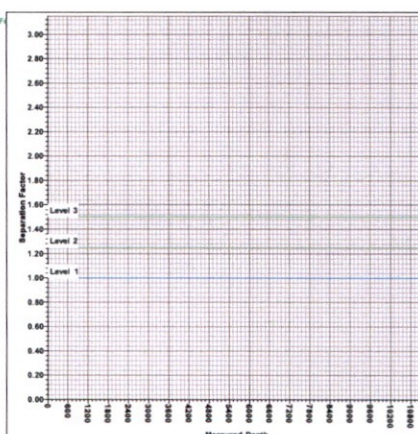
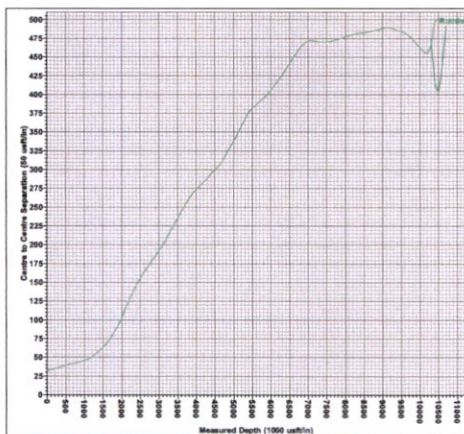
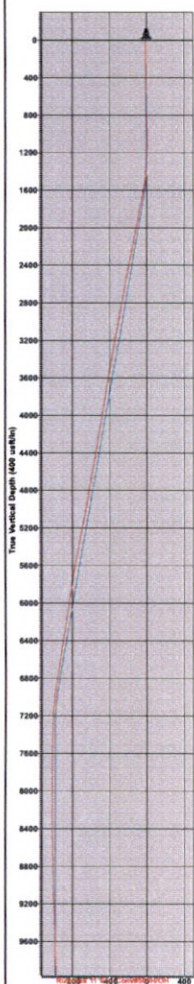
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level

WELL DETAILS: #509H

KB = 25 @ 3542.0usft
 3517.0
 Northing 418661.00 Easting 756124.00 Latitude 32° 6' 58.846 N Longitude 103° 38' 21.568 W



To convert a Magnetic Direction to a Grid Direction, Add 6.13°
 To convert a Magnetic Direction to a True Direction, Add 6.50° East
 To convert a True Direction to a Grid Direction, Subtract 0.37°





Midland

Lea County, NM (NAD 83 NME)

Ruthless 11 Fed Com

#509H

OH

Design: OH

Final PVA

28 February, 2022



Final PVA

Company: Midland Project: Lea County, NM (NAD 83 NME) Site: Ruthless 11 Fed Com Well: #509H Wellbore: OH Design: OH		Local Co-ordinate Reference: TVD Reference: KB = 25 @ 3542.0usft MD Reference: KB = 25 @ 3542.0usft North Reference: Grid Survey Calculation Method: Minimum Curvature Database: PEDM	
Project Lea County, NM (NAD 83 NME)			
Map System: US State Plane 1983 Geo Datum: North American Datum 1983 Map Zone: New Mexico Eastern Zone		System Datum: Mean Sea Level	
Site Ruthless 11 Fed Com			
Site Position: From: Map Position Uncertainty: 0.0 usft		Northing: 419,142.00 usft Easting: 752,042.00 usft Slot Radius: 13-3/16 "	
		Latitude: 32° 8' 1.687 N Longitude: 103° 39' 9.029 W Grid Convergence: 0.36 °	
Well #509H			
Well Position +N/-S 0.0 usft +E/-W 0.0 usft Position Uncertainty 0.0 usft		Northing: 418,881.00 usft Easting: 756,124.00 usft Wellhead Elevation: usft	
		Latitude: 32° 8' 58.846 N Longitude: 103° 38' 21.568 W Ground Level: 3,517.0 usft	
Wellbore OH			
Magnetics			
Model Name	Sample Date	Declination (°)	Dip Angle (°)
IGRF2020	1/24/2022	6.50	59.80
Field Strength (nT) 47,378.87014547			
Design OH			
Audit Notes:			
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0	
Vertical Section:			
Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
0.0	0.0	0.0	177.38
Survey Program			
Date 2/28/2022			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
200.0	20,829.0	Stryker MWD #1 (OH)	EOG MWD+IFR1
			Description MWD + IFR1



Final PVA

Company:	Midland	Local Co-ordinate Reference:	Well #509H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3542.0ust
Site:	Ruthless 11 Fed Com	MD Reference:	KB = 25 @ 3542.0ust
Well:	#509H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	PEDM

