

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)

NM OIL CONSERVATION
ARTESIA DISTRICT

Schlumberger

JAN 09 2019

RECEIVED

30-015-44590

Well Reference:

2, 25S, 29E, Eddy NM
N 32.15528 W -103.96295

I, Dom Nolfi certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of July 22, 2018 through September 07, 2018, conduct or supervise the taking of the Extreme/SlimPulse & Third Party Corrected surveys from a depth of 502.00 feet to a depth of 20257.00 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 36H Well (Original Hole) API No. 30-015-44590 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
Dom Nolfi
FS



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

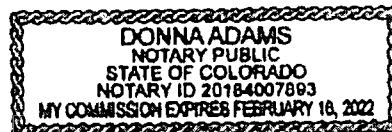
My Commission expires:

2-16-2022

D. Adams
Notary Public

(signature)

Adams County Colorado
(County State)



Schlumberger

OXY

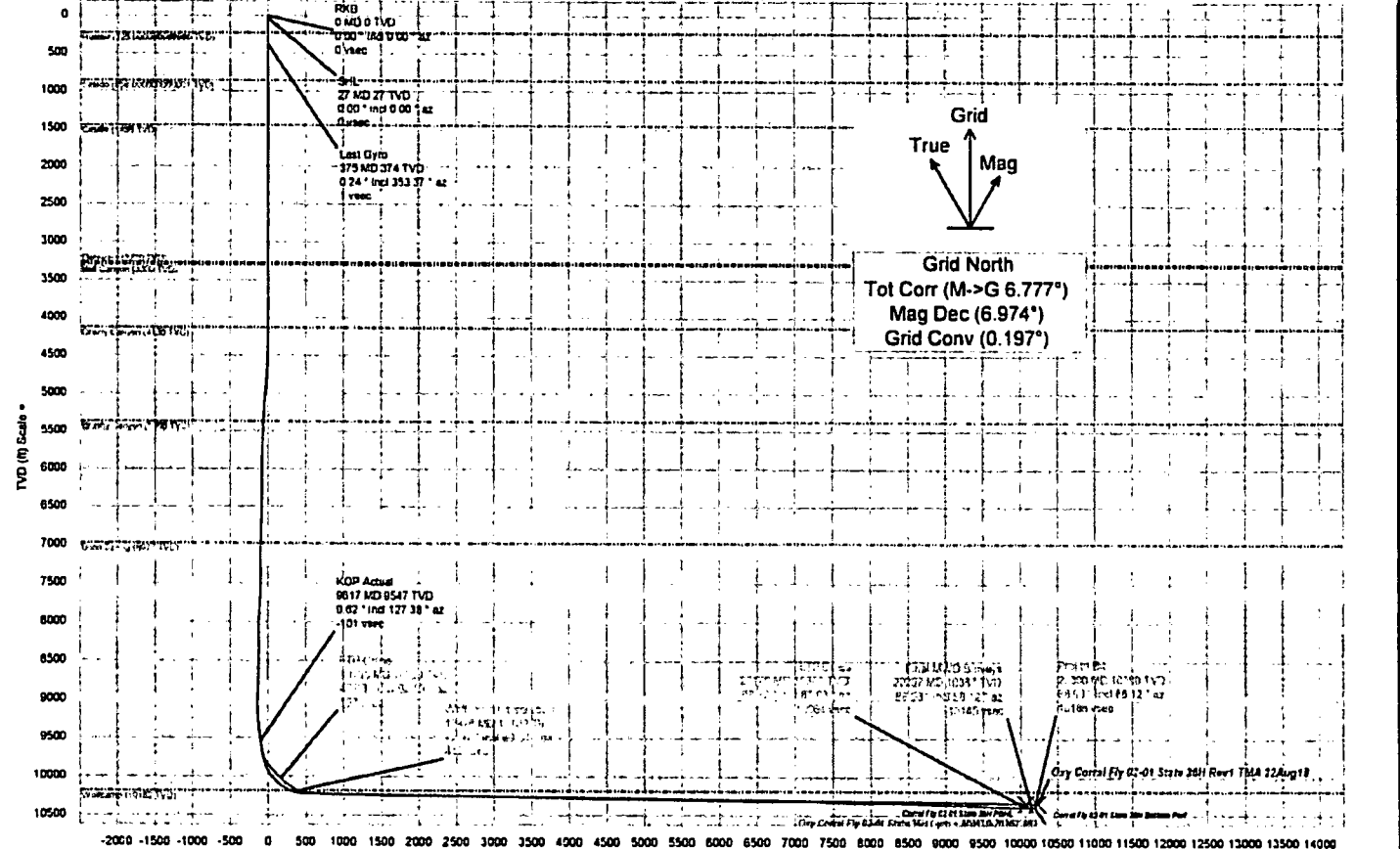
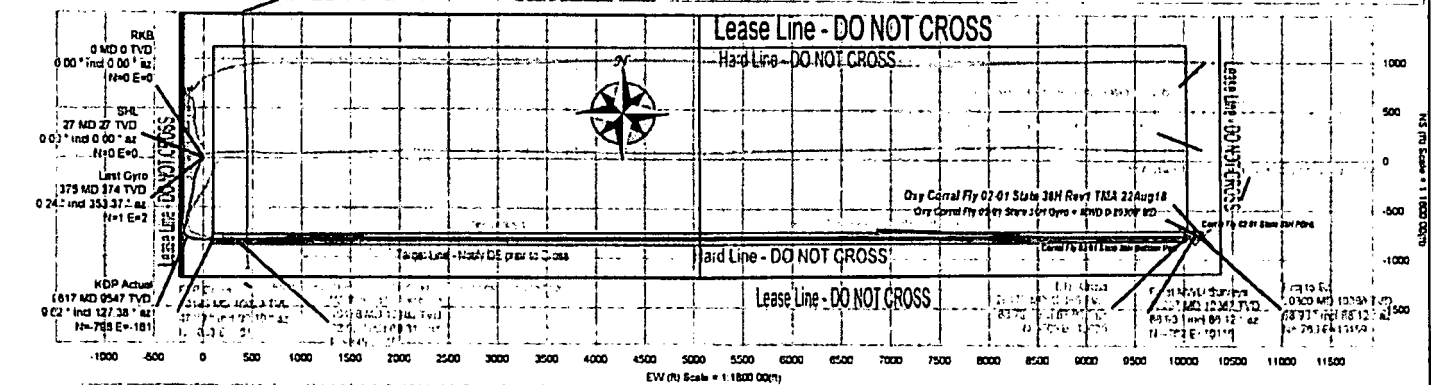


