

AUG 27 2014

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1410564

OPERATOR RKL Exploration

WELL NAME North Brushy Draw Federal 35 9H

COUNTY & STATE Eddy County, NM

API WELL NUMBER 30-015-42220

PROPOSED DIRECTION 181.42

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
0 ft	.00 ft	.0 ft	.0 ft	.00 ft	.00 ft	Surface

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
9-Apr-14	665 ft	1.8	198.5

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
30-Apr-14	13,465 ft	89.3	177.5

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
30-Apr-14	13,520 ft	89.3	177.5

Jeff Thomas

PRINT YOUR NAME ABOVE

Jeff Thomas

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	DECLINATION
7.41	
DECLINATION OR GRID	DECLINATION

4/30/2014

TODAY'S DATE

MWD SUPERVISOR 1

Jeff Thomas

DIRECTIONAL DRILLER 1

Jonathon Schlottman

MWD SUPERVISOR 2

Shawn Ramnarine

DIRECTIONAL DRILLER 2

Lee Scoggins

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)



PHOENIX TECHNOLOGY SERVICES

Survey Calculation Sheet

Company RKI Exploration
Well North Brushy Draw Federal 35 9H
Field Eddy County, NM
Rig Silver Oak 10
Phoenix Rep. Jeff Thomas

Correction 7.20
Target TVD 9050
Target Az. 181.42
KBE 3049

QDT
CLT

Date	No.	DEPTH	INC.	AZM	C.L.	T.V.D.	V.S.	N/S	E/W	DLS	B/D.	BHA
Tie - In	0	0	0.00	0.00	0	0.00	0.00	0.00 N	0.00 E	0.00	0.00	
9-Apr	1	665	1.80	198.50	665	664.89	9.98	9.91 S	3.31 W	0.27	0.27	PHX-MWD R1
9-Apr	2	726	2.2	201.0	61	725.85	12.00	11.91 S	4.04 W	0.67	0.66	PHX-MWD R1
9-Apr	3	818	2.7	225.1	92	817.77	15.23	15.08 S	6.21 W	1.23	0.54	PHX-MWD R1
9-Apr	4	910	3.5	231.1	92	909.65	22.45	18.38 S	9.93 W	2.31	0.87	PHX-MWD R1
9-Apr	5	1002	5.4	243.7	92	1001.36	26.54	22.06 S	15.99 W	1.50	2.07	PHX-MWD R1
9-Apr	6	1093	6.7	248.1	91	1091.85	31.62	25.94 S	24.76 W	1.27	1.43	PHX-MWD R1
9-Apr	7	1184	7.5	241.3	91	1182.15	37.57	30.77 S	34.89 W	0.84	0.88	PHX-MWD R1
9-Apr	8	1276	6.8	238.9	92	1273.44	43.12	36.47 S	44.82 W	1.49	0.76	PHX-MWD R1
10-Apr	9	1368	5.5	234.8	92	1364.91	43.12	41.82 S	53.09 W	1.49	1.41	PHX-MWD R1
10-Apr	10	1462	5.4	239.6	94	1458.48	48.14	46.66 S	60.58 W	0.50	-0.11	PHX-MWD R1
11-Apr	11	1558	5.2	251.0	96	1554.08	52.04	50.36 S	68.59 W	1.11	0.21	PHX-MWD R2
11-Apr	12	1653	4.2	287.6	95	1648.78	52.58	50.71 S	75.98 W	3.26	1.05	PHX-MWD R2
11-Apr	13	1747	4.8	296.5	94	1742.49	49.95	47.91 S	82.78 W	0.98	0.64	PHX-MWD R2
11-Apr	14	1840	5.2	291.4	93	1835.13	46.86	44.64 S	90.19 W	0.64	0.43	PHX-MWD R2
12-Apr	15	1935	4.4	280.4	95	1929.80	44.82	42.41 S	97.78 W	1.28	-0.84	PHX-MWD R2
12-Apr	16	2028	5.0	274.2	93	2022.49	44.07	41.47 S	105.33 W	0.84	0.65	PHX-MWD R2
12-Apr	17	2124	5.2	277.4	96	2118.11	43.41	40.60 S	113.82 W	0.36	0.21	PHX-MWD R2
12-Apr	18	2217	3.8	270.1	93	2210.82	43.04	40.05 S	121.08 W	1.62	1.51	PHX-MWD R2
13-Apr	19	2311	3.4	257.8	94	2304.64	43.77	40.64 S	126.92 W	0.92	-0.43	PHX-MWD R2
13-Apr	20	2405	3.0	257.0	94	2398.49	45.04	41.78 S	132.04 W	0.43	-0.43	PHX-MWD R2
13-Apr	21	2499	1.3	270.4	94	2492.42	45.67	42.33 S	135.50 W	1.87	1.81	PHX-MWD R2
13-Apr	22	2592	1.1	286.2	93	2585.40	45.46	42.07 S	137.42 W	0.41	-0.22	PHX-MWD R2
13-Apr	23	2686	0.5	3.2	94	2679.39	44.82	41.41 S	138.26 W	1.17	-0.64	PHX-MWD R2
13-Apr	24	2781	0.8	37.9	95	2774.39	43.87	40.47 S	137.83 W	0.51	0.32	PHX-MWD R2
13-Apr	25	2876	1.3	68.7	95	2869.37	42.93	39.56 S	136.42 W	0.78	0.53	PHX-MWD R2
13-Apr	26	2970	3.0	90.8	94	2963.30	42.49	39.20 S	132.96 W	1.98	1.81	PHX-MWD R2
13-Apr	27	3066	4.6	98.7	96	3059.09	42.95	39.82 S	126.65 W	1.75	1.67	PHX-MWD R2
13-Apr	28	3126	5.9	99.8	60	3118.84	43.70	40.71 S	121.23 W	2.17	2.17	PHX-MWD R2
15-Apr	29	3254	7.5	98.4	128	3245.96	45.68	43.05 S	106.48 W	1.26	-1.25	PHX-MWD R3
15-Apr	30	3348	6.2	112.7	94	3339.29	48.26	45.91 S	95.73 W	2.27	-1.38	PHX-MWD R3
15-Apr	31	3444	5.9	117.6	96	3434.76	52.32	50.19 S	86.58 W	0.62	-0.31	PHX-MWD R3
15-Apr	32	3540	3.8	138.9	96	3530.42	56.84	54.88 S	80.11 W	2.85	-2.19	PHX-MWD R3
15-Apr	33	3634	3.4	142.3	94	3624.23	61.30	59.43 S	76.36 W	0.48	-0.43	PHX-MWD R3
15-Apr	34	3730	2.1	145.0	96	3720.12	64.93	63.12 S	73.61 W	1.36	-1.35	PHX-MWD R3
15-Apr	35	3824	0.8	117.2	94	3814.09	66.60	64.83 S	72.04 W	1.53	-1.38	PHX-MWD R3
16-Apr	36	3919	1.8	283.9	95	3909.07	66.56	64.78 S	72.90 W	2.72	-1.05	PHX-MWD R3
16-Apr	37	4013	1.9	293.1	94	4003.03	65.67	63.81 S	75.76 W	0.33	0.11	PHX-MWD R3
16-Apr	38	4109	1.8	292.0	96	4098.98	64.55	62.62 S	78.62 W	0.11	-0.10	PHX-MWD R3
16-Apr	39	4204	1.9	292.0	95	4193.93	63.47	61.47 S	81.47 W	0.11	0.11	PHX-MWD R3
16-Apr	40	4300	1.9	290.5	96	4289.87	62.39	60.32 S	84.43 W	0.05	0.00	PHX-MWD R3
16-Apr	41	4584	1.8	291.4	284	4573.73	59.33	57.04 S	93.00 W	0.04	-0.04	PHX-MWD R3
16-Apr	42	4866	1.2	298.5	282	4855.63	56.47	54.02 S	99.71 W	0.22	-0.21	PHX-MWD R3
16-Apr	43	5129	0.8	288.0	263	5118.59	54.70	52.14 S	103.88 W	0.17	-0.15	PHX-MWD R3
16-Apr	44	5432	0.8	283.1	303	5421.56	53.66	51.00 S	107.95 W	0.02	0.00	PHX-MWD R3
16-Apr	45	5713	0.9	247.0	281	5702.53	54.18	51.42 S	111.90 W	0.19	0.04	PHX-MWD R3
17-Apr	46	5994	1.1	222.0	281	5983.49	57.14	54.29 S	115.73 W	0.17	0.07	PHX-MWD R3
17-Apr	47	6277	1.3	237.6	283	6266.43	60.99	58.03 S	120.26 W	0.13	0.07	PHX-MWD R3
17-Apr	48	6560	3.4	260.0	283	6549.18	64.44	61.21 S	131.23 W	0.80	0.74	PHX-MWD R3
17-Apr	49	6846	5.4	256.0	286	6834.32	69.70	65.93 S	152.65 W	0.71	0.70	PHX-MWD R3
18-Apr	50	6940	3.3	254.0	94	6928.04	71.68	67.75 S	159.54 W	2.24	-2.23	PHX-MWD R4
18-Apr	51	7035	1.2	288.5	95	7022.97	72.21	68.19 S	163.11 W	2.54	-2.21	PHX-MWD R4
18-Apr	52	7128	2.1	324.3	93	7115.93	70.56	66.50 S	165.03 W	1.43	0.97	PHX-MWD R4