Survey	MD (ustf)	Inc (°)	Azi (azimuth) (°)	TVD (ustf)	N/S (ustf)	E/W (ustf)	Dlog (°/100ustf)	Build (°/100ustf)	Turn (°/100ustf)	High to Plan (ustf)	Right to Plan (ustf)
	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
	200.0	0.40	159.85	200.0	-0.7	0.2	0.20	0.20	0.00	-0.7	0.0
	300.0	1.01	190.17	300.0	-1.9	0.2	0.69	0.61	30.32	-1.8	0.5
	481.0	1.01	230.78	481.0	-4.4	-1.3	0.39	0.00	22.44	-3.8	2.6
	664.0	1.01	242.29	663.9	-6.2	-4.0	0.11	0.00	6.29	-6.4	3.6
	846.0	0.97	187.53	845.9	-8.5	-5.6	0.50	-0.02	-30.09	-9.1	-4.5
	1,028.0	0.79	174.00	1,027.9	-11.2	-5.7	0.15	-0.10	-7.43	-10.6	-6.8
	1,117.0	0.79	150.01	1,116.9	-12.4	-5.3	0.37	0.00	-26.96	-8.1	-10.8
	1,298.0	2.90	59.22	1,297.8	-11.1	-0.8	1.67	1.17	-50.16	6.4	-9.2
	1,388.0	5.19	39.53	1,387.6	-6.8	3.8	2.94	2.54	-21.88	4.6	-7.8
	1,479.0	7.82	29.60	1,478.0	1.7	9.5	3.13	2.89	-10.91	0.3	-8.2
	1,569.0	10.59	29.33	1,566.8	14.3	16.5	3.08	3.08	-0.30	-6.7	-9.2
	1,659.0	10.86	29.33	1,655.2	28.9	24.8	0.30	0.30	0.00	-13.3	-10.4
	1,750.0	11.25	30.04	1,744.6	44.0	33.4	0.45	0.43	0.78	-17.8	-11.9
	1,840.0	11.38	30.30	1,832.8	59.3	42.3	0.16	0.14	0.29	-20.3	-13.9
	1,931.0	11.38	30.30	1,922.0	74.8	51.3	0.00	0.00	0.00	-22.7	-16.1
	2,022.0	11.16	30.04	2,011.3	90.2	60.3	0.25	-0.24	-0.29	-24.8	-18.4
	2,112.0	11.12	27.40	2,099.6	105.4	68.6	0.57	-0.04	-2.93	-25.8	-21.3
	2,203.0	11.16	27.49	2,188.9	121.0	76.7	0.05	0.04	0.10	-27.7	-22.6
	2,294.0	11.38	28.28	2,278.1	136.7	85.0	0.30	0.24	0.87	-30.1	-23.8
	2,385.0	11.30	28.01	2,367.3	152.5	93.5	0.11	-0.09	-0.30	-32.2	-25.5
	2,475.0	11.08	25.47	2,455.6	168.1	101.3	0.60	-0.24	-2.82	-32.9	-28.1
	2,566.0	10.81	23.01	2,545.0	183.9	108.4	0.59	-0.30	-2.70	-33.2	-30.1
	2,656.0	10.59	21.07	2,633.4	199.3	114.7	0.47	-0.24	-2.16	-33.3	-31.1
	2,746.0	10.68	21.86	2,721.8	214.8	120.8	0.19	0.10	0.88	-34.7	-30.4
	2,836.0	10.68	21.77	2,810.3	230.3	127.0	0.02	0.00	-0.10	-35.7	-30.3
	2,927.0	10.73	21.86	2,899.7	246.0	133.3	0.06	0.05	0.10	-36.9	-30.1