Borehole: Original Borehole Well: Corral Fly 02-01 State 36H Field: NM Eddy County (NAD 83) Structure: Oxy Corral Fly 02-01 State 36H

Gravity & Magnetic Parameters
 Model: MAGM 2018 Op: 53 901 Date: 25-Aug-2018 Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 MagDec: 6.97° FS: 47949.4216 Gravity FS: 998.45m/s² (9.80665 Based) Lat: N 32 9 19.01 Northing: 425423.16629 Grid Conv: 0.1971
 Easting: 658457.81025 Scale Fact: 0.8992416 Plan: Oxy Corral Fly 02-01 State 36H Oxy + SHVD 0.25300' MD

Critical Points

Critical Point	MD	DICL	AZIM	TVD	VSEC	N(°)S(°)	E(°)W(°)	DLS
RKB	0.00	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	0.00
Last Gyro	374.50	0.24	353.37	374.49	1.43	1.26	1.53	0.45
KOP Actual	9617.00	9.62	127.38	9547.01	-101.27	-797.59	-161.25	2.07
FTP Cross	10183.00	47.63	92.19	10029.24	182.65	-833.34	100.74	6.64
Wellcamp Intersection	10478.00	72.97	89.31	10181.80	412.18	-845.42	350.07	9.83
LTP Cross	20175.00	88.72	87.83	10384.85	10063.06	-764.75	10034.57	1.25
Final MWD Surveys	20257.00	88.93	88.12	10386.90	10145.12	-781.88	10116.46	1.22
Proj to Bit	20300.00	88.93	88.12	10387.70	10187.86	-760.27	10159.45	0.00



Vertical Section (ft) Azim = 94.28° Scale = 1:2300 00ft Origin = ON-D, 0E/W

Oxy Corral Fly 02-01 State 36H Gyro + MWD 0-20300' MD Survey Geodetic Report

(Def Survey)



