



RYAN DIRECTIONAL SERVICES, INC.

Ryan Job # 7043

Date: 2-Dec-13

A NABORS COMPANY

Kit #

SURVEY REPORT

Customer:	OXY
Well Name & No.:	Yeso Viking Federal #6
County, State:	Eddy Co., NM
Rig Contractor & No.:	Savannah 415
Surface/Location: Y or Lat:	31.81511
X or Long	-104.25689
NAD27 or NAD83:	NAD27
Survey Corrected To:	Grid North

MWD Operator:	Ryan Directional / Rig
RKB:	14
Ground Elevation:	3560
Vertical Section Direction:	0.00
Magnetic Declination:	7.61
Convergence:	0.04
API Number:	30-015-41342

Minimum Curvature Calculation

Sur #	Meas. Depth	Inc.	Azm.	Course Length	T.V.D.	Ver.Sect.	+N/-S	+E/-W	DLS	ClsD	Cls Az
Tie In to Gyro Surveys											
Tie In	0.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	437	0.30	176.40	437.00	437.00	-1.14	-1.14	0.07	0.07	1.14	176.40
2	502.7	0.10	195.90	65.70	502.70	-1.37	-1.37	0.07	0.32	1.37	177.20
3	592.9	0.10	120.20	90.20	592.90	-1.48	-1.48	0.11	0.14	1.49	175.63
4	683.9	0.30	128.30	91.00	683.90	-1.67	-1.67	0.37	0.22	1.71	167.55
5	745	0.40	122.20	61.10	745.00	-1.88	-1.88	0.67	0.17	2.00	160.29
6	838	0.20	91.60	93.00	837.99	-2.06	-2.06	1.11	0.27	2.34	151.66
7	929.1	0.40	88.00	91.10	929.09	-2.06	-2.06	1.59	0.22	2.60	142.30
8	1018.6	0.60	89.40	89.50	1018.59	-2.04	-2.04	2.37	0.22	3.13	130.72
9	1103	1.50	118.70	84.40	1102.98	-2.57	-2.57	3.78	1.21	4.57	124.16
10	1232.9	0.70	133.00	129.90	1232.85	-3.92	-3.92	5.85	0.65	7.05	123.84
11	1319.7	0.50	168.70	86.80	1319.65	-4.66	-4.66	6.31	0.48	7.85	126.40
12	1446.6	0.30	154.80	126.90	1446.54	-5.50	-5.50	6.56	0.17	8.56	129.96
13	1704.7	1.60	146.70	258.10	1704.60	-9.12	-9.12	8.83	0.51	12.70	135.93
14	1792.1	0.50	102.20	87.40	1791.99	-10.22	-10.22	9.87	1.48	14.21	136.00
15	1921.2	0.60	92.20	129.10	1921.08	-10.37	-10.37	11.10	0.11	15.19	133.05
16	2054.6	0.40	96.30	133.40	2054.48	-10.45	-10.45	12.26	0.15	16.11	130.43
17	2183.6	0.50	90.60	129.00	2183.47	-10.50	-10.50	13.27	0.08	16.92	128.36
18	2315.7	0.40	110.00	132.10	2315.57	-10.67	-10.67	14.28	0.14	17.82	126.76
19	2442.2	0.60	102.40	126.50	2442.06	-10.96	-10.96	15.34	0.17	18.85	125.54
20	2569.6	0.70	124.30	127.40	2569.45	-11.54	-11.54	16.64	0.21	20.25	124.75
21	2697.5	0.50	124.50	127.90	2697.35	-12.30	-12.30	17.74	0.16	21.59	124.73
22	2758	0.70	133.90	60.50	2757.84	-12.70	-12.70	18.23	0.37	22.21	124.88
23	2873.1	0.83	122.7	115.10	2872.93	-13.64	-13.64	19.43	0.17	23.74	125.07
24	2983.5	0.88	104.0	110.40	2983.32	-14.28	-14.28	20.93	0.26	25.33	124.30
25	3090.6	0.83	115.1	107.10	3090.41	-14.81	-14.81	22.43	0.16	26.87	123.43
26	3170.9	0.79	118.9	80.30	3170.70	-15.32	-15.32	23.44	0.08	28.00	123.17
27	3262.0	0.62	135.8	91.10	3261.80	-15.98	-15.98	24.33	0.29	29.11	123.29
28	3347.3	0.31	126.3	85.30	3347.09	-16.44	-16.44	24.84	0.37	29.79	123.50
29	3432.9	0.26	136.7	85.60	3432.69	-16.72	-16.72	25.16	0.08	30.21	123.61
30	3562.5	0.18	133.9	129.60	3562.29	-17.08	-17.08	25.51	0.06	30.70	123.80
31	3647.2	0.09	90.1	84.70	3646.99	-17.17	-17.17	25.67	0.15	30.88	123.78
32	3776.2	0.22	77.2	129.00	3775.99	-17.12	-17.12	26.01	0.10	31.14	123.34
33	3862.8	0.18	92.2	86.60	3862.59	-17.08	-17.08	26.31	0.08	31.37	122.99
34	3947.1	0.09	47.8	84.30	3946.89	-17.04	-17.04	26.49	0.16	31.50	122.75
35	4032.6	0.04	111.5	85.50	4032.39	-17.01	-17.01	26.57	0.09	31.55	122.63
36	4126.8	0.13	97.4	94.20	4126.59	-17.04	-17.04	26.71	0.10	31.68	122.53
37	4212.1	0.04	62.3	85.30	4211.89	-17.03	-17.03	26.83	0.12	31.78	122.41
38	4298.3	0.18	229.1	86.20	4298.09	-17.11	-17.11	26.76	0.25	31.76	122.60
39	4383.9	0.26	188.2	85.60	4383.69	-17.39	-17.39	26.63	0.20	31.80	123.15
40	4426.5	0.18	179.3	42.60	4426.29	-17.55	-17.55	26.61	0.20	31.88	123.41
41	4525.1	0.18	179.30	98.60	4524.89	-17.86	-17.86	26.62	0.00	32.05	123.86
#####	#41=PTB			#####	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

