

25-43415

Weatherford

Evaluation, Drilling & Intervention
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HOBBS OCD

XTO Energy
200 N Loraine, Ste 800
Midland, TX 79701

JUL 05 2018

Date: 12-5-2017

RECEIVED

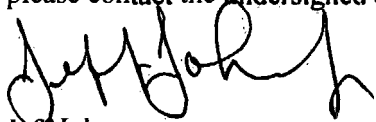
Attention: Colin Gilmore

Re: XTO Energy
Well: Severus 31 Federal Com 1H
Lea County, New Mexico

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Well Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Mike McDonough MWD Supervisor	1H	30 MD 19103 MD	10/13/2017 11/27/2017	Measurement While Drilling

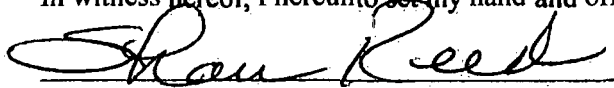
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

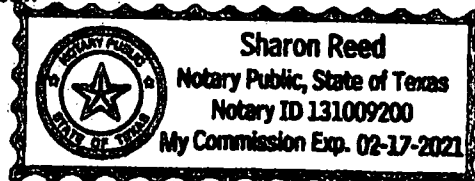


Jeff Johnson
MWD Ops Coordinator

On this, the 5th day of December, 2017, before me a notary public, the undersigned officer, personally appeared Jeff Johnson, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.


Notary Public



**5D Survey Report****XTO Energy**

Field Name: *XTO Lea Co, NM (NAD 27 NME)*
Site Name: *Severus 31 Federal Com 8 Well Pad*
Well Name: *Severus 31 Federal Com 1H*
Survey: *Definitive survey*

27 November 2017





Severus 31 Federal Com 1H

Field Name:	Map Units: US ft		Company Name: XTO Energy
XTO Lea. Co. NM (NAD 27 NME)	Vertical Reference Datum (VRD): Mean Sea Level		
	Projected Coordinate System: NAD27 / New Mexico East		
	Comment:		
Site:	Units: US ft	North Reference: Grid	Convergence Angle: 0.40
	Position:	Northing: 559895.40 US ft	Latitude: 32° 32' 13.56"
		Easting: 726703.50 US ft	Longitude: -103° 35' 51.75"
Severus 31 Federal Com 1H Well Pad	Elevation above MSL: 3699.00 US ft		
Slot:	Position (Relative to Site Centre)		
	+N/-S: 0.00 US ft	Northing: 559895.40 US ft	Latitude: 32° 32' 13.56"
	+E/-W: 0.00 US ft	Easting: 726703.50 US ft	Longitude: -103° 35' 51.75"
Severus 31 Federal Com 1H	Elevation above MSL: 3699.00 US ft		
Well:	Type: Main well	UWI:	
	File Number:	Comment:	
	Closure Distance: 7965.34 US ft	Closure Azimuth: 169.31°	
Severus 31 Federal Com 1H	Vertical Section: Position of Origin (Relative to Slot centre)		
	+N/-S: -0.00 US ft	+E/-W: -0.00 US ft	Az: 179.59°

Drill floor: Survey Name: Definitive Survey
Rig Height (Well TVD Reference): 30.00 US ft Elevation above MSL: 3729.00 US ft Inclination: 0.00° Azimuth: 0.00°

Survey Name: Definitive Survey				
Date: 03/Aug/2017	Survey Tool: See Survey Tool Ranges below.	Comment:	Company:	
Magnetic Model:				
Model Name: bggm2017	Date: 25/Sep/2017	Field Strength: 48180.0nT	Declination: 7.01°	Dip: 60.34°
Tie Point:				
MD: 0.00 US ft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 US ft	North Offset: -0.00 US ft East Offset: -0.00 US ft

Survey Tool Ranges:			
Name	Start MD(USft)	End MD(USft)	Source Survey
MWD	0.00	1532.00	WFT MWD SVY_1
MWD	1532.00	5122.00	WFT MWD SVY_2
MWD	5122.00	5399.00	WFT MWD SVY_3

5D Survey Report

Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
MWD	5399.00	8776.00	WFT MWD SVY_4
MWD	8776.00	10793.00	WFT MWD SVY_5
MWD	10793.00	11831.00	WFT MWD SVY_6
MWD	11831.00	14394.00	WFT MWD SVY_7
MWD	14394.00	19174.00	WFT MWD SVY_9

