

Oilfield Services, Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

30.015-44587

October 8, 2018

**NM OIL CONSERVATION
ARTESIA DISTRICT**

OXY USA, Inc.

FEB 15 2019

RECEIVED

Re:

2, 25 S, 29 E, Eddy NM
N 32.16365 W -103.96330

CLIENT: OXY USA, Inc.
WELL: Corral Fly 02-01 State 33H
FIELD: Purple Sage (Wolfcamp)

RIG: H&P 635
COUNTY: Eddy
API NO: 3001544587
JOB NO: 18MLD3540

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Diyar Kaky FS	Corral Fly 02-01 State 33H Original Hole	509.00 Ft to 20401.00 Ft	August 31, 2016 to September 14, 2017	TelePacer/SlimPulse Third Party Corrected

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Van Spinks
Field Service Manager

Oilfield Services, Central U S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

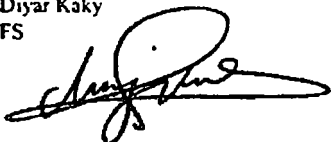
Schlumberger

Well Reference:

2, 25 S, 29 E, Eddy NM
N 32.16365 W -103.96330

I, Diyar Kaky certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of August 31, 2016 through September 14, 2017, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party Corrected surveys from a depth of 509.00 feet to a depth of 20401.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA, Inc. for the Corral Fly 02-01 State 33H Well (Original Hole) API No. 3001544587 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Diyar Kaky
FS



Subscribed and Sworn to before me this 8th day of October (month) 2018 (yr)

My Commission expires:

2-16-2022

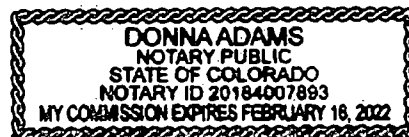
D. Adams

Notary Public

Adams County Colorado

(County State)

(signature)



Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0-20445 MD Survey Geodetic Report



(Def Survey)

Report Date:	September 17, 2018 - 10:36 AM
Client:	OMX
Field:	NM Eddy County (NAD 83)
Structure / Slot:	Oxy Corral Fly 02-01 State 33H / Corral Fly 02-01 State 33H
Well:	Corral Fly 02-01 State 33H
Borehole:	Unknown / Unknown
UWI / API#:	Unknown / Unknown
Survey Name:	Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0-20445 MD
Survey Date:	September 05, 2018
Ton / AHD / DD / ERD Ratio:	267.236' / 11487.198' h / 5.782' / 1.107
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long:	N 32° 9' 49.13429" W 103° 57' 47.91098"
CRS Grid Convergence Angle:	0.1970 °
Grid Scale Factor:	0.99992411
Version / Patch:	2.10.740.0
Local Coord Referenced To:	North
North:	6.7816 °
Well Head	