Final PVA

Company: Midland		Local Co-ordinate Reference:				Well #509H				
Project: Lea County, NM (NAD 83 NME)		TVD Reference:				KB = 25 @ 3542.0usft				
Site: Ruthless 11 Fed Com		MD Reference:				KB = 25 @ 3542.0usft				
Well: #509H		North Reference:				Grid				
Wellbore: OH		Survey Calculation Method:				Minimum Curvature				
Design: OH		Database:				PEDM				
Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
3,017.0	10.73	22.48	2,988.1	261.5	139.6	0.13	0.00	0.69	-38.4	-29.7
3,108.0	10.55	21.69	3,077.6	277.1	145.9	0.25	-0.20	-0.87	-39.0	-30.1
3,198.0	10.37	19.93	3,166.1	292.3	151.7	0.41	-0.20	-1.96	-38.8	-30.9
3,289.0	10.24	20.02	3,255.6	307.6	157.3	0.14	-0.14	0.10	-39.4	-30.2
3,379.0	10.11	20.54	3,344.2	322.6	162.8	0.18	-0.14	0.58	-39.9	-29.2
3,470.0	9.89	20.63	3,433.8	337.3	168.3	0.24	-0.24	0.10	-40.0	-28.7
3,560.0	9.63	20.98	3,522.5	351.6	173.8	0.30	-0.29	0.39	-39.8	-28.0
3,652.0	9.41	21.77	3,613.2	365.8	179.3	0.28	-0.24	0.86	-39.4	-27.2
3,742.0	9.14	23.09	3,702.1	379.2	184.8	0.38	-0.30	1.47	-38.9	-26.4
3,833.0	8.79	23.62	3,791.9	392.2	190.5	0.40	-0.38	0.58	-37.5	-26.3
3,923.0	9.89	20.90	3,880.8	405.7	196.0	1.32	1.22	-3.02	-35.2	-28.0
4,014.0	10.37	18.43	3,970.3	420.8	201.4	0.71	0.53	-2.71	-34.2	-28.7
4,105.0	9.89	18.87	4,059.9	436.0	206.5	0.53	-0.53	0.48	-34.7	-27.4
4,196.0	9.63	20.46	4,149.6	450.5	211.7	0.41	-0.29	1.75	-35.0	-25.7
4,287.0	9.32	23.18	4,239.4	464.4	217.2	0.60	-0.34	2.99	-35.4	-23.9
4,377.0	8.88	24.76	4,328.2	477.4	223.0	0.56	-0.49	1.76	-34.6	-23.4
4,467.0	10.02	20.28	4,417.0	491.1	228.6	1.51	1.27	-4.98	-31.8	-26.0
4,558.0	10.77	19.84	4,506.5	506.5	234.2	0.83	0.82	-0.48	-32.3	-25.6
4,648.0	10.33	23.44	4,595.0	521.8	240.3	0.88	-0.49	4.00	-34.7	-23.3
4,739.0	10.02	24.50	4,684.6	536.5	246.8	0.40	-0.34	1.16	-35.4	-23.1
4,931.0	8.70	21.93	4,874.0	565.2	259.2	0.72	-0.69	-1.34	-32.2	-25.2
5,021.0	10.86	21.58	4,962.7	579.4	264.9	2.40	2.40	-0.39	-31.7	-25.2
5,112.0	11.74	20.96	5,051.9	596.0	271.3	0.98	0.97	-0.68	-33.5	-25.3
5,202.0	11.60	20.79	5,140.1	613.0	277.8	0.16	-0.16	-0.19	-36.0	-25.0
5,293.0	11.08	20.17	5,229.3	629.7	284.1	0.59	-0.57	-0.68	-37.9	-24.9
5,383.0	10.77	19.91	5,317.6	645.8	289.9	0.35	-0.34	-0.29	-39.3	-24.4
5,474.0	10.68	18.59	5,407.1	661.8	295.5	0.29	-0.10	-1.45	-39.9	-24.5



Final PVA

Company:	Midland	Local Co-ordinate Reference:	Well #509H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3542.0usft
Site:	Ruthless 11 Fed Com	MD Reference:	KB = 25 @ 3542.0usft
Well:	#509H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
5,564.0	10.55	17.10	5,495.5	677.5	300.6	0.34	-0.14	-1.66	-40.3	-24.3	
5,655.0	10.51	16.83	5,585.0	693.4	305.4	0.07	-0.04	-0.30	-41.1	-23.0	
5,746.0	9.93	16.57	5,674.5	708.9	310.1	0.64	-0.64	-0.29	-41.4	-21.6	
5,836.0	9.67	14.90	5,763.2	723.6	314.2	0.43	-0.29	-1.86	-40.6	-21.0	
5,926.0	8.88	19.73	5,852.1	737.5	318.5	1.23	-0.88	5.37	-41.1	-16.2	
6,017.0	8.57	23.86	5,942.0	750.3	323.6	0.77	-0.34	4.54	-40.1	-13.2	
6,108.0	8.31	24.04	6,032.0	762.5	329.1	0.29	-0.29	0.20	-37.7	-13.5	
6,198.0	7.87	23.69	6,121.1	774.1	334.2	0.49	-0.49	-0.39	-34.6	-14.1	
6,288.0	8.35	25.97	6,210.2	785.6	339.5	0.64	0.53	2.53	-32.2	-13.5	
6,379.0	9.49	28.70	6,300.1	798.1	346.0	1.34	1.25	3.00	-31.2	-13.4	
6,469.0	9.23	27.99	6,388.9	811.0	353.0	0.32	-0.29	-0.79	-30.1	-15.4	
6,560.0	9.05	27.12	6,478.8	823.8	359.6	0.25	-0.20	-0.96	-28.5	-17.3	
6,650.0	8.57	26.06	6,567.7	836.1	365.8	0.56	-0.53	-1.18	-26.4	-19.0	
6,741.0	8.66	24.83	6,657.7	848.5	371.7	0.23	0.10	-1.35	-23.8	-20.4	
6,832.0	9.85	24.22	6,747.5	861.8	377.7	1.31	1.31	-0.67	-22.4	-21.2	
6,922.0	9.32	24.65	6,836.2	875.4	383.9	0.59	-0.59	0.48	-22.0	-21.6	
7,013.0	6.86	11.47	6,926.3	887.4	388.1	3.37	-2.70	-14.48	-15.4	-25.0	
7,104.0	5.63	0.22	7,016.8	897.2	389.2	1.90	-1.35	-12.36	-9.7	-24.4	
7,194.0	5.23	1.19	7,106.4	905.8	389.3	0.46	-0.44	1.08	-10.9	-21.2	
7,285.0	3.30	358.02	7,197.1	912.5	389.3	2.14	-2.12	-3.48	-11.5	-19.8	
7,375.0	3.21	359.52	7,287.0	917.6	389.2	0.14	-0.10	1.67	-14.7	-18.4	
7,465.0	1.58	336.93	7,376.9	921.3	388.7	2.06	-1.81	-25.10	-9.9	-23.4	
7,555.0	1.45	342.73	7,466.9	923.5	387.9	0.22	-0.14	6.44	-14.6	-22.2	
7,646.0	1.32	336.40	7,557.8	925.6	387.1	0.22	-0.14	-6.96	-14.2	-23.8	
7,737.0	0.97	323.31	7,648.8	927.2	386.2	0.48	-0.38	-14.38	-10.3	-26.6	
7,828.0	0.88	320.93	7,739.8	928.3	385.3	0.11	-0.10	-2.62	-10.6	-27.1	
7,918.0	0.70	322.52	7,829.8	929.3	384.5	0.20	-0.20	1.77	-12.6	-26.7	