Casing Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)								
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Name
1601.00	0.81	181.14	1600.93	-3.92	-2.65	559891.48	726700.85	13 3/8 in
5467.00	11.45	85.94	5442.95	31.26	312.34	559926.66	727015.84	9 5/8 in

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DIS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	559895.40	726703.50	0.00	
30.00	0.00	0.00	30.00	-0.00	-0.00	-0.00	559895.40	726703.50	0.00	First WFT SVY
153.00	0.16	42.59	153.00	-0.13	0.13	0.12	559895.53	726703.62	0.13	
182.00	0.14	53.46	182.00	-0.18	0.18	0.17	559895.58	726703.67	0.12	
273.00	0.44	0.05	273.00	-0.59	0.59	0.26	559895.99	726703.76	0.41	
396.00	0.30	26.33	396.00	-1.35	1.35	0.40	559896.75	726703.90	0.18	
459.00	0.35	77.66	459.00	-1.54	1.54	0.67	559896.94	726704.17	0.45	
550.00	0.36	112.69	549.99	-1.48	1.49	1.20	559896.89	726704.70	0.24	
641.00	0.31	63.16	640.99	-1.48	1.49	1.68	559896.89	726705.18	0.31	
733.00	0.25	350.16	732.99	-1.79	1.80	1.87	559897.20	726705.37	0.37	
795.00	0.25	283.39	794.99	-1.96	1.97	1.72	559897.37	726705.22	0.44	
889.00	0.43	300.49	888.99	-2.19	2.19	1.21	559897.59	726704.71	0.22	
983.00	0.51	269.21	982.99	-2.36	2.37	0.49	559897.77	726703.99	0.28	
1077.00	0.55	272.65	1076.98	-2.38	2.38	-0.38	559897.78	726703.12	0.05	
1170.00	0.70	231.48	1169.98	-2.06	2.05	-1.27	559897.45	726702.23	0.50	
1264.00	0.50	214.34	1263.97	-1.37	1.35	-1.95	559896.75	726701.55	0.28	
1358.00	0.82	183.95	1357.97	-0.36	0.34	-2.23	559895.74	726701.27	0.49	
1452.00	1.16	186.77	1451.95	1.26	-1.27	-2.38	559894.13	726701.12	0.37	
1532.00	1.05	186.80	1531.94	2.79	-2.80	-2.57	559892.60	726700.93	0.14	
1601.00	0.81	181.14	1600.93	3.90	-3.92	-2.65	559891.48	726700.85	0.37	13 3/8 in
1648.00	0.66	175.01	1647.92	4.51	-4.53	-2.63	559890.87	726700.87	0.37	
1742.00	0.66	176.55	1741.92	5.59	-5.61	-2.55	559889.79	726700.95	0.02	
1836.00	0.63	177.19	1835.91	6.64	-6.66	-2.50	559888.74	726701.00	0.03	
1930.00	0.49	158.78	1929.91	7.54	-7.55	-2.33	559887.85	726701.17	0.24	
2024.00	0.40	139.67	2023.90	8.16	-8.18	-1.97	559887.22	726701.53	0.18	
2118.00	0.40	115.22	2117.90	8.56	-8.57	-1.46	559886.83	726702.04	0.18	
2212.00	0.51	129.80	2211.90	8.97	-8.98	-0.84	559886.42	726702.66	0.17	
2306.00	0.42	120.12	2305.90	9.41	-9.42	-0.22	559885.98	726703.28	0.13	
2399.00	0.31	113.81	2398.89	9.69	-9.69	0.30	559885.71	726703.80	0.13	
2493.00	0.29	121.56	2492.89	9.92	-9.92	0.74	559885.48	726704.24	0.05	
2587.00	0.31	112.12	2586.89	10.14	-10.14	1.18	559885.26	726704.68	0.06	
2681.00	0.63	92.65	2680.89	10.27	-10.26	1.93	559885.14	726705.43	0.38	
2775.00	1.06	79.08	2774.88	10.14	-10.11	3.30	559885.29	726706.80	0.50	
2870.00	1.76	65.22	2869.85	9.38	-9.34	5.49	559886.06	726708.99	0.81	
2964.00	2.02	64.85	2963.80	8.09	-8.03	8.30	559887.37	726711.80	0.28	
3058.00	2.25	58.45	3057.73	6.44	-6.36	11.37	559889.04	726714.87	0.35	
3152.00	2.89	66.62	3151.64	4.56	-4.45	15.12	559890.95	726718.62	0.78	
3245.00	2.48	60.98	3244.54	2.68	-2.55	19.03	559892.85	726722.53	0.52	
3339.00	2.48	65.64	3338.45	0.88	-0.72	22.66	559894.68	726726.16	0.21	
3433.00	2.46	52.25	3432.36	-1.17	1.35	26.11	559896.75	726729.61	0.61	
3527.00	2.43	42.91	3526.28	-3.84	4.05	29.06	559899.45	726732.56	0.42	
3621.00	2.17	60.69	3620.20	-6.15	6.38	31.97	559901.78	726735.47	0.80	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD, relative to Well,TVD Reference)										
ME (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (% 100US ft)	Comment
3715.00	3.10	82.40	3714.10	-7.33	7.59	36.04	559902.99	726739.54	1.43	
3808.00	4.20	80.40	3806.91	-8.19	8.49	41.89	559903.89	726745.39	1.19	
3902.00	5.81	79.54	3900.55	-9.57	9.92	49.96	559905.32	726753.46	1.71	
3996.00	7.65	85.59	3993.90	-10.83	11.27	60.88	559906.67	726764.38	2.10	
4089.00	8.17	88.01	4086.02	-11.45	11.98	73.66	559907.38	726777.16	0.66	
4183.00	8.35	85.71	4179.04	-12.09	12.72	87.14	559908.12	726790.64	0.40	
