

Final Survey XTO James Ranch Unit DI 2 #194Y MWD Off to 25800ft Report

(Def Survey)

APR 22 2019

DISTRICT II-ARTESIA O.C.D.

Report Date: April 23, 2018 - 11:46 AM
 Client: XTO
 Field: NM Eddy County (NAD 27)
 Structure / Slot: XTO James Ranch Unit DI 2 #194Y / New Slot
 Well: James Ranch Unit DI 2 #194Y
 Borehole: James Ranch Unit DI 2 #194Y
 UWI / API#: Unknown / Unknown
 Survey Name: Final Survey XTO James Ranch Unit DI 2 #194Y MWD Off to 25800ft
 Survey Date: February 19, 2018
 Tort / AHD / DDI / ERD Ratio: 349.391' / 15665.130 ft / 7.111 / 1.434
 Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 21' 44.53751", W 103° 50' 10.20182"
 Location Grid N/E Y/X: N 495902.600 ftUS, E 653510.500 ftUS
 CRS Grid Convergence Angle: 0.2661°
 Grid Scale Factor: 0.99993608
 Version / Patch: 2.10.696.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 264.463° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3368.000 ft above MSL
 Seabed / Ground Elevation: 3343.000 ft above MSL
 Magnetic Declination: 7.086°
 Total Gravity Field Strength: 998.4607mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48134.607 nT
 Magnetic Dip Angle: 60.158°
 Declination Date: February 19, 2018
 Magnetic Declination Model: HDGM 2017
 North Reference: Grid North
 Grid Convergence Used: 0.2661°
 Total Corr Mag North->Grid North: 6.8202°
 Local Coord Referenced To: Well Head

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 ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	495902.60	653510.50	N 32 21 44.54	W 103 50 10.20
	25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	495902.60	653510.50	N 32 21 44.54	W 103 50 10.20
	169.00	0.07	282.00	169.00	0.08	0.02	-0.09	0.05	495902.62	653510.41	N 32 21 44.54	W 103 50 10.20
	199.00	0.60	187.00	199.00	0.14	-0.13	-0.12	2.03	495902.47	653510.38	N 32 21 44.54	W 103 50 10.20
	229.00	0.20	203.00	229.00	0.19	-0.34	-0.16	1.37	495902.26	653510.34	N 32 21 44.53	W 103 50 10.20
	263.00	0.30	165.00	263.00	0.21	-0.48	-0.16	0.55	495902.12	653510.34	N 32 21 44.53	W 103 50 10.20
	292.00	0.50	252.00	292.00	0.32	-0.59	-0.26	1.96	495902.01	653510.24	N 32 21 44.53	W 103 50 10.20
	351.00	0.20	198.00	351.00	0.61	-0.77	-0.54	0.70	495901.83	653509.96	N 32 21 44.53	W 103 50 10.21
	381.00	0.50	192.00	381.00	0.67	-0.95	-0.58	1.01	495901.65	653509.92	N 32 21 44.53	W 103 50 10.21
	472.00	0.50	246.00	471.99	1.17	-1.50	-1.03	0.50	495901.10	653509.47	N 32 21 44.52	W 103 50 10.21
	532.00	0.70	215.00	531.99	1.65	-1.90	-1.48	0.62	495900.70	653509.02	N 32 21 44.52	W 103 50 10.22
	628.00	0.70	216.00	627.98	2.42	-2.86	-2.16	0.01	495899.74	653508.34	N 32 21 44.51	W 103 50 10.23
	745.00	0.22	222.23	744.98	3.07	-3.60	-2.73	0.41	495899.00	653507.77	N 32 21 44.50	W 103 50 10.23
	840.00	0.22	206.54	839.98	3.30	-3.90	-2.93	0.06	495898.70	653507.57	N 32 21 44.50	W 103 50 10.24
	933.00	0.28	207.21	932.98	3.51	-4.26	-3.12	0.06	495898.34	653507.38	N 32 21 44.50	W 103 50 10.24
	1028.00	0.17	122.84	1027.98	3.53	-4.55	-3.11	0.33	495898.06	653507.39	N 32 21 44.49	W 103 50 10.24
	1122.00	0.32	108.13	1121.98	3.18	-4.70	-2.74	0.17	495897.90	653507.76	N 32 21 44.49	W 103 50 10.23
	1216.00	0.40	119.06	1215.97	2.67	-4.94	-2.20	0.11	495897.66	653508.30	N 32 21 44.49	W 103 50 10.23
	1311.00	0.11	179.80	1310.97	2.41	-5.20	-1.91	0.38	495897.40	653508.59	N 32 21 44.49	W 103 50 10.22
	1405.00	0.60	144.38	1404.97	2.17	-5.69	-1.63	0.55	495896.91	653508.87	N 32 21 44.48	W 103 50 10.22
	1498.00	0.56	132.65	1498.97	1.61	-6.40	-1.00	0.13	495896.20	653509.50	N 32 21 44.47	W 103 50 10.21
	1592.00	0.40	160.58	1591.96	1.23	-7.01	-0.56	0.30	495895.59	653509.94	N 32 21 44.47	W 103 50 10.21