Comments	RKB	MD	Incl	Azimuth	TVD	VSEC	NS	EW	DLS	Northings	Eastings	Latitude	Longitude
	(m)	(m)	(°)	(°)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(N/S - °)	(E/W - °)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	26.50	26.50	0.00	0.00	224.92	100.50	0.00	-0.02	-0.02	0.00	0.00	0.00	0.00
	100.50	100.50	0.04	0.00	224.92	100.50	0.00	-0.02	-0.02	0.00	0.00	0.00	0.00
	166.86	166.86	0.19	0.00	272.76	186.86	0.08	0.00	0.00	0.00	0.00	0.00	0.00
	367.37	367.37	0.51	0.00	272.76	367.37	0.18	0.00	0.00	0.00	0.00	0.00	0.00
	367.37	367.37	0.29	0.48	367.37	367.37	0.18	0.00	0.00	0.00	0.00	0.00	0.00
	509.50	509.50	0.73	0.56	509.50	509.50	1.04	0.00	0.00	0.00	0.00	0.00	0.00
	601.00	601.00	0.56	0.67	600.99	600.99	1.28	0.00	0.00	0.00	0.00	0.00	0.00
	688.00	688.00	0.66	0.66	687.99	687.99	1.64	0.00	0.00	0.00	0.00	0.00	0.00
	780.00	780.00	0.86	0.86	779.98	779.98	2.34	0.00	0.00	0.00	0.00	0.00	0.00
	873.00	873.00	1.00	0.97	872.97	872.97	3.06	0.00	0.00	0.00	0.00	0.00	0.00
	965.00	965.00	1.25	0.97	964.95	964.95	3.69	0.00	0.00	0.00	0.00	0.00	0.00
	1058.00	1058.00	1.73	1.03	1057.92	1057.92	4.54	0.00	0.00	0.00	0.00	0.00	0.00
	1152.00	1152.00	1.86	1.03	1151.88	1151.88	5.19	0.00	0.00	0.00	0.00	0.00	0.00
	1247.00	1247.00	2.18	1.03	1246.83	1246.83	5.84	0.00	0.00	0.00	0.00	0.00	0.00
	1340.00	1340.00	2.18	1.03	1339.77	1339.77	6.49	0.00	0.00	0.00	0.00	0.00	0.00
	1430.00	1430.00	1.71	1.03	1429.72	1429.72	7.14	0.00	0.00	0.00	0.00	0.00	0.00
	1525.00	1525.00	0.17	1.03	1524.71	1524.71	7.79	0.00	0.00	0.00	0.00	0.00	0.00
	1619.00	1619.00	0.10	1.03	1618.71	1618.71	8.44	0.00	0.00	0.00	0.00	0.00	0.00
	1715.00	1715.00	0.10	1.03	1714.71	1714.71	9.09	0.00	0.00	0.00	0.00	0.00	0.00
	2274.00	2274.00	0.10	1.03	2273.71	2273.71	10.65	0.00	0.00	0.00	0.00	0.00	0.00
	2180.00	2180.00	0.05	1.03	2179.71	2179.71	10.70	0.00	0.00	0.00	0.00	0.00	0.00
	2086.00	2086.00	0.10	1.03	2085.71	2085.71	10.77	0.00	0.00	0.00	0.00	0.00	0.00
	1991.00	1991.00	0.10	1.03	1990.71	1990.71	10.88	0.00	0.00	0.00	0.00	0.00	0.00
	1897.00	1897.00	0.05	1.03	1896.71	1896.71	10.92	0.00	0.00	0.00	0.00	0.00	0.00
	1802.00	1802.00	0.04	1.03	1801.71	1801.71	10.99	0.00	0.00	0.00	0.00	0.00	0.00
	1697.00	1697.00	0.05	1.03	1696.71	1696.71	11.08	0.00	0.00	0.00	0.00	0.00	0.00
	1592.00	1592.00	0.10	1.03	1591.71	1591.71	11.17	0.00	0.00	0.00	0.00	0.00	0.00
	1487.00	1487.00	0.10	1.03	1486.71	1486.71	11.26	0.00	0.00	0.00	0.00	0.00	0.00
	1382.00	1382.00	0.10	1.03	1381.71	1381.71	11.35	0.00	0.00	0.00	0.00	0.00	0.00
	1277.00	1277.00	0.10	1.03	1276.71	1276.71	11.44	0.00	0.00	0.00	0.00	0.00	0.00
	1172.00	1172.00	0.10	1.03	1171.71	1171.71	11.53	0.00	0.00	0.00	0.00	0.00	0.00
	1067.00	1067.00	0.10	1.03	1066.71	1066.71	11.62	0.00	0.00	0.00	0.00	0.00	0.00
	962.00	962.00	0.10	1.03	961.71	961.71	11.71	0.00	0.00	0.00	0.00	0.00	0.00
	857.00	857.00	0.10	1.03	856.71	856.71	11.80	0.00	0.00	0.00	0.00	0.00	0.00
	752.00	752.00	0.10	1.03	751.71	751.71	11.89	0.00	0.00	0.00	0.00	0.00	0.00
	647.00	647.00	0.10	1.03	646.71	646.71	11.98	0.00	0.00	0.00	0.00	0.00	0.00
	542.00	542.00	0.10	1.03	541.71	541.71	12.07	0.00	0.00	0.00	0.00	0.00	0.00
	437.00	437.00	0.10	1.03	436.71	436.71	12.16	0.00	0.00	0.00	0.00	0.00	0.00
	332.00	332.00	0.10	1.03	331.71	331.71	12.25	0.00	0.00	0.00	0.00	0.00	0.00
	227.00	227.00	0.10	1.03	226.71	226.71	12.34	0.00	0.00	0.00	0.00	0.00	0.00
	122.00	122.00	0.10	1.03	121.71	121.71	12.43	0.00	0.00	0.00	0.00	0.00	0.00
	17.00	17.00	0.10	1.03	16.71	16.71	12.52	0.00	0.00	0.00	0.00	0.00	0.00
	12.00	12.00	0.10	1.03	11.71	11.71	12.61	0.00	0.00	0.00	0.00	0.00	0.00
	7.00	7.00	0.10	1.03	6.71	6.71	12.70	0.00	0.00	0.00	0.00	0.00	0.00
	2.00	2.00	0.10	1.03	1.71	1.71	12.79	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	12.88	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	12.97	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.06	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.15	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.24	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.33	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.42	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.51	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.60	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.69	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.78	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.87	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	13.96	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.05	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.14	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.23	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.32	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.41	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.50	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.59	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.68	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.77	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.86	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	14.95	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.04	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.13	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.22	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.31	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.40	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.49	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.58	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.67	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.76	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.85	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	15.94	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.03	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.12	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.21	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.30	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.39	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.48	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.10	1.03	0.71	0.71	16.57	0.00	0				

[illegible]