4277.00	9.40	86.27	4271.91	-13.00	13.73	101.61	559909.13	726805.11	1.12	
4371.00	9.67	87.08	4364.62	-13.79	14.63	117.15	559910.03	726820.65	0.32	
4465.00	10.33	85.23	4457.19	-14.78	15.73	133.43	559911.13	726836.93	0.78	
4559.00	10.50	85.05	4549.64	-16.10	17.17	150.36	559912.57	726853.86	0.18	
4652.00	10.16	83.08	4641.13	-17.70	18.89	166.95	559914.29	726870.45	0.53	
4746.00	10.02	83.22	4733.68	-19.54	20.86	183.30	559916.26	726886.80	0.15	
4840.00	10.26	87.05	4826.21	-20.82	22.25	199.78	559917.65	726903.28	0.76	
4934.00	10.19	86.97	4918.72	-21.57	23.12	216.45	559918.52	726919.95	0.08	
5028.00	10.04	87.85	5011.26	-22.20	23.87	232.94	559919.27	726936.44	0.23	
5122.00	10.66	84.65	5103.73	-23.20	24.99	249.78	559920.39	726953.28	0.90	
5216.00	10.66	83.64	5196.11	-24.85	26.76	267.08	559922.16	726970.58	0.20	
5310.00	10.34	83.69	5288.53	-26.62	28.65	284.10	559924.05	726987.60	0.34	
5399.00	9.99	84.74	5376.13	-28.09	30.24	299.73	559925.64	727003.23	0.44	
5467.00	11.45	85.94	5442.95	-29.02	31.26	312.34	559926.66	727015.84	2.17	9 5/8 in
5493.00	12.01	86.32	5468.40	-29.34	31.61	317.61	559927.01	727021.11	2.17	
5586.00	12.78	87.89	5559.23	-30.20	32.61	337.55	559928.01	727041.05	0.90	
5680.00	11.54	88.50	5651.12	-30.68	33.24	357.34	559928.64	727060.84	1.33	
5774.00	9.73	87.41	5743.51	-31.16	33.85	374.67	559929.25	727078.17	1.94	
5868.00	9.01	82.83	5836.25	-32.33	35.12	389.91	559930.52	727093.41	1.10	
5961.00	9.32	80.48	5928.06	-34.38	37.28	404.56	559932.68	727108.06	0.52	
6055.00	8.94	85.06	6020.87	-36.16	39.17	419.35	559934.57	727122.85	0.87	
6149.00	9.22	88.63	6113.70	-36.87	39.98	434.15	559935.38	727137.65	0.67	
6243.00	9.69	87.24	6206.42	-37.32	40.54	449.58	559935.94	727153.08	0.56	
6337.00	10.94	87.82	6298.90	-37.92	41.26	466.40	559936.66	727169.90	1.33	
6431.00	12.06	84.17	6391.01	-39.12	42.59	485.08	559937.99	727188.58	1.42	
6525.00	12.18	83.39	6482.92	-41.12	44.73	504.70	559940.13	727208.20	0.22	
6619.00	11.12	84.65	6574.98	-42.97	46.72	523.58	559942.12	727227.08	1.16	
6713.00	10.76	86.24	6667.27	-44.26	48.14	541.36	559943.54	727244.86	0.50	
6806.00	10.43	85.70	6758.69	-45.34	49.34	558.41	559944.74	727261.91	0.37	
6900.00	10.77	86.74	6851.08	-46.36	50.48	575.67	559945.88	727279.17	0.42	
6994.00	10.52	82.99	6943.46	-47.78	52.02	592.95	559947.42	727296.45	0.78	
7088.00	10.13	83.43	7035.94	-49.65	54.02	609.68	559949.42	727313.18	0.42	
7182.00	9.69	85.29	7128.54	-51.13	55.61	625.78	559951.01	727329.28	0.58	
7275.00	9.48	84.05	7220.24	-52.46	57.05	641.20	559952.45	727344.70	0.32	
7369.00	10.38	80.82	7312.83	-54.50	59.20	657.26	559954.60	727360.76	1.13	
7463.00	10.28	80.99	7405.31	-57.04	61.87	673.90	559957.27	727377.40	0.11	
7557.00	10.42	84.59	7497.78	-59.04	63.98	690.65	559959.38	727394.15	0.70	
7651.00	9.94	85.41	7590.30	-60.37	65.43	707.20	559960.83	727410.70	0.53	
7744.00	10.63	84.94	7681.81	-61.65	66.83	723.74	559962.23	727427.24	0.75	
7838.00	11.43	87.00	7774.07	-62.78	68.08	741.68	559963.48	727445.18	0.95	
7932.00	11.54	89.32	7866.19	-63.24	68.68	760.38	559964.08	727463.88	0.51	
8025.00	11.42	91.99	7957.33	-62.90	68.47	778.89	559963.87	727482.39	0.59	
8119.00	10.12	87.41	8049.67	-62.82	68.52	796.44	559963.92	727499.94	1.65	
8213.00	10.50	87.87	8142.15	-63.39	69.22	813.25	559964.62	727516.75	0.41	
8307.00	10.67	82.74	8234.56	-64.69	70.63	830.44	559966.03	727533.94	1.02	
8401.00	10.06	78.91	8327.02	-67.25	73.31	847.13	559968.71	727550.63	0.98	
8494.00	10.90	84.24	8418.47	-69.57	75.76	863.85	559971.16	727567.35	1.38	
8588.00	11.04	84.99	8510.76	-71.12	77.44	881.66	559972.84	727585.16	0.21	
8682.00	9.99	81.75	8603.18	-72.96	79.39	898.69	559974.79	727602.19	1.28	
8776.00	8.11	80.75	8696.00	-75.09	81.63	913.31	559977.03	727616.81	2.01	
8870.00	7.09	82.00	8789.17	-76.88	83.50	925.60	559978.90	727629.10	1.10	
8964.00	6.54	80.08	8882.51	-78.53	85.23	936.61	559980.63	727640.11	0.63	
9058.00	7.78	81.12	8975.78	-80.35	87.13	948.17	559982.53	727651.67	1.33	