Report Date: September 10, 2018 - 09:02 AM
 Client: OXY
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Oxy Corral Fly 02-01 State 36H / Corral Fly 02-01 State 36H
 Well: Corral Fly 02-01 State 36H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Oxy Corral Fly 02-01 State 36H Gyro + MWD 0-20300' MD
 Survey Date: August 23, 2018
 Tort / AHD / ODI / ERD Ratio: 244.324' / 11188.985 ft / 0.728 / 1.077
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 9' 19.0044" W 103° 57' 48.8287"
 Location Grid N/E Y/R: N 420423.150 NUS, E 655057.590 NUS
 CRS Grid Convergence Angle: 0.1871°
 Grid Scale Factor: 0.99992414
 Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 94.280° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 1063.900 ft above MSL
 Seabed / Ground Elevation: 1034.400 ft above MSL
 Magnetic Declination: 8.974°
 Total Gravity Field Strength: 998.454mgm (9.80665 Based)
 Gravity Model: OARM
 Total Magnetic Field Strength: 47960.421 nT
 Magnetic Dip Angle: 59.901°
 Declination Date: August 23, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.1871°
 Total Corr Mag North-Grid: 6.7772°
 North: Well Head

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100m)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	420423.15	655057.59	N 32° 9' 19.01"	W 103° 57' 48.83"
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	420423.15	655057.59	N 32° 9' 19.01"	W 103° 57' 48.83"
	66.50	0.48	51.39	66.50	0.12	0.10	0.13	1.20	420423.25	655057.72	N 32° 9' 19.01"	W 103° 57' 48.83"
	97.50	0.50	57.04	97.50	0.33	0.26	0.35	0.17	420423.41	655057.94	N 32° 9' 19.01"	W 103° 57' 48.83"
	158.50	0.40	35.80	158.50	0.65	0.58	0.69	0.32	420423.73	655058.28	N 32° 9' 19.01"	W 103° 57' 48.82"
	189.50	0.50	44.98	189.50	0.79	0.70	0.85	0.40	420423.91	655058.44	N 32° 9' 19.01"	W 103° 57' 48.82"
	276.50	0.35	78.88	276.49	1.30	1.08	1.38	0.33	420424.23	655058.97	N 32° 9' 19.02"	W 103° 57' 48.81"
	339.50	0.09	333.08	339.49	1.46	1.16	1.55	0.81	420424.31	655059.14	N 32° 9' 19.02"	W 103° 57' 48.81"
Left Gyro	374.50	0.24	353.37	374.49	1.43	1.26	1.53	0.45	420424.41	655059.12	N 32° 9' 19.02"	W 103° 57' 48.81"
	302.00	0.29	325.85	301.99	1.18	1.79	1.32	0.11	420424.94	655059.91	N 32° 9' 19.02"	W 103° 57' 48.81"
	622.00	0.07	75.41	621.99	1.06	2.06	1.21	0.27	420425.21	655059.80	N 32° 9' 19.03"	W 103° 57' 48.81"
	687.00	0.04	149.49	686.99	1.11	2.05	1.28	0.11	420425.20	655059.83	N 32° 9' 19.03"	W 103° 57' 48.81"
	688.00	0.02	41.37	687.99	1.18	2.02	1.32	0.03	420425.17	655059.81	N 32° 9' 19.03"	W 103° 57' 48.81"
	859.00	0.04	60.32	858.99	1.20	2.05	1.38	0.02	420425.17	655059.85	N 32° 9' 19.03"	W 103° 57' 48.81"
	1031.00	0.00	270.38	1030.99	1.18	2.05	1.34	0.11	420425.21	655059.93	N 32° 9' 19.03"	W 103° 57' 48.81"
	1229.00	0.11	97.44	1228.99	1.20	2.04	1.41	0.10	420425.19	655059.90	N 32° 9' 19.03"	W 103° 57' 48.81"
	1410.00	0.02	67.89	1409.99	1.40	2.03	1.61	0.05	420425.18	655059.20	N 32° 9' 19.03"	W 103° 57' 48.81"