	1686.00	0.45	167.08	1685.96	1.11	-7.68	-0.37	0.07	495894.92	653510.13	N 32 21 44.46	W 103 50 10.21
	1781.00	0.33	106.62	1780.96	0.81	-8.12	-0.02	0.43	495894.48	653510.48	N 32 21 44.46	W 103 50 10.20
	1875.00	0.30	171.04	1874.96	0.54	-8.44	0.28	0.36	495894.16	653510.78	N 32 21 44.45	W 103 50 10.20
	1970.00	0.24	58.99	1969.96	0.35	-8.59	0.49	0.47	495894.01	653510.99	N 32 21 44.45	W 103 50 10.20
	2064.00	0.45	102.07	2063.96	-0.18	-8.56	1.01	0.34	495894.04	653511.51	N 32 21 44.45	W 103 50 10.19
	2159.00	0.41	102.85	2158.95	-0.86	-8.72	1.71	0.04	495893.88	653512.21	N 32 21 44.45	W 103 50 10.18
	2253.00	0.40	130.42	2252.95	-1.41	-9.00	2.29	0.21	495893.60	653512.79	N 32 21 44.45	W 103 50 10.18
	2348.00	0.33	138.23	2347.95	-1.80	-9.42	2.72	0.09	495893.18	653513.22	N 32 21 44.44	W 103 50 10.17
	2442.00	0.20	140.91	2441.95	-2.05	-9.75	3.01	0.14	495892.85	653513.51	N 32 21 44.44	W 103 50 10.17
	2538.00	0.18	111.50	2537.95	-2.28	-9.94	3.25	0.10	495892.66	653513.75	N 32 21 44.44	W 103 50 10.16
	2632.00	0.25	244.58	2631.95	-2.22	-10.08	3.21	0.42	495892.52	653513.71	N 32 21 44.44	W 103 50 10.16
	2726.00	0.25	267.27	2725.95	-1.82	-10.18	2.82	0.10	495892.42	653513.32	N 32 21 44.44	W 103 50 10.17
	2821.00	0.11	308.42	2820.95	-1.55	-10.13	2.54	0.19	495892.47	653513.04	N 32 21 44.44	W 103 50 10.17
	2916.00	0.22	201.98	2915.94	-1.40	-10.24	2.40	0.29	495892.36	653512.90	N 32 21 44.44	W 103 50 10.17
	3009.00	0.43	153.21	3008.94	-1.44	-10.72	2.49	0.35	495891.88	653512.99	N 32 21 44.43	W 103 50 10.17
	3104.00	0.19	131.50	3103.93	-2.24	-11.69	3.39	0.85	495890.91	653513.89	N 32 21 44.42	W 103 50 10.16
	3198.00	1.34	119.65	3197.91	-3.81	-12.88	5.07	0.32	495889.72	653515.57	N 32 21 44.41	W 103 50 10.14
	3293.00	0.96	118.88	3292.89	-5.37	-13.82	6.74	0.40	495888.79	653517.24	N 32 21 44.40	W 103 50 10.12
	3388.00	1.21	134.63	3387.87	-6.67	-14.90	8.15	0.41	495887.70	653518.65	N 32 21 44.39	W 103 50 10.11
	3482.00	1.65	131.16	3481.85	-8.23	-16.49	9.87	0.48	495886.11	653520.37	N 32 21 44.37	W 103 50 10.09
	3576.00	1.76	128.93	3575.80	-10.19	-18.29	12.01	0.14	495884.31	653522.51	N 32 21 44.36	W 103 50 10.06
	3671.00	1.35	123.08	3670.77	-12.11	-19.82	14.09	0.46	495882.78	653524.58	N 32 21 44.34	W 103 50 10.04
	3766.00	0.80	127.98	3765.75	-13.46	-20.84	15.55	0.59	495881.76	653526.05	N 32 21 44.33	W 103 50 10.02
	3861.00	0.62	135.42	3860.74	-14.27	-21.61	16.43	0.21	495880.99	653526.93	N 32 21 44.32	W 103 50 10.01
	3957.00	0.64	121.67	3956.74	-15.02	-22.26	17.25	0.16	495880.34	653527.75	N 32 21 44.32	W 103 50 10.00
	4051.00	0.40	86.05	4050.73	-15.77	-22.52	18.02	0.42	495880.09	653528.52	N 32 21 44.31	W 103 50 9.99
	4145.00	1.03	144.52	4144.73	-16.52	-23.18	18.84	0.95	495879.42	653529.34	N 32 21 44.31	W 103 50 9.98
	4240.00	1.35	149.52	4239.71	-17.42	-24.84	19.91	0.35	495877.76	653530.40	N 32 21 44.29	W 103 50 9.97
	4336.00	1.24	158.47	4335.68	-18.18	-26.78	20.86	0.24	495875.82	653531.36	N 32 21 44.27	W 103 50 9.96
	4430.00	1.32	155.94	4429.66	-18.80	-28.72	21.68	0.10	495873.89	653532.17	N 32 21 44.25	W 103 50 9.95
	4525.00	1.16	150.73	4524.64	-19.54	-30.55	22.59	0.21	495872.05	653533.09	N 32 21 44.23	W 103 50 9.94
	4619.00	0.84	155.85	4618.62	-20.14	-32.01	23.34	0.35	495870.59	653533.84	N 32 21 44.22	W 103 50 9.93
	4714.00	0.65	132.86	4713.61	-20.72	-33.02	24.02	0.37	495869.59	653534.52	N 32 21 44.21	W 103 50 9.92
	4808.00	0.92	144.62	4807.61	-21.45	-33.99	24.85	0.33	495868.61	653535.34	N 32 21 44.20	W 103 50 9.91
	4903.00	1.01	143.87	4902.59	-22.26	-35.29	25.78	0.10	495867.31	653536.28	N 32 21 44.19	W 103 50 9.90