5D Survey Report

Survey Points: (Relative to Slot centre) (TVD relative to Well TVD Reference)										
MD (US ft)	Log (ft)	As (ft)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	D/S (1/100US ft)	Comment
9152.00	10.56	81.48	9068.57	-82.50	89.39	962.98	559984.79	727666.48	2.96	
9246.00	12.89	80.74	9160.60	-85.33	92.36	981.85	559987.76	727685.35	2.48	
9340.00	13.23	84.64	9252.17	-87.87	95.05	1002.91	559990.45	727706.41	1.00	
9434.00	12.64	87.75	9343.78	-89.13	96.46	1023.90	559991.86	727727.40	0.97	
9528.00	12.02	87.75	9435.61	-89.77	97.25	1043.95	559992.65	727747.45	0.66	
9621.00	12.01	87.07	9526.58	-90.51	98.12	1063.29	559993.52	727766.79	0.15	
9715.00	12.46	83.58	9618.44	-92.00	99.75	1083.14	559995.15	727786.64	0.92	
9808.00	12.45	82.71	9709.25	-94.25	102.15	1103.05	559997.55	727806.55	0.20	
9902.00	12.23	84.13	9801.08	-96.41	104.45	1123.00	559999.85	727826.50	0.40	
9995.00	12.29	85.71	9891.96	-98.02	106.20	1142.67	560001.60	727846.17	0.37	
10089.00	10.78	86.95	9984.06	-99.10	107.42	1161.43	560002.82	727864.93	1.63	
10183.00	10.03	87.08	10076.51	-99.87	108.30	1178.38	560003.70	727881.88	0.80	
10277.00	9.98	79.96	10169.09	-101.59	110.14	1194.58	560005.54	727898.08	1.32	
10371.00	10.17	77.47	10261.64	-104.69	113.36	1210.70	560008.76	727914.20	0.51	
10465.00	9.84	76.31	10354.21	-108.28	117.06	1226.61	560012.46	727930.11	0.41	
10558.00	10.34	78.10	10445.77	-111.77	120.66	1242.49	560016.06	727945.99	0.63	
10652.00	10.87	83.38	10538.17	-114.41	123.42	1259.55	560018.82	727963.05	1.18	
10746.00	11.68	84.01	10630.35	-116.29	125.44	1277.82	560020.84	727981.32	0.87	
10793.00	11.56	84.43	10676.39	-117.18	126.39	1287.24	560021.79	727990.74	0.31	
10893.00	11.76	108.45	10774.38	-114.78	124.14	1306.89	560019.54	728010.39	4.82	
10924.00	12.78	131.56	10804.69	-111.47	120.86	1312.46	560016.26	728015.96	16.07	
10956.00	14.21	142.36	10835.81	-105.97	115.40	1317.50	560010.80	728021.00	9.04	
10987.00	15.21	143.21	10865.80	-99.67	109.13	1322.26	560004.53	728025.76	3.30	
11018.00	17.13	147.15	10895.57	-92.54	102.04	1327.18	559997.44	728030.68	7.13	
11050.00	20.36	153.72	10925.87	-83.55	93.09	1332.20	559988.49	728035.70	12.04	
11081.00	24.46	159.64	10954.53	-72.66	82.23	1336.82	559977.63	728040.32	15.08	
11112.00	27.62	159.19	10982.38	-59.89	69.49	1341.61	559964.89	728045.11	10.21	
11143.00	29.79	159.09	11009.57	-45.94	55.58	1346.91	559950.98	728050.41	7.00	
11174.00	30.30	161.32	11036.40	-31.30	40.97	1352.16	559936.37	728055.66	3.96	
11206.00	31.48	164.10	11063.87	-15.58	25.29	1357.04	559920.69	728060.54	5.79	
11237.00	34.33	165.80	11089.89	0.71	9.03	1361.40	559904.43	728064.90	9.66	
11268.00	38.40	166.66	11114.85	18.59	-8.82	1365.77	559886.58	728069.27	13.23	
11299.00	42.61	165.87	11138.41	38.18	-28.37	1370.56	559867.03	728074.06	13.68	
11331.00	45.09	165.56	11161.49	59.70	-49.86	1376.03	559845.54	728079.53	7.78	
11362.00	45.60	165.84	11183.28	81.11	-71.22	1381.47	559824.18	728084.97	1.77	
11394.00	49.22	170.40	11204.94	104.19	-94.27	1386.29	559801.13	728089.79	15.42	
11425.00	50.68	172.22	11224.88	127.67	-117.72	1389.87	559777.68	728093.37	6.51	
11456.00	52.89	171.85	11244.06	151.81	-141.84	1393.25	559753.56	728096.75	7.19	
11487.00	55.11	171.72	11262.28	176.66	-166.66	1396.83	559728.74	728100.33	7.17	
11519.00	57.52	171.23	11280.03	203.01	-193.00	1400.78	559702.40	728104.28	7.64	