	1600.00	0.11	323.28	1599.99	1.37	2.19	1.54	0.06	420425.34	655059.12	N 32° 9' 19.03"	W 103° 57' 48.81"
	1695.00	0.04	209.62	1694.99	1.29	2.23	1.46	0.14	420425.38	655059.05	N 32° 9' 19.03"	W 103° 57' 48.81"
	1884.00	0.14	348.55	1883.99	1.20	2.40	1.39	0.09	420425.55	655058.98	N 32° 9' 19.03"	W 103° 57' 48.81"
	1980.00	0.00	280.53	1979.99	1.12	2.53	1.31	0.14	420425.86	655058.90	N 32° 9' 19.03"	W 103° 57' 48.81"
	2189.00	0.03	127.49	2188.99	1.09	2.50	1.28	0.08	420425.65	655058.87	N 32° 9' 19.03"	W 103° 57' 48.81"
	2359.00	0.06	149.18	2358.99	1.22	2.36	1.40	0.01	420425.51	655058.99	N 32° 9' 19.03"	W 103° 57' 48.81"
	2454.00	0.02	172.10	2453.99	1.25	2.30	1.43	0.04	420425.45	655059.02	N 32° 9' 19.03"	W 103° 57' 48.81"
	2643.00	0.04	287.47	2642.99	1.19	2.29	1.37	0.03	420425.44	655059.08	N 32° 9' 19.03"	W 103° 57' 48.81"
	2738.00	0.11	230.87	2737.99	1.09	2.24	1.28	0.10	420425.39	655058.83	N 32° 9' 19.03"	W 103° 57' 48.81"
	2833.00	0.04	263.63	2832.99	1.00	2.19	1.18	0.10	420425.34	655058.75	N 32° 9' 19.03"	W 103° 57' 48.82"
	3023.00	0.00	49.21	3022.99	1.00	2.27	1.17	0.05	420425.42	655058.78	N 32° 9' 19.03"	W 103° 57' 48.82"
	3118.00	0.06	179.85	3117.99	1.04	2.25	1.21	0.11	420425.40	655058.80	N 32° 9' 19.03"	W 103° 57' 48.81"
	3308.00	0.08	27.60	3307.99	1.09	2.24	1.26	0.06	420425.39	655058.85	N 32° 9' 19.03"	W 103° 57' 48.81"
	3498.00	0.06	162.14	3497.99	1.16	2.24	1.33	0.06	420425.39	655058.92	N 32° 9' 19.03"	W 103° 57' 48.81"
	3592.00	0.06	26.92	3591.99	1.20	2.23	1.37	0.12	420425.38	655058.96	N 32° 9' 19.03"	W 103° 57' 48.81"
	3687.00	0.06	207.41	3686.99	1.20	2.23	1.37	0.13	420425.38	655058.96	N 32° 9' 19.03"	W 103° 57' 48.81"
	3782.00	0.06	14.16	3781.99	1.19	2.24	1.38	0.13	420425.39	655058.95	N 32° 9' 19.03"	W 103° 57' 48.81"
	3971.00	0.06	206.73	3970.99	1.17	2.24	1.34	0.08	420425.39	655058.93	N 32° 9' 19.03"	W 103° 57' 48.81"
	4066.00	0.06	333.87	4065.99	1.12	2.24	1.30	0.11	420425.39	655058.89	N 32° 9' 19.03"	W 103° 57' 48.81"
	4161.00	0.05	194.90	4160.99	1.09	2.25	1.26	0.11	420425.40	655058.85	N 32° 9' 19.03"	W 103° 57' 48.81"
	4256.00	1.33	207.33	4255.98	0.85	1.23	0.75	1.35	420424.38	655058.34	N 32° 9' 19.02"	W 103° 57' 48.82"
	4391.00	3.15	205.16	4350.90	-0.71	-2.11	-0.87	1.92	420421.04	655056.72	N 32° 9' 18.99"	W 103° 57' 48.84"
	4448.00	4.84	207.99	4445.87	-3.25	-8.01	-3.88	1.79	420415.14	655053.73	N 32° 9' 18.93"	W 103° 57' 48.87"
	4541.00	6.29	209.71	4540.22	-7.10	-10.07	-8.32	1.54	420407.08	655049.27	N 32° 9' 18.85"	W 103° 57' 48.73"
	4636.00	7.17	209.39	4634.58	-11.85	-25.78	-13.81	0.93	420397.39	655043.78	N 32° 9' 18.75"	W 103° 57' 48.70"
	4731.00	7.93	209.33	4728.74	-17.14	-38.64	-19.93	0.80	420386.51	655037.66	N 32° 9' 18.64"	W 103° 57' 48.68"
	4826.00	9.32	208.53	4822.08	-23.07	-40.11	-28.81	1.47	420374.04	655030.78	N 32° 9' 18.52"	W 103° 57' 48.94"
	4921.00	10.70	208.55	4916.21	-29.88	-83.62	-34.70	1.45	420359.54	655022.89	N 32° 9' 18.38"	W 103° 57' 47.03"
	5110.00	10.52	204.12	5101.99	-42.93	-94.78	-50.14	0.44	420328.38	655007.45	N 32° 9' 18.07"	W 103° 57' 47.22"
