

30-065-44997

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 31 2018

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EOG Resources - Artesia

Eddy County (NAD83)

Tardigrade

Tardigrade #1H

Lateral

Plan: Plan #1

Standard Planning Report

25 May, 2018

Database: EDM 5000.14
Company: EOG Resources - Artesia
Project: Eddy County (NAD83)
Site: Tardigrade
Well: Tardigrade #1H
Wellbore: Lateral
Design: Plan #1

Local Co-ordinate Reference: Well Tardigrade #1H
TVD Reference: KB @ 3547.000usft (Training Rig)
MD Reference: KB @ 3547.000usft (Training Rig)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Tardigrade		
Site Position:		Northing:	638,671.00 usft
From:	Map	Easting:	496,212.00 usft
Position Uncertainty:	0.000 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 45' 20.364 N
		Longitude:	104° 28' 48.438 W
		Grid Convergence:	-0.08 °

Well	Tardigrade #1H		
Well Position	+N/-S	0.000 usft	Northing: 638,671.00 usft
	+E/-W	0.000 usft	Easting: 496,212.00 usft
Position Uncertainty	0.000 usft	Wellhead Elevation:	3,547.000 usft
		Latitude:	32° 45' 20.364 N
		Longitude:	104° 28' 48.438 W
		Ground Level:	3,529.000 usft

Wellbore	Lateral		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	4/30/2018	(°)
			7.32
			Dip Angle
			(°)
			60.39
			Field Strength
			(nT)
			48,064.28026809

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.000
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.000	0.000	0.000
			Direction
			(°)
			359.609

Plan Survey Tool Program	Date 5/25/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
1 0.000	6,814.788	Plan #1 (Lateral)	MWD
			OWSG MWD - Standard

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	
1,250.000	0.00	0.000	1,250.000	0.000	0.000	0.00	0.00	0.00	0.00	
1,591.043	0.00	0.000	1,591.043	0.000	0.000	0.00	0.00	0.00	0.00	
2,257.710	60.00	12.000	2,142.372	311.354	66.180	9.00	9.00	0.00	12.00	
2,332.710	60.00	12.000	2,179.872	374.887	79.685	0.00	0.00	0.00	0.00	
2,606.536	90.11	358.181	2,250.001	634.875	100.567	12.00	11.00	-5.05	-26.12	
6,814.788	90.11	358.181	2,242.000	4,841.000	-33.000	0.00	0.00	0.00	0.00	[TG#1H]BHL1