11550.00	61.61	171.39	11295.73	229.46	-219.41	1404.82	559675.99	728108.32	13.20	
11581.00	66.13	171.41	11309.37	257.00	-246.92	1408.98	559648.48	728112.48	14.58	
11612.00	71.35	172.76	11320.61	285.63	-275.53	1412.95	559619.87	728116.45	17.32	
11644.00	75.77	174.10	11329.67	316.14	-306.01	1416.46	559589.39	728119.96	14.38	
11675.00	78.86	176.31	11336.47	346.29	-336.14	1418.98	559559.26	728122.48	12.15	
11706.00	79.96	177.05	11342.17	376.72	-366.56	1420.75	559528.84	728124.25	4.25	
11737.00	81.22	177.70	11347.24	407.28	-397.11	1422.15	559498.29	728125.65	4.56	
11769.00	83.22	177.76	11351.57	438.97	-428.79	1423.40	559466.61	728126.90	6.25	
11800.00	84.75	176.94	11354.82	469.77	-459.59	1424.83	559435.81	728128.33	5.59	
11831.00	89.16	177.56	11356.47	500.69	-490.50	1426.31	559404.90	728129.81	14.37	
11859.00	93.57	178.90	11355.80	528.67	-518.47	1427.18	559376.93	728130.68	16.46	
11953.00	95.81	181.95	11348.11	622.33	-612.14	1426.49	559283.26	728129.99	4.02	
12047.00	93.57	181.97	11340.43	715.93	-705.76	1423.28	559189.64	728126.78	2.38	
12141.00	93.07	180.70	11334.98	809.72	-799.58	1421.10	559095.82	728124.60	1.45	
12235.00	94.98	179.78	11328.38	903.48	-893.34	1420.70	559002.06	728124.20	2.25	
12329.00	93.77	180.83	11321.21	997.20	-987.06	1420.20	558908.34	728123.70	1.70	
12423.00	92.31	179.69	11316.23	1091.05	-1080.92	1419.78	558814.48	728123.28	1.97	
12517.00	90.91	180.14	11313.59	1185.01	-1174.88	1419.92	558720.52	728123.42	1.56	
12611.00	91.05	179.69	11311.98	1279.00	-1268.87	1420.06	558626.53	728123.56	0.50	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD(Reference))											Comment
ML (US ft)	In (in)	At (in)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DS (%100US ft)		
12705.00	90.91	180.23	11310.37	1372.98	-1362.85	1420.12	558532.55	728123.62	0.59		
12799.00	88.95	179.73	11310.49	1466.97	-1456.85	1420.15	558438.55	728123.65	2.15		
12893.00	91.05	178.59	11310.49	1560.96	-1550.83	1421.53	558344.57	728125.03	2.54		
12987.00	92.88	177.82	11307.26	1654.88	-1644.73	1424.47	558250.67	728127.97	2.11		
13081.00	92.10	178.87	11303.18	1748.76	-1738.60	1427.19	558156.80	728130.69	1.39		
13175.00	90.70	180.22	11300.88	1842.73	-1832.56	1427.93	558062.84	728131.43	2.07		
13268.00	89.09	181.02	11301.05	1935.71	-1925.55	1426.93	557969.85	728130.43	1.93		
13362.00	87.97	179.90	11303.47	2029.67	-2019.51	1426.17	557875.89	728129.67	1.68		
13455.00	88.95	180.32	11305.96	2122.63	-2112.48	1425.99	557782.92	728129.49	1.15		
13550.00	90.63	179.88	11306.31	2217.62	-2207.47	1425.83	557687.93	728129.33	1.83		
13643.00	89.58	179.77	11306.14	2310.62	-2300.47	1426.11	557594.93	728129.61	1.14		
13737.00	88.39	180.68	11307.81	2404.60	-2394.45	1425.74	557500.95	728129.24	1.59		
13831.00	87.97	180.19	11310.79	2498.54	-2488.40	1425.03	557407.00	728128.53	0.69		
13925.00	86.44	180.46	11315.38	2592.41	-2582.29	1424.50	557313.11	728128.00	1.65		
14019.00	87.34	180.13	11320.48	2686.27	-2676.15	1424.01	557219.25	728127.51	1.02		
14112.00	86.85	180.03	11325.19	2779.15	-2769.03	1423.88	557126.37	728127.38	0.54		
14206.00	86.28	178.97	11330.82	2872.97	-2862.85	1424.70	557032.55	728128.20	1.28		
14300.00	87.83	177.95	11335.65	2966.83	-2956.69	1427.22	556938.71	728130.72	1.97		
14394.00	88.60	177.14	11338.58	3060.72	-3050.56	1431.25	556844.84	728134.75	1.19		
