

SURVEY CERTIFICATION FORM

3610 Elkins Road Midland, TX 79705 t:432-684-0057 f: 432-686-7964



PHOENIX
TECHNOLOGY SERVICES

HOBBS OCD

Company: XTO

AUG 29 2018

Job #: 63281

Well Name: Eugene Coats No. 8

RECEIVED

County/State: Lea Co., New Mexico

Survey Instrument Type: North Seek Rate Gyro

API # 30-025-30821

TIE-IN DATA

Measure Depth (ft)	Vertical Depth (ft)	Inclination (°)	Azimuth (°)	N-S Coordinates	E-W Coordinates	Data Source
0	0	0	0	0	0	Surface

First Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2018-08-13	0	0	0

Last Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2018-08-13	3179	1.01	110.29

Projected TD Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
0	0	0	0

Grid Correction
-0.58

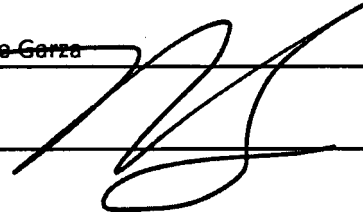
Gyro Operator: Phoenix Technology Services USA Ltd.

Gyro Supervisor: Angel Guebara

To the best of my knowledge I certify this survey data to be correct and true

Date: 08-13-18

Print Name: Noe Garza

Signature: 

HOBBS OGD

AUG 29 2018

RECEIVED


PHOENIX
 TECHNOLOGY SERVICES

 Company: XTO
 Well: Eugene Coats No. 8
 Location: Lea Co., New Mexico
 Rig: Pulling Unit

 Job Number: 63281
 Grid Corr.: -0.58
 Lat: 32.24
 Long: -103.25

 Date: 08-13-18
 Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: Ground
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
Enter Tie-In Survey on Line 10													
FIELD COPY, NON-DEFINITIVE													
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.12	10.65	100	100.00	0.10	0.10 N	0.02 E	0.10	10.65	0.12	0.12	10.65
	125.00	0.16	16.12	25	125.00	0.16	0.16 N	0.03 E	0.17	11.80	0.17	0.16	21.88
	150.00	0.14	352.90	25	150.00	0.23	0.23 N	0.04 E	0.23	9.99	0.25	-0.08	1347.12
	175.00	0.14	16.03	25	175.00	0.29	0.29 N	0.04 E	0.29	8.85	0.22	0.00	-1347.48
	200.00	0.09	286.27	25	200.00	0.32	0.32 N	0.03 E	0.32	6.06	0.66	-0.20	1080.96
	225.00	0.18	324.72	25	225.00	0.36	0.36 N	0.01 W	0.36	358.80	0.49	0.36	153.80
	250.00	0.16	323.70	25	250.00	0.42	0.42 N	0.05 W	0.42	353.07	0.08	-0.08	-4.08
	275.00	0.19	131.13	25	275.00	0.42	0.42 N	0.04 W	0.42	354.51	1.39	0.12	-770.28
	300.00	0.12	357.13	25	300.00	0.42	0.42 N	0.01 W	0.42	358.58	1.15	-0.28	904.00
	325.00	0.13	337.70	25	325.00	0.47	0.47 N	0.02 W	0.47	357.27	0.17	0.04	-77.72
	350.00	0.09	302.25	25	350.00	0.51	0.51 N	0.05 W	0.51	354.39	0.31	-0.16	-141.80
	375.00	0.09	14.07	25	375.00	0.54	0.54 N	0.06 W	0.54	353.45	0.42	0.00	-1152.72
	400.00	0.05	111.85	25	400.00	0.55	0.55 N	0.05 W	0.55	355.16	0.43	-0.16	391.12
	425.00	0.20	284.45	25	425.00	0.56	0.56 N	0.08 W	0.56	351.96	1.00	0.60	690.40
	450.00	0.08	117.22	25	450.00	0.56	0.56 N	0.11 W	0.57	349.35	1.11	-0.48	-668.92
	475.00	0.12	136.71	25	475.00	0.53	0.53 N	0.07 W	0.54	352.31	0.21	0.16	77.96
	500.00	0.14	77.26	25	500.00	0.52	0.52 N	0.02 W	0.52	357.33	0.52	0.08	-237.80
	525.00	0.15	116.66	25	525.00	0.51	0.51 N	0.03 E	0.52	3.86	0.39	0.04	157.60
	550.00	0.26	102.19	25	550.00	0.49	0.49 N	0.12 E	0.50	13.76	0.48	0.44	-57.88
	575.00	0.22	116.80	25	575.00	0.45	0.45 N	0.22 E	0.50	25.62	0.29	-0.16	58.44
	600.00	0.37	94.66	25	600.00	0.43	0.43 N	0.34 E	0.55	38.70	0.74	0.60	-88.56
	625.00	0.32	70.67	25	625.00	0.44	0.44 N	0.49 E	0.66	47.78	0.61	-0.20	-95.96
	650.00	0.33	32.87	25	650.00	0.53	0.53 N	0.59 E	0.79	48.40	0.84	0.04	-151.20
	675.00	0.46	97.26	25	675.00	0.57	0.57 N	0.73 E	0.93	51.88	1.74	0.52	257.56
	700.00	0.27	95.07	25	700.00	0.56	0.56 N	0.89 E	1.05	58.00	0.76	-0.76	-8.76
	725.00	0.28	77.52	25	725.00	0.56	0.56 N	1.01 E	1.15	60.77	0.34	0.04	-70.20
	750.00	0.27	108.74	25	750.00	0.56	0.56 N	1.12 E	1.25	63.58	0.59	-0.04	124.88