Database:	EDM 5000.14	Local Co-ordinate Reference:	Well Tardigrade #1H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3547.000usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3547.000usft (Training Rig)
Site:	Tardigrade	North Reference:	Grid
Well:	Tardigrade #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00
100.000	0.00	0.000	100.000	0.000	0.000	0.000	0.00	0.00	0.00
200.000	0.00	0.000	200.000	0.000	0.000	0.000	0.00	0.00	0.00
300.000	0.00	0.000	300.000	0.000	0.000	0.000	0.00	0.00	0.00
400.000	0.00	0.000	400.000	0.000	0.000	0.000	0.00	0.00	0.00
500.000	0.00	0.000	500.000	0.000	0.000	0.000	0.00	0.00	0.00
600.000	0.00	0.000	600.000	0.000	0.000	0.000	0.00	0.00	0.00
700.000	0.00	0.000	700.000	0.000	0.000	0.000	0.00	0.00	0.00
800.000	0.00	0.000	800.000	0.000	0.000	0.000	0.00	0.00	0.00
900.000	0.00	0.000	900.000	0.000	0.000	0.000	0.00	0.00	0.00
1,000.000	0.00	0.000	1,000.000	0.000	0.000	0.000	0.00	0.00	0.00
1,100.000	0.00	0.000	1,100.000	0.000	0.000	0.000	0.00	0.00	0.00
1,200.000	0.00	0.000	1,200.000	0.000	0.000	0.000	0.00	0.00	0.00
1,250.000	0.00	0.000	1,250.000	0.000	0.000	0.000	0.00	0.00	0.00
9 5/8"									
1,300.000	0.00	0.000	1,300.000	0.000	0.000	0.000	0.00	0.00	0.00
1,400.000	0.00	0.000	1,400.000	0.000	0.000	0.000	0.00	0.00	0.00
1,500.000	0.00	0.000	1,500.000	0.000	0.000	0.000	0.00	0.00	0.00
1,591.043	0.00	0.000	1,591.043	0.000	0.000	0.000	0.00	0.00	0.00
KOP 9°/100' BR									
1,600.000	0.81	12.000	1,600.000	0.062	0.013	0.062	9.00	9.00	0.00
1,650.000	5.31	12.000	1,649.916	2.668	0.567	2.664	9.00	9.00	0.00
1,700.000	9.81	12.000	1,699.469	9.098	1.934	9.085	9.00	9.00	0.00
1,750.000	14.31	12.000	1,748.353	19.311	4.105	19.282	9.00	9.00	0.00
1,800.000	18.81	12.000	1,796.268	33.243	7.066	33.194	9.00	9.00	0.00
1,850.000	23.31	12.000	1,842.918	50.810	10.800	50.736	9.00	9.00	0.00
1,900.000	27.81	12.000	1,888.014	71.903	15.284	71.798	9.00	9.00	0.00
1,950.000	32.31	12.000	1,931.280	96.392	20.489	96.250	9.00	9.00	0.00
2,000.000	36.81	12.000	1,972.448	124.126	26.384	123.943	9.00	9.00	0.00
2,050.000	41.31	12.000	2,011.264	154.934	32.932	154.706	9.00	9.00	0.00
2,100.000	45.81	12.000	2,047.490	188.626	40.094	188.348	9.00	9.00	0.00
2,150.000	50.31	12.000	2,080.901	224.993	47.824	224.662	9.00	9.00	0.00
2,200.000	54.81	12.000	2,111.293	263.813	56.075	263.425	9.00	9.00	0.00
2,250.000	59.31	12.000	2,138.477	304.846	64.797	304.397	9.00	9.00	0.00
2,257.710	60.00	12.000	2,142.372	311.354	66.180	310.896	9.00	9.00	0.00
START 75° TANGENT									
2,300.000	60.00	12.000	2,163.517	347.178	73.795	346.667	0.00	0.00	0.00
2,332.710	60.00	12.000	2,179.872	374.887	79.685	374.335	0.00	0.00	0.00
END 60° TANGENT 2332.7' MD (2179.9 TVD) - 7"									
2,350.000	61.87	10.964	2,188.272	389.696	82.692	389.123	12.00	10.80	-5.99
2,375.000	64.58	9.529	2,199.534	411.657	86.658	411.057	12.00	10.85	-5.74
2,400.000	67.31	8.157	2,209.725	434.212	90.164	433.587	12.00	10.90	-5.49
2,425.000	70.04	6.838	2,218.816	457.298	93.200	456.652	12.00	10.95	-5.27
2,450.000	72.79	5.565	2,226.783	480.854	95.757	480.190	12.00	10.99	-5.09
2,475.000	75.54	4.329	2,233.604	504.813	97.830	504.134	12.00	11.02	-4.94
2,500.000	78.30	3.123	2,239.259	529.110	99.411	528.420	12.00	11.04	-4.82
2,525.000	81.07	1.941	2,243.735	553.680	100.496	552.982	12.00	11.06	-4.73
2,550.000	83.84	0.777	2,247.017	578.453	101.083	577.751	12.00	11.08	-4.66
2,575.000	86.61	359.626	2,249.098	603.363	101.170	602.660	12.00	11.09	-4.61
2,600.000	89.38	358.480	2,249.972	628.342	100.757	627.640	12.00	11.09	-4.58
2,606.536	90.11	358.181	2,250.001	634.875	100.567	634.175	12.00	11.09	-4.58
LP[TG#1H] 2606.5' MD (2250' TVD)									
2,700.000	90.11	358.181	2,249.823	728.292	97.600	727.610	0.00	0.00	0.00