14514.00	90.07	175.25	11339.97	3180.49	-3170.28	1439.21	556725.12	728142.71	2.00		
14610.00	92.24	177.22	11338.04	3276.30	-3266.04	1445.51	556629.36	728149.01	3.05		
14704.00	92.73	177.50	11333.96	3370.14	-3359.85	1449.84	556535.55	728153.34	0.60		
14798.00	92.45	179.30	11329.71	3464.02	-3453.71	1452.46	556441.69	728155.96	1.94		
14892.00	91.89	181.69	11326.15	3557.93	-3547.64	1451.65	556347.76	728155.15	2.61		
14986.00	90.28	181.32	11324.37	3651.86	-3641.58	1449.18	556253.82	728152.68	1.76		
15080.00	88.95	182.55	11325.01	3745.78	-3735.52	1446.01	556159.88	728149.51	1.93		
15173.00	87.97	181.98	11327.50	3838.64	-3828.42	1442.33	556066.98	728145.83	1.22		
15267.00	87.69	180.80	11331.06	3932.52	-3922.32	1440.06	555973.08	728143.56	1.29		
15361.00	87.84	180.23	11334.73	4026.44	-4016.24	1439.21	555879.16	728142.71	0.63		
15455.00	87.49	179.50	11338.56	4120.36	-4110.16	1439.43	555785.24	728142.93	0.86		
15549.00	89.44	178.78	11341.08	4214.32	-4204.11	1440.84	555691.29	728144.34	2.21		
15643.00	89.58	179.14	11341.88	4308.31	-4298.10	1442.55	555597.30	728146.05	0.41		
15737.00	89.65	179.42	11342.51	4402.30	-4392.09	1443.73	555503.31	728147.23	0.31		
15830.00	89.58	178.58	11343.14	4495.30	-4485.07	1445.35	555410.33	728148.85	0.91		
15924.00	89.72	177.23	11343.71	4589.25	-4579.00	1448.79	555316.40	728152.29	1.44		
16018.00	89.23	178.66	11344.57	4683.21	-4672.93	1452.16	555222.47	728155.66	1.61		
16112.00	89.23	178.05	11345.84	4777.18	-4766.89	1454.86	555128.51	728158.36	0.65		
16206.00	88.53	179.34	11347.67	4871.14	-4860.84	1457.00	555034.56	728160.50	1.56		
16299.00	88.39	178.51	11350.17	4964.10	-4953.79	1458.74	554941.61	728162.24	0.90		
16393.00	89.86	179.12	11351.61	5058.08	-5047.76	1460.69	554847.64	728164.19	1.69		
16486.00	90.21	180.88	11351.55	5151.07	-5140.75	1460.69	554754.65	728164.19	1.93		
16580.00	89.16	179.48	11352.07	5245.06	-5234.75	1460.39	554660.65	728163.89	1.86		
16674.00	88.81	178.79	11353.73	5339.05	-5328.72	1461.81	554566.68	728165.31	0.82		
16768.00	89.37	181.27	11355.23	5433.02	-5422.70	1461.76	554472.70	728165.26	2.70		
16862.00	89.30	180.38	11356.32	5526.99	-5516.69	1460.41	554378.71	728163.91	0.95		
16956.00	89.51	180.47	11357.29	5620.98	-5610.68	1459.71	554284.72	728163.21	0.24		
17050.00	88.60	179.66	11358.84	5714.96	-5704.66	1459.60	554190.74	728163.10	1.30		
17144.00	88.19	178.96	11361.48	5808.92	-5798.62	1460.73	554096.78	728164.23	0.86		
17238.00	88.15	177.51	11364.48	5902.85	-5892.52	1463.63	554002.88	728167.13	1.54		
17331.00	89.02	178.38	11366.78	5995.78	-5985.43	1466.96	553909.97	728170.46	1.32		
17425.00	89.44	179.21	11368.04	6089.76	-6079.40	1468.94	553816.00	728172.44	0.99		
17519.00	89.79	180.92	11368.67	6183.75	-6173.40	1468.83	553722.00	728172.33	1.86		
17613.00	89.37	180.76	11369.36	6277.72	-6267.38	1467.45	553628.02	728170.95	0.48		
17707.00	88.88	179.11	11370.80	6371.71	-6361.37	1467.56	553534.03	728171.06	1.83		
17800.00	88.67	178.55	11372.78	6464.68	-6454.33	1469.46	553441.07	728172.96	0.64		
17894.00	90.21	180.08	11373.70	6558.67	-6548.31	1470.58	553347.09	728174.08	2.31		
17988.00	90.63	180.55	11373.01	6652.66	-6642.31	1470.07	553253.09	728173.57	0.67		
18082.00	89.37	181.17	11373.01	6746.63	-6736.29	1468.65	553159.11	728172.15	1.49		
18176.00	89.37	181.05	11374.05	6840.59	-6830.27	1466.83	553065.13	728170.33	0.13		