Company:	XTO
Well:	Eugene Coats No. 8
Location:	Lea Co., New Mexico
Rig:	Pulling Unit

Job Number:	63281
Grid Corr.:	-0.58
Lat:	32.24
Long:	-103.25

Calculation Method:	Minimum Curvature
Proposed Azimuth:	
RKB - MSL in feet:	<u>Ground</u>
Tie Into:	<u>Surface</u>

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	775.00	0.24	86.31	25	775.00	0.54	0.54 N	1.23 E	1.35	66.22	0.41	-0.12	-89.72
	800.00	0.23	87.89	25	800.00	0.55	0.55 N	1.33 E	1.44	67.67	0.05	-0.04	6.32
	825.00	0.38	78.42	25	824.99	0.57	0.57 N	1.46 E	1.57	68.87	0.63	0.60	-37.88
	850.00	0.40	61.91	25	849.99	0.62	0.62 N	1.62 E	1.74	68.97	0.45	0.08	-66.04
	875.00	0.40	51.25	25	874.99	0.72	0.72 N	1.77 E	1.91	67.85	0.30	0.00	-42.64
	900.00	0.37	30.20	25	899.99	0.84	0.84 N	1.88 E	2.06	65.79	0.57	-0.12	-84.20
	925.00	0.34	19.31	25	924.99	0.98	0.98 N	1.94 E	2.18	63.13	0.29	-0.12	-43.56
	950.00	0.33	216.93	25	949.99	1.00	1.00 N	1.92 E	2.17	62.61	2.65	-0.04	790.48
	975.00	0.35	49.91	25	974.99	0.99	0.99 N	1.94 E	2.18	62.99	2.70	0.08	-668.08
	1000.00	0.28	182.42	25	999.99	0.98	0.98 N	1.99 E	2.22	63.92	2.31	-0.28	530.04
	1025.00	0.30	51.93	25	1024.99	0.96	0.96 N	2.04 E	2.26	64.94	2.11	0.08	-521.96
	1050.00	0.23	85.63	25	1049.99	1.00	1.00 N	2.14 E	2.37	65.01	0.67	-0.28	134.80
	1075.00	0.33	71.82	25	1074.99	1.03	1.03 N	2.26 E	2.48	65.62	0.48	0.40	-55.24
	1100.00	0.35	73.37	25	1099.99	1.07	1.07 N	2.40 E	2.63	66.01	0.09	0.08	6.20
	1125.00	0.35	76.57	25	1124.99	1.11	1.11 N	2.55 E	2.78	66.50	0.08	0.00	12.80
	1150.00	0.38	62.91	25	1149.99	1.17	1.17 N	2.70 E	2.94	66.66	0.37	0.12	-54.64
	1175.00	0.40	67.00	25	1174.99	1.24	1.24 N	2.85 E	3.11	66.57	0.14	0.08	16.36
	1200.00	0.53	50.81	25	1199.99	1.34	1.34 N	3.02 E	3.31	66.04	0.73	0.52	-64.76
	1225.00	0.44	44.67	25	1224.99	1.49	1.49 N	3.18 E	3.51	64.97	0.42	-0.36	-24.56
	1250.00	0.51	39.08	25	1249.99	1.64	1.64 N	3.32 E	3.70	63.70	0.34	0.28	-22.36
	1275.00	0.44	29.83	25	1274.99	1.81	1.81 N	3.44 E	3.88	62.23	0.41	-0.28	-37.00
	1300.00	0.53	37.12	25	1299.99	1.99	1.99 N	3.55 E	4.07	60.81	0.44	0.36	29.16
	1325.00	0.57	46.17	25	1324.98	2.16	2.16 N	3.71 E	4.30	59.78	0.38	0.16	36.20
	1350.00	0.59	49.47	25	1349.98	2.33	2.33 N	3.90 E	4.55	59.12	0.16	0.08	13.20
	1375.00	0.64	47.35	25	1374.98	2.51	2.51 N	4.10 E	4.81	58.52	0.22	0.20	-8.48
	1400.00	0.77	64.02	25	1399.98	2.68	2.68 N	4.36 E	5.11	58.40	0.97	0.52	66.68
	1425.00	1.13	69.97	25	1424.98	2.84	2.84 N	4.74 E	5.52	59.08	1.49	1.44	23.80
	1450.00	1.39	78.87	25	1449.97	2.98	2.98 N	5.27 E	6.05	60.49	1.30	1.04	35.60
	1475.00	1.41	76.19	25	1474.96	3.11	3.11 N	5.86 E	6.64	62.04	0.27	0.08	-10.72
	1500.00	1.49	78.95	25	1499.95	3.25	3.25 N	6.48 E	7.25	63.38	0.42	0.32	11.04