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Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,800.000	90.11	358.181	2,249.633	828.241	94.426	827.578	0.00	0.00	0.00
2,900.000	90.11	358.181	2,249.443	928.191	91.252	927.547	0.00	0.00	0.00
3,000.000	90.11	358.181	2,249.253	1,028.140	88.078	1,027.516	0.00	0.00	0.00
3,100.000	90.11	358.181	2,249.063	1,128.089	84.905	1,127.485	0.00	0.00	0.00
3,200.000	90.11	358.181	2,248.872	1,228.039	81.731	1,227.453	0.00	0.00	0.00
3,300.000	90.11	358.181	2,248.682	1,327.988	78.557	1,327.422	0.00	0.00	0.00
3,400.000	90.11	358.181	2,248.492	1,427.938	75.383	1,427.391	0.00	0.00	0.00
3,500.000	90.11	358.181	2,248.302	1,527.887	72.209	1,527.360	0.00	0.00	0.00
3,600.000	90.11	358.181	2,248.112	1,627.837	69.035	1,627.328	0.00	0.00	0.00
3,700.000	90.11	358.181	2,247.922	1,727.786	65.861	1,727.297	0.00	0.00	0.00
3,800.000	90.11	358.181	2,247.732	1,827.736	62.687	1,827.266	0.00	0.00	0.00
3,900.000	90.11	358.181	2,247.542	1,927.685	59.513	1,927.234	0.00	0.00	0.00
4,000.000	90.11	358.181	2,247.351	2,027.634	56.339	2,027.203	0.00	0.00	0.00
4,100.000	90.11	358.181	2,247.161	2,127.584	53.165	2,127.172	0.00	0.00	0.00
4,200.000	90.11	358.181	2,246.971	2,227.533	49.991	2,227.141	0.00	0.00	0.00
4,300.000	90.11	358.181	2,246.781	2,327.483	46.817	2,327.109	0.00	0.00	0.00
4,400.000	90.11	358.181	2,246.591	2,427.432	43.644	2,427.078	0.00	0.00	0.00
4,500.000	90.11	358.181	2,246.401	2,527.382	40.470	2,527.047	0.00	0.00	0.00
4,600.000	90.11	358.181	2,246.211	2,627.331	37.296	2,627.016	0.00	0.00	0.00
4,700.000	90.11	358.181	2,246.021	2,727.280	34.122	2,726.984	0.00	0.00	0.00
4,800.000	90.11	358.181	2,245.831	2,827.230	30.948	2,826.953	0.00	0.00	0.00
4,900.000	90.11	358.181	2,245.640	2,927.179	27.774	2,926.922	0.00	0.00	0.00
5,000.000	90.11	358.181	2,245.450	3,027.129	24.600	3,026.891	0.00	0.00	0.00
5,100.000	90.11	358.181	2,245.260	3,127.078	21.426	3,126.859	0.00	0.00	0.00
5,200.000	90.11	358.181	2,245.070	3,227.028	18.252	3,226.828	0.00	0.00	0.00
5,300.000	90.11	358.181	2,244.880	3,326.977	15.078	3,326.797	0.00	0.00	0.00
5,400.000	90.11	358.181	2,244.690	3,426.926	11.904	3,426.766	0.00	0.00	0.00
5,500.000	90.11	358.181	2,244.500	3,526.876	8.730	3,526.734	0.00	0.00	0.00
5,600.000	90.11	358.181	2,244.310	3,626.825	5.556	3,626.703	0.00	0.00	0.00
5,700.000	90.11	358.181	2,244.119	3,726.775	2.383	3,726.672	0.00	0.00	0.00
5,800.000	90.11	358.181	2,243.929	3,826.724	-0.791	3,826.641	0.00	0.00	0.00
5,900.000	90.11	358.181	2,243.739	3,926.674	-3.965	3,926.609	0.00	0.00	0.00
6,000.000	90.11	358.181	2,243.549	4,026.623	-7.139	4,026.578	0.00	0.00	0.00
6,100.000	90.11	358.181	2,243.359	4,126.572	-10.313	4,126.547	0.00	0.00	0.00
6,200.000	90.11	358.181	2,243.169	4,226.522	-13.487	4,226.516	0.00	0.00	0.00
6,300.000	90.11	358.181	2,242.979	4,326.471	-16.661	4,326.484	0.00	0.00	0.00
6,400.000	90.11	358.181	2,242.789	4,426.421	-19.835	4,426.453	0.00	0.00	0.00
6,500.000	90.11	358.181	2,242.598	4,526.370	-23.009	4,526.422	0.00	0.00	0.00
6,600.000	90.11	358.181	2,242.408	4,626.320	-26.183	4,626.391	0.00	0.00	0.00
6,700.000	90.11	358.181	2,242.218	4,726.269	-29.357	4,726.359	0.00	0.00	0.00
6,800.000	90.11	358.181	2,242.028	4,826.219	-32.531	4,826.328	0.00	0.00	0.00
6,814.788	90.11	358.181	2,242.000	4,841.000	-33.000	4,841.112	0.00	0.00	0.00

TD 6814.8' MD (2242' TVD)

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									
[TG#1H]BHL1	0.00	0.000	2,242.000	4,841.000	-33.000	643,512.00	496,179.00	32° 46' 8.266 N	104° 28' 48.903 W
- plan hits target center									
- Point									