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	19271.00	87.77	89.59	10335.54	9166.88	-1160.92	9094.08	0.86	422306.36	664930.27	N 32 9 37.33 W 103 56 2.17	
	19365.00	87.42	89.56	10339.48	9260.13	-1160.22	9187.99	0.37	422307.06	665024.18	N 32 9 37.33 W 103 56 1.08	
	19460.00	87.46	89.20	10343.73	9354.32	-1159.20	9282.89	0.38	422308.08	665119.07	N 32 9 37.34 W 103 55 59.97	
	19555.00	86.80	91.08	10348.48	9448.62	-1159.43	9377.77	2.10	422307.85	665213.94	N 32 9 37.33 W 103 55 58.87	
	19649.00	88.08	89.30	10352.68	9541.97	-1159.74	9471.67	2.33	422307.54	665307.83	N 32 9 37.32 W 103 55 57.78	
	19744.00	87.63	89.69	10356.24	9636.20	-1158.90	9566.60	0.63	422308.38	665402.75	N 32 9 37.33 W 103 55 56.67	
	19838.00	87.80	89.40	10359.99	9729.45	-1158.16	9660.52	0.36	422309.12	665496.67	N 32 9 37.33 W 103 55 55.58	
	19932.00	87.35	89.30	10363.96	9822.65	-1157.09	9754.43	0.49	422310.19	665590.57	N 32 9 37.34 W 103 55 54.49	
	20026.00	88.01	90.09	10367.77	9915.92	-1156.59	9848.35	1.09	422310.69	665684.48	N 32 9 37.34 W 103 55 53.40	
	20120.00	88.49	89.27	10370.64	10009.23	-1156.07	9942.30	1.01	422311.21	665778.43	N 32 9 37.34 W 103 55 52.30	
	20215.00	88.80	89.86	10372.89	10103.52	-1155.35	10037.27	0.70	422311.93	665873.39	N 32 9 37.35 W 103 55 51.20	
	20310.00	88.04	89.22	10375.51	10197.80	-1154.58	10132.23	1.05	422312.70	665968.34	N 32 9 37.35 W 103 55 50.09	
Bottom Perf	20320.00	88.05	89.24	10375.85	10207.71	-1154.45	10142.23	0.21	422312.83	665978.34	N 32 9 37.35 W 103 55 49.98	
Cross												
Final MWD	20401.00	88.11	89.40	10378.56	10288.04	-1153.49	10223.18	0.21	422313.79	666059.28	N 32 9 37.36 W 103 55 49.04	
Survey												
Proj to Bit	20445.00	88.11	89.40	10380.01	10331.69	-1153.03	10267.15	0.00	422314.25	666103.25	N 32 9 37.36 W 103 55 48.52	

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000 NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0- 20445' MD
	1	26.500	26.500	Act Stns	30.000	30.000 NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0- 20445' MD
	1	26.500	386.500	Act Stns	30.000	30.000 NAL_NSG+MSHOT	Original Borehole / Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0- 20445' MD
	1	386.500	20445.000	Act Stns	30.000	30.000 NAL_MWD_IFR1+MS	Original Borehole / Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0-

...Corral Fly 02-01 State 33H\Original Borehole\Oxy Corral Fly 02-01 33H - Gyro + MWD FDIR 0-20445' MD

Schlumberger

OXY



Borehole:		Well:		Field:		Structure:		
Original Borehole		Corral Fly 02-01 State 33H		NM Eddy County (NAD 83)		Oxy Corral Fly 02-01 State 33H		
Gravity & Magnetic Parameters				Surface Location		Miscellaneous		
Model:	MOGM 2018	Dip:	53.912°	Date:	05-Sep-2018	NAD83 New Mexico State Plane, Eastern Zone, US Feet		
MagDec:	6.979°	FS:	47340.25mT	Gravity FS:	988.459mgm (9.80665 Based)	Lat:	N 32 9 48.13	
						Northng:	423487.181NUS	
						Lon:	W 103 57 47.91	
						Eastng:	650825.91NUS	
						Grid Conv:	0.187°	
						Scale Fact:	0.99992411	
						Blot:	Corral Fly 02-01	
						TVD Ref:	RKB=26.5'(32021.6ft above MSL)	
						Plan:	Oxy Corral Fly 02-01 33H - Gyro - MWD FDR 0-20445' MD	
Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	
Last Gyro	386.50	0.48	69.81	386.49	1.30	0.80	1.39	0.00
KOP Actual	9634.00	13.26	191.24	9537.10	66.49	-902.38	-34.79	1.11
Top Perf Cross	10376.00	62.70	100.07	10079.94	355.95	-1217.24	221.02	1.51
Wolfcamp Intersection	10573.00	76.70	86.17	10158.99	534.29	-1217.42	400.47	14.48
Bottom Perf Cross	20320.00	88.05	89.24	10375.85	10207.71	-1154.45	10142.23	16.74
Final MWD Survey	20401.00	88.11	89.40	10378.56	10288.04	-1153.49	10223.18	0.21
Proj to Bit	20445.00	88.11	89.40	10380.01	10331.69	-1153.03	10287.15	0.21
								0.00