	4998.00	0.89	143.42	4997.58	-23.06	-36.56	26.71	0.13	495866.04	653537.21	N 32 21 44.17	W 103 50 9.89
	5093.00	0.78	167.48	5092.57	-23.52	-37.78	27.29	0.38	495864.82	653537.79	N 32 21 44.16	W 103 50 9.89
	5187.00	0.90	151.50	5186.56	-23.89	-39.06	27.79	0.28	495863.55	653538.28	N 32 21 44.15	W 103 50 9.88
	5282.00	1.35	147.26	5281.54	-24.69	-40.65	28.75	0.48	495861.95	653539.25	N 32 21 44.13	W 103 50 9.87
	5377.00	1.94	149.95	5376.50	-25.87	-42.99	30.16	0.63	495859.62	653540.66	N 32 21 44.11	W 103 50 9.85
	5472.00	1.31	153.26	5471.46	-26.93	-45.35	31.45	0.67	495857.25	653541.95	N 32 21 44.09	W 103 50 9.84
	5566.00	1.20	155.38	5565.44	-27.64	-47.20	32.34	0.13	495855.40	653542.84	N 32 21 44.07	W 103 50 9.83
	5661.00	1.31	153.93	5660.42	-28.35	-49.08	33.24	0.12	495853.52	653543.73	N 32 21 44.05	W 103 50 9.82
	5755.00	1.31	152.34	5754.39	-29.13	-51.00	34.21	0.04	495851.60	653544.71	N 32 21 44.03	W 103 50 9.81
	5850.00	1.28	132.05	5849.37	-30.25	-52.67	35.50	0.48	495849.93	653546.00	N 32 21 44.01	W 103 50 9.79
	5944.00	1.35	137.39	5943.34	-31.63	-54.19	37.03	0.15	495848.41	653547.53	N 32 21 44.00	W 103 50 9.77
	6039.00	0.90	162.96	6038.33	-32.45	-55.73	38.01	0.70	495846.88	653548.50	N 32 21 43.98	W 103 50 9.76
	6134.00	0.96	190.34	6133.31	-32.38	-57.22	38.08	0.47	495845.38	653548.58	N 32 21 43.97	W 103 50 9.76
	6228.00	0.89	193.11	6227.30	-31.93	-58.71	37.77	0.09	495843.89	653548.27	N 32 21 43.95	W 103 50 9.76
	6323.00	0.85	160.88	6322.29	-31.86	-60.09	37.84	0.51	495842.51	653548.33	N 32 21 43.94	W 103 50 9.76
	6417.00	0.79	164.88	6416.28	-32.13	-61.38	38.23	0.09	495841.23	653548.73	N 32 21 43.93	W 103 50 9.76
	6512.00	0.80	184									

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6889.00	1.16	169.25	6888.22	-32.68	-68.74	39.49	0.38	495833.87	653549.99	N 32 21 43.86	W 103 50 9.75
	6984.00	1.25	175.80	6983.20	-32.74	-70.72	39.75	0.17	495831.89	653550.25	N 32 21 43.84	W 103 50 9.74
	7079.00	1.64	195.88	7078.17	-32.22	-73.06	39.45	0.67	495829.55	653549.95	N 32 21 43.81	W 103 50 9.75
	7173.00	1.88	184.83	7172.12	-31.45	-75.89	38.95	0.44	495826.72	653549.45	N 32 21 43.78	W 103 50 9.75
	7268.00	2.20	199.85	7267.06	-30.39	-79.15	38.20	0.85	495823.45	653548.70	N 32 21 43.75	W 103 50 9.76
	7363.00	2.42	200.62	7361.99	-28.72	-82.75	36.88	0.23	495819.86	653547.38	N 32 21 43.72	W 103 50 9.78
	7426.00	2.67	221.44	7424.93	-27.06	-85.09	35.44	1.51	495817.51	653545.94	N 32 21 43.69	W 103 50 9.79
	7458.00	2.91	222.15	7456.89	-25.92	-86.25	34.40	0.76	495816.35	653544.90	N 32 21 43.68	W 103 50 9.81
	7553.00	5.41	209.73	7551.63	-21.55	-91.93	30.56	2.78	495810.68	653541.06	N 32 21 43.63	W 103 50 9.85
	7648.00	7.56	204.57	7646.02	-15.83	-101.50	25.74	2.34	495801.10	653536.24	N 32 21 43.57	W 103 50 9.91
	7743.00	7.03	206.08	7740.25	-9.64	-112.41	20.59	0.59	495790.20	653531.08	N 32 21 43.42	W 103 50 9.97
	7836.00	5.78	202.83	7832.67	-4.44	-121.84	16.27	1.40	495780.77	653526.77	N 32 21 43.33	W 103 50 10.02
	7930.00	4.25	201.94	7926.31	-0.58	-129.43	13.13	1.63	495773.18	653523.63	N 32 21 43.26	W 103 50 10.06
	8025.00	6.01	217.08	8020.93	4.41	-136.66	8.81	2.32	495765.94	653519.31	N 32 21 43.18	W 103 50 10.11
	8120.00	6.86	219.91	8115.33	11.82	-144.98	2.18	0.95	495757.62	653512.68	N 32 21 43.10	W 103 50 10.18
	8214.00	5.97	218.45	8208.74	19.22	-153.12	-4.47	0.96	495749.49	653506.03	N 32 21 43.02	W 103 50 10.26
	8255.00	5.33	217.66	8249.54	22.00	-156.30	-6.96	1.57	495746.31	653503.55	N 32 21 42.99	W 103 50 10.29
9 5/8" Casing	8312.00	6.21	225.14	8306.25	26.20	-160.57	-10.76	2.02	495742.04	653499.74	N 32 21 42.95	W 103 50 10.34