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COMPASS 5000.16 Build 100



Final PVA

Company:	Midland	Local Co-ordinate Reference:	Well #509H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3542.0usft
Site:	Ruthless 11 Fed Com	MD Reference:	KB = 25 @ 3542.0usft
Well:	#509H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
8,009.0	0.79	314.87	7,920.8	930.2	383.8	0.15	0.10	-8.41	-10.1	-28.3	
8,099.0	0.48	306.17	8,010.8	930.8	383.0	0.36	-0.34	-9.67	-6.7	-29.6	
8,280.0	0.26	257.92	8,191.8	931.2	382.0	0.20	-0.12	-26.66	16.7	-25.3	
8,371.0	0.53	217.75	8,282.8	930.8	381.5	0.41	0.30	-44.14	28.4	-8.7	
8,462.0	0.75	227.15	8,373.8	930.1	380.8	0.27	0.24	10.33	25.6	-13.2	
8,552.0	1.01	211.16	8,463.8	929.0	380.0	0.39	0.29	-17.77	26.9	-5.7	
8,643.0	1.19	223.82	8,554.8	927.6	378.9	0.33	0.20	13.91	23.3	-11.3	
8,733.0	1.32	227.24	8,644.7	926.3	377.5	0.17	0.14	3.80	20.6	-12.6	
8,824.0	1.41	231.20	8,735.7	924.8	375.9	0.14	0.10	4.35	17.5	-14.0	
8,914.0	1.45	234.19	8,825.7	923.5	374.1	0.09	0.04	3.32	14.5	-14.8	
9,005.0	1.23	243.06	8,916.7	922.4	372.3	0.33	-0.24	9.75	9.9	-16.7	
9,095.0	1.67	247.72	9,006.6	921.4	370.2	0.51	0.49	5.18	6.3	-17.3	
9,276.0	1.71	216.43	9,187.6	918.3	366.2	0.50	0.02	-17.29	9.4	-12.9	
9,367.0	1.80	204.04	9,278.5	915.9	364.8	0.43	0.10	-13.62	9.2	-10.9	
9,458.0	1.23	204.83	9,369.5	913.7	363.8	0.63	-0.63	0.87	6.7	-11.0	
9,548.0	1.32	212.65	9,459.5	911.9	362.8	0.22	0.10	8.69	3.1	-11.7	
9,639.0	1.10	224.43	9,550.4	910.4	361.7	0.36	-0.24	12.95	-1.3	-11.9	
9,729.0	2.02	240.43	9,640.4	909.0	359.7	1.12	1.02	17.78	-6.9	-10.8	
9,820.0	2.20	256.95	9,731.3	907.8	356.6	0.69	0.20	18.15	-13.0	-8.0	
9,910.0	2.42	247.37	9,821.3	906.7	353.1	0.49	0.24	-10.64	-15.1	-10.3	
10,001.0	2.73	242.45	9,912.2	905.0	349.4	0.42	0.34	-5.41	-18.2	-11.7	
10,092.0	2.59	239.55	10,003.1	902.9	345.7	0.21	-0.15	-3.19	-21.8	-12.7	
10,177.0	5.01	207.14	10,087.9	898.6	342.4	3.70	2.85	-38.13	-14.5	-24.8	
KOP (MD=10177.0')											
10,212.0	6.20	201.84	10,122.7	895.5	341.0	3.70	3.40	-15.14	-11.4	-27.8	
10,303.0	17.80	186.99	10,211.6	877.1	337.5	13.09	12.75	-16.32	-1.1	-33.8	