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										Comment
ML (US ft)	In (°)	Az (°)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Eastng (US ft)	DLS (#/100US ft)	
18270.00	89.09	180.52	11375.31	6934.56	-6924.25	1465.55	552971.15	728169.05	0.64	
18363.00	88.81	180.77	11377.01	7027.53	-7017.23	1464.50	552878.17	728168.00	0.40	
18457.00	87.12	181.31	11380.35	7121.44	-7111.15	1462.79	552784.25	728166.29	1.89	
18551.00	87.20	181.39	11385.01	7215.28	-7205.01	1460.58	552690.39	728164.08	0.12	
18645.00	87.34	179.81	11389.49	7309.15	-7298.90	1459.60	552596.50	728163.10	1.69	
18739.00	87.35	179.30	11393.84	7403.05	-7392.79	1460.33	552502.61	728163.83	0.54	
18832.00	87.48	177.93	11398.04	7495.94	-7485.67	1462.57	552409.73	728166.07	1.48	
18926.00	87.69	177.92	11402.00	7589.82	-7579.52	1465.97	552315.88	728169.47	0.22	
19020.00	87.48	177.10	11405.96	7683.67	-7673.35	1470.05	552222.05	728173.55	0.90	
19103.00	87.55	176.99	11409.56	7766.51	-7756.16	1474.33	552139.24	728177.83	0.16	Last WFT SVY
19174.00	87.55	176.99	11412.59	7837.38	-7827.00	1478.05	552068.40	728181.55	0.00	PTB