	8434.00	8.31	235.45	8427.27	39.01	-170.22	-22.69	2.02	495732.39	653487.81	N 32 21 42.85	W 103 50 10.48
	8529.00	7.88	221.53	8521.33	49.78	-178.99	-32.67	2.11	495723.62	653477.84	N 32 21 42.77	W 103 50 10.59
	8624.00	8.48	214.32	8615.37	59.04	-189.65	-40.93	1.25	495712.96	653469.57	N 32 21 42.66	W 103 50 10.69
	8719.00	8.18	211.00	8709.37	67.55	-201.23	-48.36	0.60	495701.39	653462.14	N 32 21 42.55	W 103 50 10.78
	8813.00	7.82	207.26	8802.45	75.00	-212.64	-54.74	0.67	495689.97	653455.77	N 32 21 42.44	W 103 50 10.85
	8908.00	8.82	215.09	8896.45	83.24	-224.35	-61.88	1.59	495678.27	653448.62	N 32 21 42.37	W 103 50 10.94
	9002.00	8.34	214.74	8989.40	92.34	-235.85	-69.91	0.51	495666.77	653440.59	N 32 21 42.21	W 103 50 11.03
	9097.00	7.70	213.79	9083.47	100.83	-246.80	-77.38	0.69	495655.82	653433.13	N 32 21 42.10	W 103 50 11.12
	9191.00	7.83	218.06	9176.61	109.24	-257.07	-84.83	0.63	495645.54	653425.68	N 32 21 42.00	W 103 50 11.20
	9286.00	6.95	217.50	9270.82	117.62	-266.73	-92.32	0.93	495635.89	653418.19	N 32 21 41.90	W 103 50 11.29
	9380.00	6.44	218.72	9364.18	125.18	-275.35	-99.08	0.56	495627.26	653411.43	N 32 21 41.82	W 103 50 11.37
	9476.00	6.30	226.09	9459.59	133.07	-283.21	-106.24	0.86	495619.41	653404.27	N 32 21 41.74	W 103 50 11.46
	9570.00	7.08	218.21	9552.95	141.12	-291.34	-113.54	1.28	495611.28	653396.97	N 32 21 41.66	W 103 50 11.54
	9665.00	6.60	215.70	9647.27	148.76	-300.37	-120.35	0.60	495602.25	653390.16	N 32 21 41.57	W 103 50 11.62
	9760.00	5.09	212.24	9741.78	154.95	-308.37	-125.78	1.63	495594.25	653384.73	N 32 21 41.49	W 103 50 11.68
	9854.00	6.84	207.93	9835.26	160.59	-316.84	-130.63	1.92	495585.78	653379.88	N 32 21 41.41	W 103 50 11.74
	9949.00	6.60	205.48	9929.61	166.52	-326.77	-135.62	0.39	495575.85	653374.88	N 32 21 41.31	W 103 50 11.80
	10043.00	6.26	208.80	10023.02	172.19	-336.14	-140.42	0.54	495566.48	653370.09	N 32 21 41.22	W 103 50 11.86
	10113.00	6.06	211.31	10092.62	176.56	-342.64	-144.18	0.48	495559.98	653366.33	N 32 21 41.15	W 103 50 11.90
	10159.00	6.38	210.02	10138.35	179.51	-346.93	-146.72	0.76	495555.70	653363.79	N 32 21 41.11	W 103 50 11.93
	10191.00	7.53	209.02	10170.11	181.73	-350.30	-148.62	3.61	495552.32	653361.89	N 32 21 41.08	W 103 50 11.95
	10223.00	9.49	208.52	10201.76	184.40	-354.45	-150.90	6.13	495548.17	653359.61	N 32 21 41.04	W 103 50 11.98
	10254.00	11.75	209.15	10232.22	187.62	-359.45	-153.66	7.30	495543.17	653356.85	N 32 21 40.99	W 103 50 12.01
	10286.00	14.40	211.38	10263.39	191.87	-365.70	-157.32	8.43	495536.93	653353.19	N 32 21 40.93	W 103 50 12.06
	10317.00	16.58	212.45	10293.26	196.91	-372.72	-161.70	7.09	495529.90	653348.81	N 32 21 40.86	W 103 50 12.11
	10349.00	18.91	213.37	10323.74	202.97	-380.91	-167.00	7.33	495521.72	653343.51	N 32 21 40.78	W 103 50 12.17
	10380.00	20.37	216.44	10352.94	209.74	-389.44	-172.97	5.77	495513.18	653337.54	N 32 21 40.69	W 103 50 12.24
	10411.00	21.92	217.53	10381.85	217.30	-398.37	-179.70	5.16	495504.25	653330.81	N 32 21 40.60	W 103 50 12.32
	10443.00	23.54	219.80	10411.36	225.92	-408.02	-187.43	5.76	495494.61	653323.08	N 32 21 40.51	W 103 50 12.41
	10474.00	25.45	221.12	10439.57	235.17	-417.79	-195.77	6.41	495484.83	653314.74	N 32 21 40.41	W 103 50 12.51
	10505.00	28.21	219.64	10467.23	245.21	-428.46	-204.83	9.16	495474.17	653305.68	N 32 21 40.31	W 103 50 12.61
	10537.00	30.66	217.64	10495.10	256.16	-440.74	-214.64	8.25	495461.89	653295.87	N 32 21 40.19	W 103 50 12.73
	10568.00	33.43	218.81	10521.37	267.33	-453.84	-224.58	9.05	495448.79	653285.93	N 32 21 40.06	W 103 50 12.84
	10599.00	36.35	218.86	10546.80	279.27	-468.03	-235.21	9.42	495434.60	653275.30	N 32 21 39.92	W 103 50 12.97