Final PVA

Company: Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ruthless 11 Fed Com
 Well: #509H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference:
 TVD Reference: KB = 25 @ 3542.0usft
 MD Reference: KB = 25 @ 3542.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
10,366.5	27.42	181.48	10,270.2	852.8	335.9	15.49	15.15	-8.68	0.7		-35.4
HL Crossing, MD:10366.5', TVD:10270.2', N/S:852.8', E/W:335.9', INC:27.42											
10,393.0	31.47	180.13	10,293.2	839.8	335.7	15.49	15.29	-5.09	-0.3		-35.7
10,484.0	46.15	178.46	10,363.9	782.9	336.6	16.17	16.13	-1.84	-10.6		-35.4
10,574.0	58.15	180.40	10,419.1	712.0	337.2	13.44	13.33	2.16	-28.9		-35.1
10,664.0	56.48	180.57	10,467.7	636.2	336.5	1.86	-1.86	0.19	-40.7		-35.7
10,755.0	61.63	176.09	10,514.5	558.3	338.9	7.06	5.66	-4.92	-38.2		-35.3
10,845.0	69.32	176.18	10,551.8	476.6	344.4	8.54	8.54	0.10	-32.3		-29.9
10,935.0	76.84	176.00	10,578.0	390.8	350.3	8.36	8.36	-0.20	-23.3		-24.2
11,026.0	84.31	177.15	10,592.9	301.2	355.6	8.30	8.21	1.26	-11.8		-19.1
11,117.0	86.11	179.78	10,600.5	210.6	358.0	3.49	1.98	2.89	-3.6		-17.2
11,207.0	86.15	179.43	10,606.5	120.8	358.7	0.39	0.04	-0.39	3.1		-17.1
11,298.0	91.21	179.52	10,608.6	29.9	359.5	5.56	5.56	0.10	5.8		-16.9
11,388.0	90.95	178.73	10,606.9	-60.1	360.9	0.92	-0.29	-0.88	4.8		-16.1
11,478.0	91.34	178.02	10,605.1	-150.0	363.4	0.90	0.43	-0.79	3.6		-14.1
11,569.0	91.47	176.71	10,602.9	-240.9	367.6	1.45	0.14	-1.44	2.0		-10.4
11,659.0	91.47	176.00	10,600.6	-330.7	373.3	0.79	0.00	-0.79	0.3		-5.3
11,750.0	91.69	175.12	10,598.1	-421.4	380.4	1.00	0.24	-0.97	-1.5		1.2
11,840.0	90.42	179.61	10,596.4	-511.3	384.5	5.18	-1.41	4.99	-2.5		4.8
11,930.0	90.64	178.99	10,595.6	-601.3	385.6	0.73	0.24	-0.69	-2.7		5.4
12,021.0	90.42	178.73	10,594.8	-692.2	387.4	0.37	-0.24	-0.29	-2.9		6.6
12,112.0	89.71	181.10	10,594.7	-783.2	387.5	2.72	-0.78	2.60	-2.4		6.2
12,202.0	88.97	179.69	10,595.7	-873.2	386.9	1.77	-0.82	-1.57	-0.7		5.0
12,292.0	88.97	179.43	10,597.3	-963.2	387.6	0.29	0.00	-0.29	1.6		5.1
12,382.0	88.22	178.82	10,599.5	-1,053.2	389.0	1.07	-0.83	-0.68	4.4		6.0
12,473.0	90.46	178.82	10,600.6	-1,144.1	390.9	2.46	2.46	0.00	6.1		7.3
12,564.0	91.38	179.87	10,599.1	-1,235.1	391.9	1.53	1.01	1.15	5.3		7.8