19510 Oil Center Blvd
Houston, TX 77073
Bus 281.443.1414
Fax 281.443.1676

Tuesday, December 10, 2013

Other

Subject: **Survey Certification Letter**

Re: **OXY, USA**

Yeso Viking Federal #6

Eddy, NM

A.P.I. No: 30-015-41342

I, Chris Thoma, certify that; I am employed by Ryan Directional Services, Inc.; that I did on the conduct or supervise the taking of the following MWD surveys:

on the day(s) of 11/29/2013 thru 12/6/2013 from a depth of 437' MD to a depth of 4426' MD and Straight line projection to TD 4525' MD;

that the data is true, correct, complete, and within the limitations of the tool as set forth by Ryan Directional Services, Inc.; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY, USA for the Yeso Viking Federal #6; Well API No. A.P.I. No: 30-015-41342 in Eddy, NM.

Chris Thoma

MWD Operator

Ryan Directional Services, Inc.



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

19510 Oil Center Blvd
Houston, TX 77073
Bus 281.443.1414
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Tuesday, December 10, 2013

Other

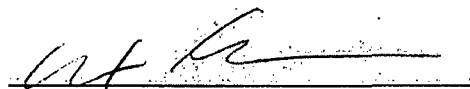
Subject: **Surveys**

Re: **OXY, USA**
Yeso Viking Federal #6
Eddy, NM
A.P.I. No: 30-015-41342

Enclosed, please find the original and one copy of the survey performed on the above-referenced well by Ryan Directional Services, Inc. (Operator #:). Other information required by your office is as follows:

<i>Surveyor Name</i>	<i>Surveyor Title</i>	<i>Borehole Number</i>	<i>Start Depth</i>	<i>End Depth</i>	<i>Start Date</i>	<i>End Date</i>	<i>Type of</i>	<i>TD Straight Line Projection</i>
Thoma, Chris	MWD Operator	O.H.	437'	4426'	11/29/13	12/06/13	MWD	4525'

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required please contact the undersigned at the letterhead address or phone number.


Alex Karpiuk
Coordinator

Occidental Oil & Gas Corp – Permian Primary – North NM/Terrell RMT

Well: Yeso Viking Federal #6		API: 30-015-41342	
State: New Mexico	County: Eddy	T17S R27E, Sec 23	950' FSL & 330' FWL
Field: Empire	TD: 4,525'	PBTD: 4,476'	KB: 3,574' ASL
Casing Size:	Grade/Weight:	Depth:	Cement:
8-5/8"	J-55 STC / 24#	400'	210 sx, 84 sx circ'd to surf
5-1/2"	L-80 BTC / 17#	4,519'	760 sx, 240 sx circ'd to surf