	10631.00	39.28	218.67	10572.08	292.48	-483.75	-246.96	9.16	495418.88	653263.56	N 32 21 39.76	W 103 50 13.11
	10662.00	42.05	218.89	10595.59	306.08	-499.93	-259.05	8.95	495402.71	653251.47	N 32 21 39.60	W 103 50 13.25
	10694.00	44.36	217.66	10618.91	320.97	-517.35	-272.32	7.40	495385.28	653238.20	N 32 21 39.43	W 103 50 13.40
	10725.00	46.77	218.25	10640.61	336.20	-534.81	-285.93	7.89	495367.83	653224.58	N 32 21 39.26	W 103 50 13.56
	10756.00	49.52	219.98	10661.30	352.43	-552.71	-300.50	9.80	495349.92	653210.01	N 32 21 39.08	W 103 50 13.73
	10787.00	51.75	222.14	10680.96	369.85	-570.78	-316.25	8.99	495331.86	653194.27	N 32 21 38.90	W 103 50 13.92
	10819.00	53.65	223.77	10700.35	388.91	-589.40	-333.60	7.19	495313.24	653176.92	N 32 21 38.72	W 103 50 14.12
	10850.00	55.51	225.18	10718.32	408.27	-607.42	-351.30	7.05	495295.22	653159.23	N 32 21 38.54	W 103 50 14.33
	10882.00	57.19	226.22	10736.05	429.04	-626.03	-370.36	5.91	495276.62	653140.16	N 32 21 38.36	W 103 50 14.55
	10913.00	58.78	227.18	10752.48	449.82	-644.05	-389.49	5.76	495258.59	653121.03	N 32 21 38.18	W 103 50 14.78
	10945.00	60.72	227.67	10768.60	471.88	-662.75	-409.85	6.21	495239.89	653100.68	N 32 21 38.00	W 103 50 15.02
	10976.00	62.57	228.44	10783.32	493.84	-680.98	-430.14	6.36	495221.66	653080.39	N 32 21 37.82	W 103 50 15.25
	11008.00	64.13	228.70	10797.68	517.01	-699.91	-451.58	4.93	495202.74	653058.95	N 32 21 37.63	W 103 50 15.50
	11040.00	65.87	229.13	10811.20	540.60	-718.96	-473.44	5.57	495183.68	653037.09	N 32 21 37.44	W 103 50 15.76
	11071.00	67.59	229.90	10823.45	563.94	-737.45	-495.10	6.00	495165.20	653015.43	N 32 21 37.26	W 103 50 16.01
	11102.00	68.66	231.43	10835.00	587.85	-755.69	-517.35	5.73	495146.96	652993.18	N 32 21 37.08	W 103 50 16.27
	11134.00	70.15	232.69	10846.25	613.14	-774.10	-540.98	5.94	495128.55	652969.56	N 32 21 36.90	W 103 50 16.55
	11165.00	71.64	234.15	10856.40	638.24	-791.55	-564.50	6.55	495111.10	652946.04	N 32 21 36.73	W 103 50 16.83
	11197.00	73.00	235.66	10866.12	664.76	-809.08	-589.44	6.19	495093.57	652921.10	N 32 21 36.56	W 103 50 17.12
	11228.00	74.28	236.82	10874.85	690.96	-825.61	-614.17	5.47	495077.05	652896.37	N 32 21 36.40	W 103 50 17.41
	11260.00	75.26	238.57	10883.26	718.53	-842.11	-640.27	6.10	495060.55	652870.27	N 32 21 36.23	W 103 50 17.71
	11292.00	76.48	240.69	10891.07	746.69	-857.79	-667.04	7.47	495044.86	652843.50	N 32 21 36.08	W 103 50 18.02
	11323.00	77.29	242.93	10898.11	774.55	-872.06	-693.65	7.51	495030.60	652816.90	N 32 21 35.94	W 103 50 18.34
	11355.00	78.61	244.81	10904.79	803.85	-885.84	-721.74	7.07	495016.82	652788.80	N 32 21 35.81	W 103 50 18.66
	11386.00	79.69	246.56	10910.62	832.67							

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	14063.00	90.41	269.83	10898.52	3467.06	-1437.55	-3343.96	0.59	494465.15	650166.76	N 32 21 30.46	W 103 50 49.26
	14157.00	89.57	269.31	10898.54	3560.69	-1438.25	-3437.96	1.05	494464.44	650072.77	N 32 21 30.46	W 103 50 50.36
	14252.00	88.17	268.70	10900.41	3655.37	-1439.90	-3532.92	1.61	494462.79	649977.87	N 32 21 30.45	W 103 50 51.46
	14347.00	89.85	268.13	10902.05	3750.13	-1442.53	-3627.87	1.87	494460.16	649882.87	N 32 21 30.43	W 103 50 52.57
	14441.00	91.26	267.95	10901.14	3843.94	-1445.75	-3721.81	1.51	494456.95	649788.94	N 32 21 30.40	W 103 50 53.67
	14536.00	92.21	269.33	10898.27	3938.64	-1448.00	-3816.73	1.76	494454.70	649694.02	N 32 21 30.38	W 103 50 54.77
	14630.00	90.30	268.36	10896.21	4032.33	-1449.89	-3910.69	2.28	494452.80	649600.07	N 32 21 30.37	W 103 50 55.87
	14725.00	90.64	268.75	10895.43	4127.09	-1452.29	-4005.65	0.54	494450.41	649505.11	N 32 21 30.35	W 103 50 56.98