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Final PVA

Company:	Midland	Local Co-ordinate Reference:	Well #509H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3542.0usft
Site:	Ruthless 11 Fed Com	MD Reference:	KB = 25 @ 3542.0usft
Well:	#509H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,655.0	91.47	179.52	10,596.8	-1,326.1	392.4	0.40	0.10	-0.38	3.7	7.7	
12,746.0	91.52	178.38	10,594.5	-1,417.0	394.1	1.25	0.05	-1.25	2.0	8.8	
12,836.0	91.60	177.58	10,592.0	-1,506.9	397.2	0.89	0.09	-0.89	0.2	11.4	
12,928.0	90.55	180.75	10,590.3	-1,598.9	398.6	3.63	-1.14	3.45	-0.9	12.2	
13,018.0	90.86	180.57	10,589.2	-1,688.9	397.5	0.40	0.34	-0.20	-1.4	10.6	
13,108.0	90.68	179.69	10,588.0	-1,778.9	397.3	1.00	-0.20	-0.98	-1.9	9.8	
13,199.0	88.84	177.76	10,588.4	-1,869.8	399.3	2.93	-2.02	-2.12	-0.9	11.3	
13,289.0	91.03	179.25	10,588.5	-1,959.8	401.7	2.94	2.43	1.66	-0.1	13.1	
13,379.0	91.47	181.54	10,586.5	-2,049.8	401.1	2.59	0.49	2.54	-1.5	11.9	
13,470.0	91.52	181.45	10,584.1	-2,140.7	398.7	0.11	0.05	-0.10	-3.2	9.0	
13,560.0	91.87	181.19	10,581.5	-2,230.7	396.6	0.48	0.39	-0.29	-5.2	6.4	
13,651.0	94.07	181.28	10,576.7	-2,321.5	394.7	2.42	2.42	0.10	-9.3	3.9	
13,741.0	88.00	181.63	10,575.1	-2,411.4	392.4	6.76	-6.74	0.39	-10.3	1.0	
13,832.0	88.66	180.92	10,577.8	-2,502.4	390.4	1.07	0.73	-0.78	-7.0	-1.6	
13,922.0	88.40	180.40	10,580.1	-2,592.3	389.3	0.65	-0.29	-0.58	-4.0	-3.2	
14,013.0	88.35	181.72	10,582.7	-2,683.3	387.6	1.45	-0.05	1.45	-0.8	-5.4	
14,104.0	87.78	180.66	10,585.7	-2,774.2	385.8	1.32	-0.63	-1.16	2.9	-7.8	
14,194.0	91.12	179.96	10,586.6	-2,864.2	385.3	3.79	3.71	-0.78	4.5	-8.9	
14,285.0	92.40	179.34	10,583.8	-2,955.1	385.8	1.56	1.41	-0.68	2.3	-8.9	
14,375.0	93.54	179.08	10,579.1	-3,045.0	387.1	1.30	1.27	-0.29	-1.7	-8.2	
14,466.0	90.46	179.17	10,576.0	-3,135.9	388.5	3.39	-3.38	0.10	-4.2	-7.4	
14,556.0	90.90	178.73	10,574.9	-3,225.9	390.1	0.69	0.49	-0.49	-4.7	-6.3	
14,646.0	89.80	178.02	10,574.3	-3,315.9	392.7	1.45	-1.22	-0.79	-4.6	-4.3	
14,737.0	89.45	177.06	10,574.9	-3,406.8	396.6	1.12	-0.38	-1.05	-3.3	-0.9	
14,828.0	89.54	179.43	10,575.7	-3,497.7	399.3	2.61	0.10	2.60	-1.9	1.3	
14,918.0	89.14	179.08	10,576.8	-3,587.7	400.5	0.59	-0.44	-0.39	-0.2	1.9	
14,989.0	89.98	178.90	10,577.3	-3,658.7	401.8	1.21	1.18	-0.25	0.9	2.7	