	5205.00	10.58	203.07	5195.38	-48.88	-110.72	-57.10	0.21	420312.44	655000.49	N 32° 9' 17.01"	W 103° 57' 47.30"
	5298.00	10.59	201.58	5287.78	-54.02	-126.69	-63.66	0.30	420296.47	655003.94	N 32° 9' 17.76"	W 103° 57' 47.37"
	5489.00	10.48	199.72	5474.58	-61.81	-159.19	-75.90	0.19	420283.87	655001.69	N 32° 9' 17.43"	W 103° 57' 47.52"
	5583.00	10.48	197.78	5567.01	-68.08	-175.38	-81.40	0.38	420247.78	655007.20	N 32° 9' 17.27"	W 103° 57' 47.58"
	5773.00	10.09	160.85	5753.97	-74.02	-208.18	-89.81	0.68	420214.98	655004.91	N 32° 9' 16.78"	W 103° 57' 47.72"
	5868.00	10.41	188.81	5847.45	-75.65	-224.84	-92.69	0.51	420198.33	655002.54	N 32° 9' 16.45"	W 103° 57' 47.77"
	5963.00	10.36	187.05	5940.89	-76.74	-241.80	-95.05	0.34	420181.37	655000.46	N 32° 9' 16.28"	W 103° 57' 47.79"
	6058.00	10.34	187.00	6034.35	-77.58	-258.74	-97.14	0.02	420164.43	655000.46	N 32° 9' 16.11"	W 103° 57' 47.81"
	6152.00	10.37	185.69	6126.82	-78.17	-275.53	-99.01	0.25	420147.64	655000.46	N 32° 9' 15.94"	W 103° 57' 47.83"
	6248.00	10.54	185.92	6221.22	-78.83	-292.86	-100.77	0.18	420130.31	655000.46	N 32° 9' 15.77"	W 103° 57' 47.85"
	6342.00	10.59	184.61	6313.63	-79.93	-310.02	-102.35	0.26	420113.15	655000.46	N 32° 9' 15.60"	W 103° 57' 47.87"
	6437.00	10.32	186.33	6407.05	-79.28	-327.18	-103.99	0.43	420096.00	655000.46	N 32° 9' 15.43"	W 103° 57' 47.89"
	6527.00	10.43	181.19	6503.95	-81.98	-360.97	-109.20	0.48	420082.21	655000.46	N 32° 9' 15.26"	W 103° 57' 47.91"
	6722.00	10.32	192.69	6687.40	-84.24	-377.70	-112.74	0.31	420045.48	655044.88	N 32° 9' 15.27"	W 103° 57' 47.98"
	6912.00	9.85	195.16	6874.46	-89.80	-409.89	-120.73	0.34	420013.19	655036.87	N 32° 9' 14.95"	W 103° 57' 48.05"
	7007.00	10.39	199.81	6967.98	-93.59	-425.91	-125.73	1.00	419997.28	655031.87	N 32° 9' 14.80"	W 103° 57' 48.11"
	7101.00	10.62	197.34	7080.50	-97.88	-441.70	-131.01	0.58	419981.49	655026.59	N 32° 9' 14.64"	W 103° 57' 48.17"
	7196.00	9.70	188.08	7154.10	-109.08	-457.51	-134.60	1.70	419965.68	655023.00	N 32° 9' 14.48"	W 103° 57' 48.21"
	7292.00	9.66	178.60	7248.74	-99.83	-473.57	-135.55	1.65	419949.62	655022.05	N 32° 9' 14.33"	W 103° 57' 48.22"
	7387.00	9.89	173.11	7342.39	-97.50	-489.48	-134.40	0.98	419933.71	655021.20	N 32° 9' 14.17"	W 103° 57' 48.21"
	7482.00	10.13	160.91	7435.98	-95.46	-505.77	-133.58	1.49	419917.42	655024.02	N 32° 9' 14.01"	W 103° 57' 48.20"
	7577.00	7.92	105.81	7529.81	-96.28	-520.42	-135.49	3.37	419902.77	655022.11	N 32° 9' 13.86"	W 103° 57' 48.23"
	7672.00	6.45	213.12	7624.07	-106.16	-531.19	-140.19	2.74	419892.00	655017.41	N 32° 9' 13.78"	W 103° 57' 48.28"
	7767.00	6.76	221.21	7718.44	-106.09	-539.87	-146.79	1.03	419883.33	655010.81	N 32° 9' 13.67"	W 103° 57' 48.38"
	7862.00	6.60	211.78	7812.80	-111.97	-548.71	-153.35	1.17	419874.48	655004.25	N 32° 9' 13.58"	W 103° 57' 48.43"
	7957.00	6.71	201.42	7906.95	-116.02	-560.05	-158.05	2.65	419862.14	655000.46	N 32° 9' 13.38"	W 103° 57' 48.40"
	8052.00	0.06	188.09	8000.82	-119.23	-574.18	-162.54	2.19	419849.04	6550		