	14819.00	93.56	269.62	10891.98	4220.70	-1453.63	-4099.57	3.24	494449.07	649411.20	N 32 21 30.34	W 103 50 58.07
	14914.00	91.86	268.20	10887.49	4315.30	-1455.43	-4194.44	2.33	494447.26	649316.34	N 32 21 30.33	W 103 50 59.18
	14999.00	91.29	269.87	10885.16	4399.99	-1456.86	-4279.39	2.08	494445.83	649231.39	N 32 21 30.32	W 103 51 0.17
	15094.00	91.35	271.40	10882.97	4484.41	-1455.81	-4374.36	1.61	494446.89	649136.43	N 32 21 30.33	W 103 51 1.27
	15189.00	90.79	271.36	10881.19	4568.71	-1453.52	-4469.31	0.59	494449.17	649041.48	N 32 21 30.36	W 103 51 2.38
	15283.00	90.22	270.98	10880.36	4652.06	-1451.60	-4563.29	0.73	494451.09	648947.51	N 32 21 30.38	W 103 51 3.48
	15377.00	89.66	271.63	10880.46	4735.39	-1449.46	-4657.27	0.91	494453.23	648853.54	N 32 21 30.41	W 103 51 4.57
	15470.00	91.12	271.24	10879.83	4818.69	-1447.13	-4750.23	1.62	494455.56	648760.58	N 32 21 30.43	W 103 51 5.66
	15565.00	91.51	271.47	10877.65	4901.98	-1444.89	-4845.18	0.48	494457.81	648665.64	N 32 21 30.46	W 103 51 6.76
	15660.00	91.01	271.29	10875.56	5006.27	-1442.60	-4940.13	0.56	494460.09	648570.70	N 32 21 30.49	W 103 51 7.87
	15755.00	91.57	271.80	10873.42	5150.52	-1440.04	-5035.07	0.80	494462.66	648475.76	N 32 21 30.52	W 103 51 8.98
	15850.00	91.18	270.86	10871.14	5244.81	-1437.84	-5130.02	1.07	494464.86	648380.82	N 32 21 30.54	W 103 51 10.08
	15944.00	89.89	270.73	10870.26	5338.23	-1436.53	-5224.00	1.38	494466.16	648286.84	N 32 21 30.56	W 103 51 11.18
	16040.00	88.93	269.28	10871.25	5433.77	-1436.52	-5319.99	1.81	494466.17	648190.86	N 32 21 30.56	W 103 51 12.30
	16134.00	88.38	268.65	10873.46	5527.46	-1438.22	-5413.95	0.89	494464.47	648096.91	N 32 21 30.55	W 103 51 13.39
	16247.00	89.89	267.35	10875.17	5620.22	-1442.16	-5506.86	1.76	494460.53	647994.00	N 32 21 30.52	W 103 51 14.71
	16342.00	86.47	265.84	10878.18	5715.09	-1447.80	-5601.63	3.93	494454.89	647899.24	N 32 21 30.46	W 103 51 15.81
	16437.00	87.59	266.00	10883.10	5809.93	-1454.55	-5706.26	1.19	494448.15	647794.62	N 32 21 30.40	W 103 51 16.92
	16532.00	89.44	265.67	10885.57	5904.87	-1461.45	-5810.97	1.98	494441.25	647699.91	N 32 21 30.34	W 103 51 18.02
	16626.00	91.62	265.22	10884.70	6018.85	-1468.91	-5904.67	2.37	494433.78	647606.22	N 32 21 30.27	W 103 51 19.11
	16721.00	92.58	266.11	10881.22	6113.76	-1476.09	-5999.33	1.38	494426.61	647511.57	N 32 21 30.20	W 103 51 20.22
	16816.00	90.62	267.99	10878.56	6208.62	-1480.97	-6094.16	2.86	494421.72	647416.74	N 32 21 30.16	W 103 51 21.32
	16910.00	91.35	269.51	10876.95	6302.34	-1483.02	-6188.12	1.79	494419.67	647322.79	N 32 21 30.14	W 103 51 22.42
	17005.00	92.92	269.46	10873.41	6396.90	-1483.88	-6283.04	1.65	494418.82	647227.87	N 32 21 30.14	W 103 51 23.53
	17099.00	94.21	269.61	10867.56	6490.35	-1484.64	-6376.86	1.38	494418.06	647134.06	N 32 21 30.13	W 103 51 24.62
	17194.00	92.13	272.21	10862.31	6584.59	-1483.13	-6471.69	3.50	494419.57	647039.24	N 32 21 30.15	W 103 51 25.73
	17288.00	90.50	272.56	10860.15	6677.67	-1479.22	-6565.58	1.77	494423.48	646945.36	N 32 21 30.20	W 103 51 26.82
	17383.00	90.34	273.33	10859.46	6771.62	-1474.34	-6660.45	0.83	494428.36	646850.49	N 32 21 30.25	W 103 51 27.93
	17477.00	91.01	273.01	10858.35	6864.53	-1469.14	-6754.30	0.79	494433.55	646756.65	N 32 21 30.30	W 103 51 29.02
	17572.00	87.87	272.24	10859.28	6958.56	-1464.79	-6849.18	3.40	494437.90	646661.77	N 32 21 30.35	W 103 51 30.13
	17666.00	88.88	271.19	10861.94	7051.76	-1461.98	-6943.10	1.55	494440.72	646567.86	N 32 21 30.38	W 103 51 31.22
	17761.00	89.94	269.91	10862.92	7146.22	-1461.07	-7038.09	1.75	494441.63	646472.89	N 32 21 30.39	W 103 51 32.33