Final PVA

Company: Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ruthless 11 Fed Com
 Well: #509H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #509H
 TVD Reference: KB = 25 @ 3542.0usft
 MD Reference: KB = 25 @ 3542.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
15,079.0	90.73	178.20	10,576.8	-3,748.7	404.0	1.14	0.83	-0.78	0.9	4.5	
15,170.0	92.13	177.76	10,574.5	-3,839.6	407.2	1.61	1.54	-0.48	-0.7	7.1	
15,261.0	90.77	178.82	10,572.2	-3,930.5	410.0	1.89	-1.49	1.16	-2.3	9.3	
15,352.0	91.78	178.55	10,570.2	-4,021.4	412.1	1.15	1.11	-0.30	-3.7	10.8	
15,443.0	92.84	178.20	10,566.5	-4,112.3	414.6	1.23	1.16	-0.38	-6.7	12.8	
15,533.0	90.68	178.73	10,563.7	-4,202.3	417.0	2.47	-2.40	0.59	-8.8	14.7	
15,623.0	90.99	178.64	10,562.4	-4,292.2	419.1	0.36	0.34	-0.10	-9.4	16.2	
15,713.0	90.86	179.87	10,561.0	-4,382.2	420.3	1.37	-0.14	1.37	-10.2	16.8	
15,804.0	91.82	179.52	10,558.8	-4,473.2	420.8	1.12	1.05	-0.38	-11.7	16.7	
15,895.0	90.29	180.57	10,557.2	-4,564.2	420.7	2.04	-1.68	1.15	-12.7	16.1	
15,985.0	90.46	180.49	10,556.6	-4,654.1	419.9	0.21	0.19	-0.09	-12.6	14.7	
16,075.0	91.21	179.87	10,555.3	-4,744.1	419.6	1.08	0.83	-0.69	-13.2	13.9	
16,166.0	88.70	180.92	10,555.3	-4,835.1	418.9	2.99	-2.76	1.15	-12.5	12.7	
16,256.0	88.97	181.19	10,557.2	-4,925.1	417.3	0.42	0.30	0.30	-10.0	10.5	
16,347.0	90.29	180.84	10,557.8	-5,016.1	415.7	1.50	1.45	-0.38	-8.7	8.3	
16,437.0	91.21	181.28	10,556.6	-5,106.0	414.0	1.13	1.02	0.49	-9.2	6.1	
16,528.0	91.69	180.75	10,554.3	-5,197.0	412.4	0.79	0.53	-0.58	-10.8	3.9	
16,619.0	87.43	181.01	10,555.0	-5,288.0	411.0	4.69	-4.68	0.29	-9.5	2.0	
16,710.0	87.34	181.01	10,559.1	-5,378.9	409.4	0.10	-0.10	0.00	-4.6	-0.2	
16,800.0	88.57	181.10	10,562.3	-5,468.8	407.7	1.37	1.37	0.10	-0.8	-2.4	
16,890.0	89.32	180.66	10,564.0	-5,558.8	406.4	0.97	0.83	-0.49	1.6	-4.3	
16,981.0	90.42	180.13	10,564.2	-5,649.8	405.7	1.34	1.21	-0.58	2.5	-5.5	
17,071.0	89.63	178.64	10,564.2	-5,739.7	406.7	1.87	-0.88	-1.66	3.1	-5.1	
17,161.0	90.07	179.17	10,564.4	-5,829.7	408.4	0.77	0.49	0.59	4.0	-4.0	
17,252.0	92.57	180.40	10,562.3	-5,920.7	408.8	3.06	2.75	1.35	2.6	-4.2	
17,343.0	93.36	179.69	10,557.6	-6,011.6	408.7	1.17	0.87	-0.78	-1.5	-4.8	
17,433.0	92.97	180.40	10,552.6	-6,101.4	408.6	0.90	-0.43	0.79	-5.8	-5.4	

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COMPASS 5000.16 Build 100



Final PVA

Company:	Midland	Local Co-ordinate Reference:	Well #509H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3542.0usft
Site:	Ruthless 11 Fed Com	MD Reference:	KB = 25 @ 3542.0usft
Well:	#509H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
17,523.0	93.89	180.66	10,547.2	-6,191.3	407.8	1.06	1.02	0.29	-10.5	-6.8	
17,614.0	91.38	180.84	10,543.1	-6,282.2	406.6	2.77	-2.76	0.20	-14.0	-8.6	
17,703.0	91.60	180.57	10,540.7	-6,371.1	405.5	0.39	0.25	-0.30	-15.6	-10.2	
17,791.0	92.09	180.57	10,537.9	-6,459.1	404.6	0.56	0.56	0.00	-17.8	-11.6	
17,881.0	90.07	180.92	10,536.2	-6,549.0	403.5	2.28	-2.24	0.39	-18.8	-13.3	
17,972.0	89.05	180.75	10,536.9	-6,640.0	402.1	1.14	-1.12	-0.19	-17.5	-15.2	
18,061.0	89.54	181.10	10,538.0	-6,729.0	400.7	0.68	0.55	0.39	-15.9	-17.2	
18,151.0	88.18	180.22	10,539.8	-6,819.0	399.7	1.80	-1.51	-0.98	-14.1	-18.8	
18,241.0	89.45	179.87	10,541.7	-6,909.0	399.6	1.46	1.41	-0.39	-12.3	-19.4	
18,332.0	89.89	179.69	10,542.2	-7,000.0	399.9	0.52	0.48	-0.20	-11.7	-19.6	
18,422.0	90.33	179.17	10,542.0	-7,090.0	400.8	0.76	0.49	-0.58	-11.9	-19.3	
18,513.0	90.55	178.90	10,541.3	-7,180.9	402.4	0.38	0.24	-0.30	-12.6	-18.3	
18,604.0	91.87	178.73	10,539.4	-7,271.9	404.2	1.46	1.45	-0.19	-14.5	-17.0	
18,695.0	89.93	178.11	10,538.0	-7,362.8	406.8	2.24	-2.13	-0.68	-16.0	-15.0	
18,785.0	90.64	178.02	10,537.5	-7,452.8	409.8	0.80	0.79	-0.10	-16.4	-12.5	
18,876.0	92.22	177.67	10,535.2	-7,543.7	413.2	1.78	1.74	-0.38	-18.7	-9.7	
18,966.0	90.86	177.58	10,532.8	-7,633.6	416.9	1.51	-1.51	-0.10	-21.1	-6.5	
19,056.0	90.29	177.23	10,531.9	-7,723.5	421.0	0.74	-0.63	-0.39	-22.0	-3.0	
19,146.0	91.52	177.32	10,530.5	-7,813.4	425.3	1.37	1.37	0.10	-23.5	0.7	
19,236.0	92.48	178.02	10,527.4	-7,903.2	429.0	1.32	1.07	0.78	-26.6	3.8	
19,326.0	90.64	178.55	10,524.9	-7,993.2	431.6	2.13	-2.04	0.59	-29.0	6.0	
19,417.0	89.27	179.61	10,525.0	-8,084.2	433.1	1.90	-1.51	1.16	-29.0	6.9	
19,508.0	89.19	178.73	10,526.2	-8,175.1	434.4	0.97	-0.09	-0.97	-27.8	7.6	
19,598.0	89.32	177.94	10,527.4	-8,265.1	437.0	0.89	0.14	-0.88	-26.6	9.7	
19,688.0	90.02	176.97	10,527.9	-8,355.0	441.0	1.33	0.78	-1.08	-26.1	13.1	
19,779.0	89.80	179.17	10,528.0	-8,445.9	444.1	2.43	-0.24	2.42	-25.9	15.7	
19,869.0	90.37	179.08	10,527.9	-8,535.9	445.5	0.64	0.63	-0.10	-26.1	16.5	



