



PHOENIX

TECHNOLOGY SERVICES USA INC.

Celebrating 20 Years of Focused Solutions

3610 Elkins Road, Midland, Texas 79705 T. 432.684.0057 F. 432.686.7964 www.phxtech.com

March 28, 2018

Oil Conservation Division
State of New Mexico
1625 N. French Drive
Hobbs, New Mexico 88240

HOBBS OCD
APR 16 2018
RECEIVED

Dear District 1 - Hobbs

Attention: Regulatory Department

Re: 3 Bear Field Services
Libby Berry Fee SWD 1
Lea County, New Mexico
API #30-025-44288
Job No. 62516

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Andy Askew	1	0	1,505	3/25/18	3/25/18	Gyro

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

Provide survey 1505 - TD
B

SURVEY CERTIFICATION FORM

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



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TECHNOLOGY SERVICES

Company: 3 Bear Field Services

Job #: 62516

Well Name: Libby Berry Fee SWD 1

County/State: Lea / NM

Survey Instrument Type: North Seek Rate Gyro

API # 30-025-44288

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 (°)
2018-03-25	0	0	0

Last Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2018-03-25	1505	11.68	246.84

Projected TD Survey

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

Grid Correction
-0.44

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:

3/25/18

Print Name: Andy Askew

Signature:



Company: 3 Bear Field Services
 Well: Libby Berry Fee SWD 1
 Location: Lea Co., NM
 Rig: Silver Oak 8

Job Number: 62516
 Grid Corr.: -0.44
 Lat: 32.54
 Long: -103.54

Date: 03-25-18
 Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: 21
 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)			
Enter Tie-In Survey on Line 10													
FIELD COPY, NON-DEFINITIVE													
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.32	186.17	100	100.00	-0.28	0.28 S	0.03 W	0.28	186.17	0.32	0.32	186.17
	125.00	0.35	177.06	25	125.00	-0.42	0.42 S	0.03 W	0.42	184.54	0.24	0.12	-36.44
	150.00	0.42	177.80	25	150.00	-0.59	0.59 S	0.03 W	0.59	182.53	0.28	0.28	2.96
	175.00	0.36	191.18	25	175.00	-0.76	0.76 S	0.04 W	0.76	182.85	0.43	-0.24	53.52
	200.00	0.36	184.80	25	200.00	-0.92	0.92 S	0.06 W	0.92	183.73	0.16	0.00	-25.52
	225.00	0.42	219.73	25	225.00	-1.06	1.06 S	0.12 W	1.07	186.69	0.96	0.24	139.72
	250.00	0.47	202.19	25	250.00	-1.23	1.23 S	0.22 W	1.25	190.24	0.58	0.20	-70.16
	275.00	0.57	197.97	25	275.00	-1.44	1.44 S	0.30 W	1.47	191.72	0.43	0.40	-16.88
	300.00	0.52	189.31	25	299.99	-1.67	1.67 S	0.36 W	1.71	192.01	0.38	-0.20	-34.64
	325.00	0.64	193.40	25	324.99	-1.92	1.92 S	0.41 W	1.96	191.96	0.51	0.48	16.36
	350.00	0.66	192.55	25	349.99	-2.20	2.20 S	0.47 W	2.25	192.08	0.09	0.08	-3.40
	375.00	0.63	201.72	25	374.99	-2.47	2.47 S	0.55 W	2.53	192.63	0.43	-0.12	36.68
	400.00	0.64	204.29	25	399.99	-2.72	2.72 S	0.66 W	2.80	193.65	0.12	0.04	10.28
	425.00	0.57	214.07	25	424.99	-2.95	2.95 S	0.79 W	3.05	194.95	0.50	-0.28	39.12
	450.00	0.73	208.93	25	449.98	-3.19	3.19 S	0.93 W	3.33	196.32	0.68	0.64	-20.56
	475.00	0.80	217.93	25	474.98	-3.47	3.47 S	1.12 W	3.65	197.87	0.56	0.28	36.00
	500.00	0.81	216.73	25	499.98	-3.75	3.75 S	1.33 W	3.98	199.56	0.08	0.04	-4.80
	525.00	0.91	214.10	25	524.98	-4.05	4.05 S	1.55 W	4.34	200.90	0.43	0.40	-10.52
	550.00	1.02	221.10	25	549.97	-4.39	4.39 S	1.81 W	4.74	202.38	0.64	0.44	28.00
	575.00	1.13	212.59	25	574.97	-4.76	4.76 S	2.09 W	5.20	203.65	0.77	0.44	-34.04
	600.00	1.28	219.74	25	599.96	-5.18	5.18 S	2.40 W	5.71	204.81	0.85	0.60	28.60
	625.00	1.42	223.14	25	624.96	-5.63	5.63 S	2.79 W	6.28	206.35	0.64	0.56	13.60
	650.00	1.48	226.20	25	649.95	-6.08	6.08 S	3.23 W	6.88	208.01	0.39	0.24	12.24
	675.00	1.53	226.10	25	674.94	-6.53	6.53 S	3.71 W	7.51	209.57	0.20	0.20	-0.40
	700.00	1.59	231.31	25	699.93	-6.98	6.98 S	4.22 W	8.15	211.14	0.62	0.24	20.84
	725.00	1.91	230.76	25	724.92	-7.46	7.46 S	4.81 W	8.88	212.82	1.28	1.28	-2.20
	750.00	1.91	232.64	25	749.91	-7.97	7.97 S	5.46 W	9.67	214.42	0.25	0.00	7.52