	17856.00	90.67	268.94	10862.41	7240.86	-1462.02	-7133.08	1.28	494440.68	646377.88	N 32 21 30.39	W 103 51 33.43
	17950.00	89.33	268.79	10862.41	7334.58	-1463.88	-7227.06	1.43	494438.81	646283.92	N 32 21 30.38	W 103 51 34.53
Section Line 26/27	18018.00	89.73	269.72	10862.97	7402.34	-1464.77	-7295.05	1.49	494437.93	646215.93	N 32 21 30.37	W 103 51 35.32
	18045.00	89.89	270.09	10863.06	7429.22	-1464.81	-7322.05	1.49	494437.88	646188.93	N 32 21 30.37	W 103 51 35.64
	18140.00	88.94	269.43	10864.03	7523.81	-1465.21	-7417.04	1.22	494437.49	646093.95	N 32 21 30.37	W 103 51 36.75
	18234.00	90.34	269.01	10864.62	7617.48	-1466.49	-7511.03	1.55	494436.21	645999.97	N 32 21 30.36	W 103 51 37.84
	18328.00	88.60	268.25	10865.49	7711.22	-1468.74	-7604.99	2.02	494433.96	645906.01	N 32 21 30.34	W 103 51 38.94
	18423.00	90.62	269.00	10866.14	7805.96	-1471.02	-7699.96	2.27	494431.68	645811.05	N 32 21 30.33	W 103 51 40.04
	18519.00	90.56	268.00	10865.15	7901.72	-1473.53	-7795.92	1.04	494429.17	645715.10	N 32 21 30.31	W 103 51 41.16
	18613.00	90.62	267.88	10864.18	7995.54	-1476.91	-7889.85	0.14	494425.79	645621.17	N 32 21 30.28	W 103 51 42.26
	18707.00	90.17	268.57	10863.53	8089.33	-1479.82	-7983.80	0.88	494422.88	645527.22	N 32 21 30.25	W 103 51 43.35
	18802.00	90.50	270.63	10862.98	8183.95	-1480.48	-8078.79	2.20	494422.22	645432.24	N 32 21 30.25	W 103 51 44.46
	18897.00	88.77	269.78	10863.58	8278.46	-1480.14	-8173.79	2.03	494422.56	645337.25	N 32 21 30.26	W 103 51 45.57
	18992.00	90.39	270.02	10864.28	8373.03	-1480.31	-8268.78	1.72	494422.39	645242.26	N 32 21 30.27	W 103 51 46.68
	19086.00	88.99	270.26	10864.79	8466.57	-1480.08	-8362.78	1.51	494422.62	645148.27	N 32 21 30.27	W 103 51 47.77
	19181.00	92.07	272.28	10863.91	8560.88	-1477.97	-8457.73	3.88	494424.72	645053.32	N 32 21 30.29	W 103 51 48.88
	19276.00	93.98	274.37	10858.90	8654.60	-1472.47	-8552.43	2.98	494430.22	644958.63	N 32 21 30.35	W 103 51 49.98
	19371.00	95.04	273.21	10851.43	8748.05	-1466.21	-8646.93	1.65	494436.48	644864.14	N 32 21 30.42	W 103 51 51.08
	19465.00	89.16	273.37	10847.98	8840.84	-1460.82	-8740.67	6.26	494441.87	644770.41	N 32 21 30.47	W 103 51 52.18
	19556.00	90.28	272.19	10848.43	8930.87	-1456.41	-8831.56	1.79	494446.29	644679.52	N 32 21 30.52	W 103 51 53.23
	19650.00	91.07	272.49	10847.32	9023.98	-1452.57	-8925.47	0.90	494450.12	644585.62	N 32 21 30.56	W 103 51 54.33
	19744.00	89.33	271.20	10846.99	9117.20	-1449.55	-9019.42	2.30	494453.15	644491.68	N 32 21 30.60	W 103 51 55.42
	19839.00	89.94	271.11	10847.60	9211.55	-1447.63	-9114.40	0.65	494455.06	644396.71	N 32 21 30.62	W 103 51 56.53
	19933.00	90.62	270.99	10847.14	9304.92	-1445.91	-9208.38	0.73	494456.79	644302.73	N 32 21 30.64	W 103 51 57.63
	20028.00	91.40	270.72	10845.46	9399.32	-1444.49	-9303.35	0.87	494458.20	644207.76	N 32 21 30.66	W 103 51 58.73
	20123.00	89.16	269.38	10845.00	9493.86	-1444.41	-9398.34	2.75	494458.29	644112.78	N 32 21 30.66	W 103 51 59.84
	20217.00	90.62	269.58	10845.18	9587.49	-1445.26	-9492.34	1.57	494457.43	644018.79	N 32 21 30.66	W 103 52 0.94
	20312.00	91.57	269.73	10843.36	9682.09	-1445.83	-9587.32	1.01	494456.86	643923.82	N 32 21 30.66	W 103 52 2.04
	20406.00	89.94	269.34	10842.13	9775.71	-1446.60	-9681.30	1.78	494456.10	643829.84	N 32 21 30.65	W 103 52 3.14
	20501.00	89.78	268.80	10842.36	9870.40	-1448.14	-9776.29	0.59	494454.56	643734.86	N 32 21 30.64	W 103 52 4.25
	20595.00	90.22	268.55	10842.36	9964.15	-1450.31	-9870.26	0.54	494452.38	643640.89	N 32 21 30.63	W 103 52 5.34
	20689.00	90.73	268.33	10841.58	10057.92	-1452.87	-9964.22	0.59	494449.82	643546.93	N 32 21 30.60	W 103 52 6.44