Final PVA

Company:	Midland	Local Co-ordinate Reference:	Well #509H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3542.0usft
Site:	Ruthless 11 Fed Com	MD Reference:	KB = 25 @ 3542.0usft
Well:	#509H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	PEDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
19,960.0	90.95	178.64	10,526.9	-8,626.9	447.3	0.80	0.64	-0.48	-27.1	17.7	
20,050.0	91.16	178.11	10,525.2	-8,716.8	449.8	0.63	0.23	-0.59	-28.8	19.7	
20,140.0	90.86	180.05	10,523.6	-8,806.8	451.3	2.18	-0.33	2.16	-30.4	20.6	
20,231.0	89.19	181.80	10,523.6	-8,897.8	449.8	2.66	-1.84	1.92	-30.4	18.6	
20,321.0	89.71	181.28	10,524.4	-8,987.8	447.4	0.82	0.58	-0.58	-29.6	15.6	
20,412.0	90.15	180.84	10,524.5	-9,078.7	445.7	0.68	0.48	-0.48	-29.4	13.4	
20,502.0	90.37	180.57	10,524.1	-9,168.7	444.6	0.39	0.24	-0.30	-29.9	11.7	
20,592.0	90.37	180.31	10,523.6	-9,258.7	443.9	0.29	0.00	-0.29	-30.4	10.5	
20,683.0	91.16	180.31	10,522.3	-9,349.7	443.4	0.87	0.87	0.00	-31.7	9.4	
20,773.0	91.69	179.69	10,520.1	-9,439.7	443.4	0.91	0.59	-0.69	-33.9	8.9	
Final MWD Survey (MD=20773.0')											
20,829.0	91.69	179.69	10,518.4	-9,495.7	443.7	0.00	0.00	0.00	-35.5	8.8	
Final Projection to Bit (MD=20829.0')											

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,177.0	10,087.9	898.6	342.4	KOP (MD=10177.0')	
10,366.5	10,270.2	852.8	335.9	HL Crossing, MD:10366.5', TVD:10270.2', N/S:852.8', E/W:335.9', INC:27.42	
20,773.0	10,520.1	-9,439.7	443.4	Final MWD Survey (MD=20773.0')	
20,829.0	10,518.4	-9,495.7	443.7	Final Projection to Bit (MD=20829.0')	

Checked By: _____ Approved By: _____ Date: _____

Jordan Kessler

To: Powell, Brandon, EMNRD
Cc: justin.wrinkle@state.nm.us; Patrick Padilla
Subject: Explanation for submission of C-102/drilling location update

EOG is submitting the attached C-102 to show the updated location of the subject well. The federal sundry showing the well's updated location will be filed with the BLM following drilling, pursuant to the BLM's request that the as-drilled and final location may be submitted via sundry so long as the location is within the quarter quarter section and orthodox. The purpose of BLM's guidance and policy is to consolidate sundry filings into a single, as-drilled approval.

Thanks,
Jordan

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 96564

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 96564
	Action Type: [C-102] Well Location & Acreage Plat (C-102)

CONDITIONS

Created By	Condition	Condition Date
pkautz	All previous COA's apply	4/8/2022