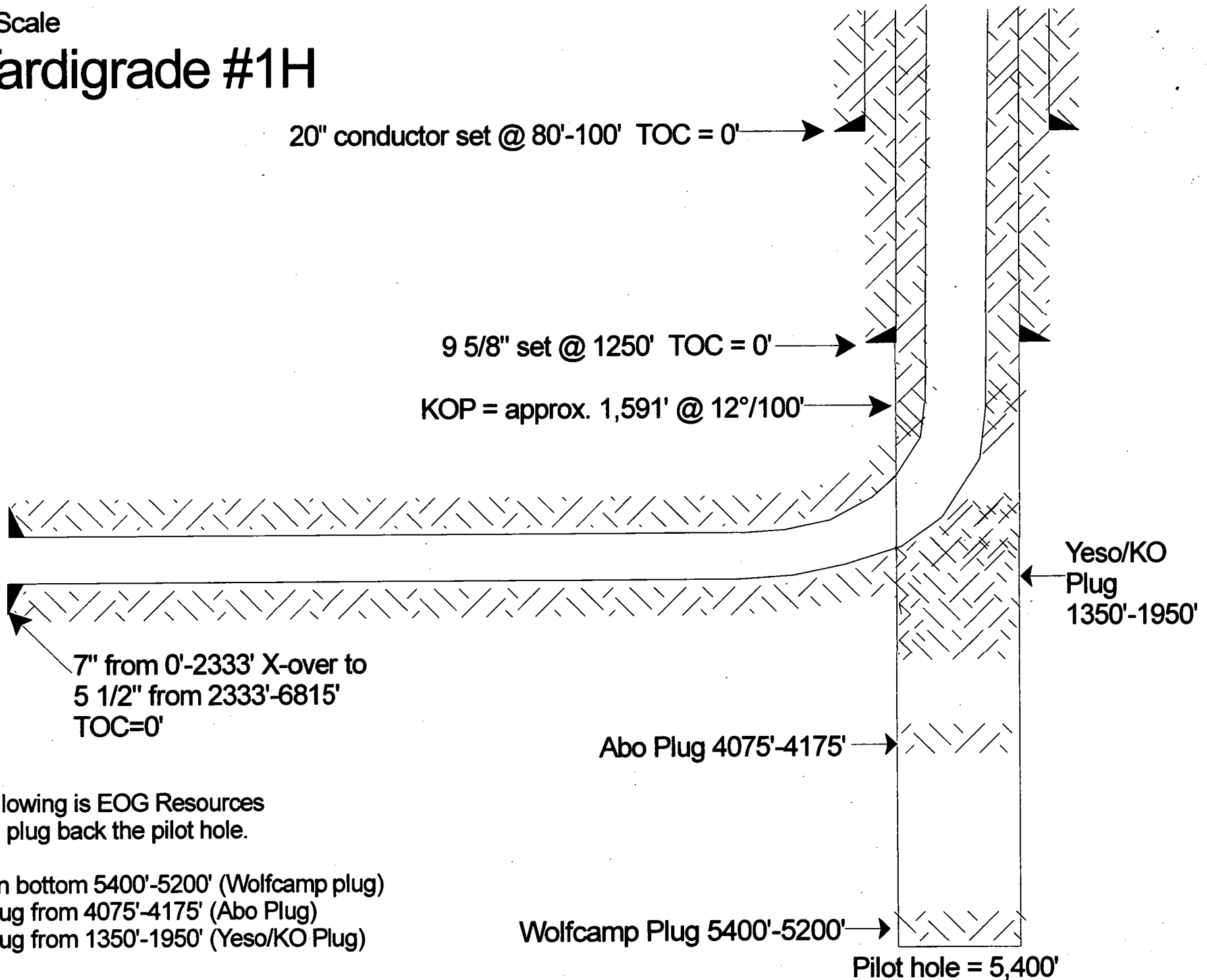
Database:	EDM 5000.14	Local Co-ordinate Reference:	Well Tardigrade #1H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3547.000usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3547.000usft (Training Rig)
Site:	Tardigrade	North Reference:	Grid
Well:	Tardigrade #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,250.000	1,250.000	9 5/8"	9-5/8	12-1/4	
2,332.710	2,179.872	7"	7	8-1/2	
6,814.789	2,242.000	5 1/2"	5-1/2	8-1/2	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,591.043	1,591.043	0.000	0.000	KOP 9°/100' BR	
2,257.710	2,142.372	0.000	0.000	START 75' TANGENT	
2,332.710	2,179.872	311.354	66.180	END 60° TANGENT 2332.7' MD (2179.9 TVD)	
2,606.536	2,250.001	374.887	79.685	LP[1G#1H] 2606.5' MD (2250' TVD)	
6,814.789	2,242.000	634.875	100.567	TD 6814.8' MD (2242' TVD)	

Not to Scale

Tardigrade #1H



The following is EOG Resources plan to plug back the pilot hole.

Plug on bottom 5400'-5200' (Wolfcamp plug)
100' plug from 4075'-4175' (Abo Plug)
100' plug from 1350'-1950' (Yeso/KO Plug)

Project: Eddy County (NAD83)
 Site: Tardigrade
 Well: Tardigrade #1H
 Wellbore: Lateral
 Design: Plan #1
 Ground Elevation 3529.000
 Northing 638671.00
 Easting 496212.00

PROJECT DETAILS: Eddy County (NAD83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
LG#1H]BHL1 - plan hits target center	2242.000	4841.000	-33.000	643512.00	496179.00