Calculation Method:	Minimum Curvature
Proposed Azimuth:	
RKB - MSL in feet:	<u>Ground</u>
Tie Into:	Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	1525.00	1.64	77.80	25	1524.94	3.39	3.39 N	7.15 E	7.91	64.66	0.61	0.60	-4.60
	1550.00	1.70	81.10	25	1549.93	3.52	3.52 N	7.87 E	8.62	65.90	0.45	0.24	13.20
	1575.00	1.73	81.50	25	1574.92	3.63	3.63 N	8.61 E	9.34	67.12	0.13	0.12	1.60
	1600.00	1.81	81.34	25	1599.91	3.75	3.75 N	9.37 E	10.09	68.20	0.32	0.32	-0.64
	1625.00	1.90	81.05	25	1624.90	3.87	3.87 N	10.17 E	10.88	69.16	0.36	0.36	-1.16
	1650.00	1.85	81.46	25	1649.88	4.00	4.00 N	10.98 E	11.68	70.00	0.21	-0.20	1.64
	1675.00	1.80	78.03	25	1674.87	4.14	4.14 N	11.76 E	12.47	70.62	0.48	-0.20	-13.72
	1700.00	1.87	73.66	25	1699.86	4.33	4.33 N	12.54 E	13.26	70.93	0.63	0.28	-17.48
	1725.00	1.76	79.38	25	1724.85	4.52	4.52 N	13.30 E	14.05	71.24	0.85	-0.44	22.88
	1750.00	1.65	79.41	25	1749.84	4.66	4.66 N	14.04 E	14.79	71.65	0.44	-0.44	0.12
	1775.00	1.60	75.12	25	1774.83	4.81	4.81 N	14.73 E	15.49	71.91	0.53	-0.20	-17.16
	1800.00	1.55	75.96	25	1799.82	4.98	4.98 N	15.39 E	16.18	72.06	0.22	-0.20	3.36
	1825.00	1.55	76.81	25	1824.81	5.14	5.14 N	16.05 E	16.85	72.23	0.09	0.00	3.40
	1850.00	1.53	74.71	25	1849.80	5.31	5.31 N	16.70 E	17.52	72.37	0.24	-0.08	-8.40
	1875.00	1.47	79.37	25	1874.79	5.45	5.45 N	17.34 E	18.18	72.54	0.54	-0.24	18.64
	1900.00	1.46	78.03	25	1899.78	5.58	5.58 N	17.96 E	18.81	72.74	0.14	-0.04	-5.36
	1925.00	1.33	83.45	25	1924.77	5.68	5.68 N	18.56 E	19.41	72.99	0.74	-0.52	21.68
	1950.00	1.22	76.56	25	1949.77	5.77	5.77 N	19.11 E	19.96	73.19	0.75	-0.44	-27.56
	1975.00	1.38	85.80	25	1974.76	5.86	5.86 N	19.67 E	20.52	73.42	1.05	0.64	36.96
	2000.00	1.33	81.24	25	1999.75	5.92	5.92 N	20.26 E	21.11	73.70	0.48	-0.20	-18.24
	2025.00	1.41	75.93	25	2024.75	6.04	6.04 N	20.84 E	21.70	73.83	0.60	0.32	-21.24
	2050.00	1.29	80.06	25	2049.74	6.17	6.17 N	21.42 E	22.29	73.94	0.62	-0.48	16.52
	2075.00	1.10	77.49	25	2074.73	6.27	6.27 N	21.93 E	22.81	74.05	0.79	-0.76	-10.28
	2100.00	1.21	81.91	25	2099.73	6.36	6.36 N	22.42 E	23.31	74.17	0.57	0.44	17.68
	2125.00	1.30	77.58	25	2124.72	6.45	6.45 N	22.96 E	23.85	74.30	0.52	0.36	-17.32
	2150.00	1.21	71.56	25	2149.72	6.60	6.60 N	23.49 E	24.40	74.31	0.64	-0.36	-24.08
	2175.00	1.19	71.54	25	2174.71	6.76	6.76 N	23.99 E	24.92	74.25	0.08	-0.08	-0.08
	2200.00	1.18	70.88	25	2199.71	6.93	6.93 N	24.48 E	25.44	74.19	0.07	-0.04	-2.64
	2225.00	1.22	71.88	25	2224.70	7.10	7.10 N	24.97 E	25.96	74.13	0.18	0.16	4.00
	2250.00	1.20	72.68	25	2249.70	7.26	7.26 N	25.48 E	26.49	74.10	0.10	-0.08	3.20