Company: 3 Bear Field Services
 Well: Libby Berry Fee SWD 1
 Location: Lea Co., NM
 Rig: Silver Oak 8

Job Number: 62516
 Grid Corr.: -0.44
 Lat: 32.54
 Long: -103.54

Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: 21
 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)			
	775.00	1.93	234.87	25	774.89	-8.47	8.47 S	6.14 W	10.46	215.94	0.31	0.08	8.92
	800.00	2.06	236.96	25	799.88	-8.96	8.96 S	6.86 W	11.28	217.45	0.60	0.52	8.36
	825.00	2.14	236.49	25	824.86	-9.46	9.46 S	7.63 W	12.15	218.87	0.33	0.32	-1.88
	850.00	2.10	238.97	25	849.84	-9.95	9.95 S	8.41 W	13.03	220.19	0.40	-0.16	9.92
	875.00	2.07	243.16	25	874.83	-10.39	10.39 S	9.20 W	13.88	221.52	0.62	-0.12	16.76
	900.00	2.40	242.90	25	899.81	-10.84	10.84 S	10.07 W	14.79	222.91	1.32	1.32	-1.04
	925.00	2.57	234.74	25	924.78	-11.40	11.40 S	11.00 W	15.84	223.97	1.57	0.68	-32.64
	950.00	2.62	237.66	25	949.76	-12.03	12.03 S	11.94 W	16.94	224.78	0.57	0.20	11.68
	975.00	2.85	236.71	25	974.73	-12.67	12.67 S	12.94 W	18.11	225.59	0.94	0.92	-3.80
	1000.00	3.04	238.59	25	999.70	-13.36	13.36 S	14.02 W	19.37	226.39	0.85	0.76	7.52
	1025.00	3.31	238.00	25	1024.66	-14.09	14.09 S	15.20 W	20.73	227.18	1.09	1.08	-2.36
	1050.00	3.74	243.51	25	1049.61	-14.83	14.83 S	16.54 W	22.22	228.12	2.19	1.72	22.04
	1075.00	3.90	240.70	25	1074.55	-15.61	15.61 S	18.01 W	23.84	229.08	0.98	0.64	-11.24
	1100.00	4.11	242.05	25	1099.49	-16.45	16.45 S	19.55 W	25.55	229.92	0.92	0.84	5.40
	1125.00	4.59	245.50	25	1124.42	-17.29	17.29 S	21.25 W	27.39	230.87	2.19	1.92	13.80
	1150.00	5.09	246.37	25	1149.33	-18.14	18.14 S	23.18 W	29.43	231.94	2.02	2.00	3.48
	1175.00	5.69	246.27	25	1174.22	-19.09	19.09 S	25.33 W	31.71	233.00	2.40	2.40	-0.40
	1200.00	6.10	246.14	25	1199.09	-20.12	20.12 S	27.68 W	34.22	233.98	1.64	1.64	-0.52
	1225.00	6.53	245.27	25	1223.94	-21.26	21.26 S	30.18 W	36.91	234.84	1.76	1.72	-3.48
	1250.00	7.03	244.53	25	1248.76	-22.51	22.51 S	32.85 W	39.82	235.58	2.03	2.00	-2.96
	1275.00	7.49	243.30	25	1273.56	-23.90	23.90 S	35.69 W	42.95	236.19	1.94	1.84	-4.92
	1300.00	8.16	244.06	25	1298.33	-25.41	25.41 S	38.74 W	46.33	236.74	2.71	2.68	3.04
	1325.00	8.95	244.33	25	1323.05	-27.03	27.03 S	42.09 W	50.02	237.30	3.16	3.16	1.08
	1350.00	9.60	244.39	25	1347.72	-28.77	28.77 S	45.72 W	54.02	237.82	2.60	2.60	0.24
	1375.00	10.06	245.03	25	1372.36	-30.59	30.59 S	49.58 W	58.26	238.33	1.89	1.84	2.56
	1400.00	9.74	245.86	25	1396.98	-32.38	32.38 S	53.49 W	62.53	238.81	1.40	-1.28	3.32
	1425.00	9.73	246.59	25	1421.62	-34.08	34.08 S	57.36 W	66.72	239.28	0.50	-0.04	2.92
	1450.00	10.17	246.20	25	1446.25	-35.81	35.81 S	61.32 W	71.01	239.71	1.78	1.76	-1.56
	1475.00	11.06	246.40	25	1470.82	-37.66	37.66 S	65.53 W	75.59	240.11	3.56	3.56	0.80
	1500.00	11.56	246.80	25	1495.33	-39.61	39.61 S	70.03 W	80.46	240.51	2.02	2.00	1.60



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							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	1505.00	11.68	246.84	5	1500.23	-40.01	40.01 S	70.96 W	81.46	240.59	2.41	2.40	0.80