Formation Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										Comment
ML (US ft)	In (°)	Az (°)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Eastng (US ft)	Name	
1568.07	0.93	184.20	1568.00	-3.42	-2.63	559891.98	726700.87		Rustler	
1919.09	0.50	161.41	1919.00	-7.46	-2.36	559887.94	726701.14		Salado	
3163.38	2.84	66.02	3163.00	-4.22	15.64	559891.18	726719.14		Base Salt	
3350.56	2.47	64.01	3350.00	-0.51	23.11	559894.89	726726.61		Yates	
3582.77	2.25	52.98	3582.00	5.57	30.74	559900.97	726734.24		Seven Rivers	
5666.60	11.72	88.41	5638.00	33.17	354.64	559928.57	727058.14		Delaware	
7087.04	10.13	83.43	7035.00	54.00	609.52	559949.40	727313.02		Brushy Canyon	
8755.79	8.51	81.00	8676.00	81.16	910.42	559976.56	727613.92		Bone Spring	
8922.20	6.78	80.97	8841.00	84.43	931.83	559979.83	727635.33		Upper Avalon Shale	
9253.59	12.92	81.06	9168.00	92.63	983.52	559988.03	727687.02		Lower Avalon Shale	
9767.80	12.45	83.09	9670.00	101.08	1094.45	559996.48	727797.95		1st Bone Spring Sand	
9951.03	12.26	84.96	9849.00	105.44	1133.36	560000.84	727836.86		1st Bone Spring Lower	
10069.59	11.09	86.67	9965.00	107.21	1157.75	560002.61	727861.25		2nd Bone Spring A Lime	
10310.42	10.05	79.06	10202.00	111.20	1200.29	560006.60	727903.79		Second Bone Spring	
10613.15	10.64	81.26	10500.00	122.46	1252.37	560017.86	727955.87		2nd Bone Spring B Sand	
10794.64	11.55	84.82	10678.00	126.42	1287.57	560021.82	727991.07		Base 2nd Bone Spring B Sand	
10866.06	11.51	102.12	10748.00	125.57	1301.66	560020.97	728005.16		3rd Bone Spring Lime	
11270.75	38.77	166.58	11117.00	-10.49	1366.17	559884.91	728069.67		3rd Bone Spring Sand	
11616.40	71.96	172.95	11322.00	-279.67	1413.47	559615.73	728116.97		Red Hills Sand	
18592.12	87.26	180.70	11387.00	-7246.08	1459.83	552649.32	728163.33		Wolfcamp	