[illegible]

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLG (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)
	19156.00	89.11	92.50	10360.97	9050.15	-788.29	9016.48	1.02	419834.92	664973.35	N 32 9 10.89 W	103 56 1.78
	19251.00	89.93	91.56	10361.76	9145.07	-791.85	9111.40	1.31	419831.50	665068.26	N 32 9 10.85 W	103 56 0.68
	19346.00	88.80	88.85	10362.82	9239.82	-791.09	9200.38	3.09	419831.22	665163.26	N 32 9 10.84 W	103 55 59.58
	19441.00	87.42	87.77	10365.95	9334.24	-789.18	9301.29	1.84	419834.02	665258.15	N 32 9 10.87 W	103 55 58.47
	19537.00	87.14	88.09	10370.50	9429.55	-785.73	9397.11	0.44	419837.48	665353.97	N 32 9 10.90 W	103 55 57.36
	19632.00	87.97	88.54	10374.56	9523.95	-782.94	9491.99	0.99	419840.27	665448.84	N 32 9 10.92 W	103 55 56.25
	19727.00	88.45	87.79	10377.52	9618.38	-778.90	9588.89	0.94	419843.31	665543.73	N 32 9 10.95 W	103 55 55.15
	19822.00	89.04	88.42	10379.61	9712.78	-778.76	9681.81	0.91	419846.45	665638.65	N 32 9 10.98 W	103 55 54.05
	19917.00	89.18	88.29	10381.08	9807.27	-774.03	9778.78	0.20	419849.18	665733.59	N 32 9 11.00 W	103 55 52.94
	20012.00	88.97	87.58	10382.81	9901.67	-770.61	9871.89	0.78	419852.80	665828.51	N 32 9 11.03 W	103 55 51.84
	20107.00	89.49	88.20	10383.89	9996.07	-767.11	9966.62	0.85	419856.10	665923.43	N 32 9 11.06 W	103 55 50.73
LTP Cross	20175.00	88.72	87.83	10384.95	10083.66	-764.75	10034.87	1.25	419858.48	665997.37	N 32 9 11.09 W	103 55 49.94
	20202.00	88.42	87.88	10385.62	10090.47	-763.70	10061.54	1.25	419859.51	666018.34	N 32 9 11.09 W	103 55 49.83
Final MWD	20257.00	88.93	88.12	10386.90	10145.12	-761.88	10116.48	1.22	419861.53	666073.29	N 32 9 11.11 W	103 55 48.99
Surveys	20300.00	88.93	88.12	10387.70	10187.86	-760.27	10159.45	0.00	419862.84	666116.25	N 32 9 11.12 W	103 55 48.49
Proj to Bit												

Survey Type: Def Survey

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EQU 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 State 36H Gyro + MWD 0- 20300' MD
	1	26.500	26.500	Act Sns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Corral Fly 02-01 State 36H Gyro + MWD 0- 20300' MD
	1	26.500	374.500	Act Sns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Corral Fly 02-01 State 36H Gyro + MWD 0- Original Borehole / Oxy Corral Fly
	1	374.500	20300.000	Act Sns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Corral Fly 02-01 State 36H Gyro + MWD 0-

...Corral Fly 02-01 State 36H\Original Borehole\Oxy Corral Fly 02-01 State 36H Gyro + MWD 0-20300' MD