	20784.00	91.57	268.42	10839.67	10152.67	-1455.56	-10059.17	0.89	494447.13	643452.00	N 32 21 30.58	W 103 52 7.55
	20879.00	89.89	267.47	10838.46	10247.49	-1458.97	-10154.09	2.03	494443.73	643357.08	N 32 21 30.55	W 103 52 8.65

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 ° ' ")
	23986.00	91.04	270.61	10817.72	13337.74	-1483.88	-13256.42	0.93	494418.82	640254.96	N 32 21 30.44	W 103 52 44.82
	24081.00	90.99	270.11	10816.04	13432.22	-1483.28	-13351.40	0.53	494419.41	640159.98	N 32 21 30.45	W 103 52 45.93
	24136.00	90.32	268.22	10815.41	13487.03	-1484.08	-13406.39	3.65	494418.61	640105.00	N 32 21 30.44	W 103 52 46.57
	24230.00	91.18	268.25	10814.18	13580.82	-1486.98	-13500.33	0.92	494415.72	640011.06	N 32 21 30.42	W 103 52 47.66
	24324.00	90.78	269.34	10812.57	13674.53	-1488.96	-13594.30	1.24	494413.74	639917.10	N 32 21 30.40	W 103 52 48.76
	24419.00	90.74	269.46	10811.31	13769.17	-1489.95	-13689.28	0.13	494412.75	639822.12	N 32 21 30.40	W 103 52 49.87
	24514.00	90.78	269.32	10810.05	13863.81	-1490.96	-13784.27	0.15	494411.74	639727.14	N 32 21 30.39	W 103 52 50.97
	24609.00	91.37	269.68	10808.27	13958.43	-1491.79	-13879.25	0.73	494410.91	639632.17	N 32 21 30.38	W 103 52 52.08
	24703.00	90.74	269.37	10806.54	14052.05	-1492.57	-13973.23	0.75	494410.13	639538.19	N 32 21 30.38	W 103 52 53.18
	24798.00	90.16	269.88	10805.80	14146.66	-1493.19	-14068.22	0.81	494409.51	639443.20	N 32 21 30.38	W 103 52 54.28
	24892.00	90.30	269.68	10805.42	14240.25	-1493.55	-14162.22	0.26	494409.15	639349.21	N 32 21 30.38	W 103 52 55.38
	24987.00	89.97	270.42	10805.19	14334.80	-1493.47	-14257.22	0.85	494409.23	639254.22	N 32 21 30.38	W 103 52 56.49
	25081.00	90.19	270.61	10805.08	14428.28	-1492.62	-14351.22	0.31	494410.07	639160.23	N 32 21 30.40	W 103 52 57.58
	25176.00	90.23	270.66	10804.71	14522.73	-1491.57	-14446.21	0.07	494411.13	639065.24	N 32 21 30.41	W 103 52 58.69
	25270.00	90.23	270.69	10804.34	14616.17	-1490.46	-14540.20	0.03	494412.23	638971.25	N 32 21 30.43	W 103 52 59.79
	25365.00	89.99	270.60	10804.15	14710.62	-1489.40	-14635.20	0.27	494413.30	638876.27	N 32 21 30.44	W 103 53 0.89
	25459.00	90.12	270.62	10804.06	14804.08	-1488.39	-14729.19	0.14	494414.30	638782.28	N 32 21 30.45	W 103 53 1.99
	25554.00	90.01	270.64	10803.96	14898.53	-1487.35	-14824.19	0.12	494415.35	638687.29	N 32 21 30.47	W 103 53 3.10
	25649.00	90.08	270.59	10803.88	14992.98	-1486.33	-14919.18	0.09	494416.37	638592.30	N 32 21 30.48	W 103 53 4.20
Hard Line '367 FWL	25692.00	89.99	270.62	10803.86	15035.74	-1485.87	-14962.18	0.22	494416.82	638549.31	N 32 21 30.49	W 103 53 4.70
	25725.00	89.92	270.65	10803.88	15068.54	-1485.51	-14995.18	0.22	494417.19	638516.31	N 32 21 30.49	W 103 53 5.09
BHL, 249' FWL	25800.00	89.92	270.65	10803.99	15143.11	-1484.66	-15070.17	0.00	494418.04	638441.32	N 32 21 30.51	W 103 53 5.96

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 (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	25.000	1/98.425	12.250	9.625	NAL_MWD_1.0_DEG-Depth Only	James Ranch Unit DI 2 #194Y / Final Survey XTO James Ranch Unit DI 2 #194Y MWD Off to
	1	25.000	25.000	Act Stns	12.250	9.625	NAL_MWD_1.0_DEG-Depth Only	James Ranch Unit DI 2 #194Y / Final Survey XTO James Ranch Unit DI 2 #194Y MWD Off to
	1	25.000	8312.000	Act Stns	12.250	9.625	NAL_MWD_1.0_DEG	James Ranch Unit DI 2 #194Y / Final Survey XTO James Ranch James Ranch Unit DI 2 #194Y /
	1	8312.000	19465.000	Act Stns	8.750	5.500	NAL_MWD_1.0_DEG	Final Survey XTO James Ranch James Ranch Unit DI 2 #194Y /
	1	19465.000	25800.000	Act Stns	8.500	5.500	NAL_MWD_PLUS_0.5_DEG	Final Survey XTO James Ranch