Company: XTO
Well: Eugene Coats No. 8
Location: Lea Co., New Mexico
Rig: Pulling Unit

Job Number: 63281
Grid Corr.: -0.58
Lat: 32.24
Long: -103.25

Calculation Method: Minimum Curvature
Proposed Azimuth:
RKB - MSL in feet: Ground
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)										
							7.41 N	25.99 E	27.02	74.08	0.21	0.16	6.08
							7.58 N	26.52 E	27.58	74.06	0.41	0.32	-11.24
							7.83 N	27.07 E	28.18	73.87	1.23	0.56	-45.20
							8.11 N	27.62 E	28.78	73.63	0.57	-0.32	19.28
							8.41 N	28.16 E	29.39	73.38	0.75	0.40	-25.56
							8.74 N	28.73 E	30.03	73.07	0.20	0.12	6.04
							9.07 N	29.34 E	30.71	72.82	0.76	0.68	12.44
							9.42 N	30.00 E	31.45	72.57	0.36	0.32	-5.68
							9.79 N	30.71 E	32.24	72.32	0.63	0.60	6.12
							10.18 N	31.45 E	33.06	72.07	0.24	0.04	-7.20
							10.58 N	32.18 E	33.88	71.79	0.17	-0.04	-5.00
							10.96 N	32.91 E	34.69	71.58	0.67	-0.24	18.92
							11.35 N	33.69 E	35.55	71.38	1.25	1.20	-10.00
							11.76 N	34.49 E	36.44	71.17	0.77	-0.76	3.76
							12.20 N	35.28 E	37.33	70.93	1.10	0.92	-16.52
							12.74 N	36.13 E	38.31	70.57	1.22	1.04	-15.88
							13.35 N	37.02 E	39.35	70.17	0.23	0.16	3.68
							13.96 N	37.92 E	40.40	69.78	0.18	-0.04	-4.16
							14.57 N	38.81 E	41.46	69.43	0.26	0.04	5.96
							15.19 N	39.77 E	42.58	69.10	1.06	1.04	4.32
							15.82 N	40.82 E	43.77	68.81	0.53	0.36	8.04
							16.47 N	41.88 E	45.00	68.53	0.54	0.20	-10.00
							17.14 N	42.97 E	46.26	68.25	0.57	0.28	9.76
							17.79 N	44.09 E	47.55	68.02	0.19	0.16	2.12
							18.40 N	45.23 E	48.83	67.86	0.78	-0.36	13.32
							18.89 N	46.41 E	50.10	67.85	1.59	0.16	31.00
							19.37 N	47.57 E	51.36	67.84	1.65	-0.52	-31.16
							19.89 N	48.62 E	52.53	67.75	1.00	-1.00	0.36
							20.32 N	49.59 E	53.59	67.72	1.51	-1.12	23.88
							20.67 N	50.48 E	54.55	67.74	0.77	-0.72	-6.76



Company: XTO
 Well: Eugene Coats No. 8
 Location: Lea Co., New Mexico
 Rig: Pulling Unit

Job Number: 63281
 Grid Corr.: -0.58
 Lat: 32.24
 Long: -103.25

Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: Ground
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	3025.00	2.16	61.85	25	3024.10	21.06	21.06 N	51.32 E	55.48	67.69	0.92	0.20	-24.04
	3050.00	1.72	84.96	25	3049.09	21.32	21.32 N	52.11 E	56.30	67.75	3.55	-1.76	92.44
	3075.00	1.33	87.44	25	3074.08	21.36	21.36 N	52.78 E	56.94	67.96	1.58	-1.56	9.92
	3100.00	1.70	65.73	25	3099.07	21.53	21.53 N	53.40 E	57.58	68.04	2.71	1.48	-86.84
	3125.00	1.23	78.16	25	3124.06	21.74	21.74 N	54.00 E	58.21	68.08	2.26	-1.88	49.72
	3150.00	1.04	84.15	25	3149.06	21.81	21.81 N	54.49 E	58.70	68.18	0.90	-0.76	23.96
	3179.00	1.01	110.29	29	3178.05	21.75	21.75 N	54.99 E	59.14	68.42	1.60	-0.10	90.14