19-Apr	53	7223	2.2	336.5	95	7210.86	67.52	63.41 S	166.77 W	0.49	0.11	PHX-MWD R4
19-Apr	54	7318	1.5	327.0	95	7305.82	64.84	60.69 S	168.18 W	0.80	0.74	PHX-MWD R4
19-Apr	55	7412	2.0	287.6	94	7399.77	63.37	59.17 S	170.41 W	1.35	0.53	PHX-MWD R4
19-Apr	56	7506	1.2	268.4	94	7493.74	62.97	58.70 S	172.96 W	1.01	0.85	PHX-MWD R4
19-Apr	57	7599	0.3	63.4	93	7586.73	62.90	58.62 S	173.71 W	1.59	0.97	PHX-MWD R4
19-Apr	58	7693	0.8	63.8	94	7680.73	62.48	58.22 S	172.90 W	0.53	0.53	PHX-MWD R4
19-Apr	59	7787	0.2	29.3	94	7774.72	62.03	57.78 S	172.23 W	0.69	0.64	PHX-MWD R4
19-Apr	60	7881	1.7	19.3	94	7868.71	60.56	56.32 S	171.69 W	1.60	1.60	PHX-MWD R4
19-Apr	61	7974	2.0	25.1	93	7961.66	57.76	53.55 S	170.55 W	0.38	0.32	PHX-MWD R4
19-Apr	62	8067	1.5	23.8	93	8054.62	55.15	50.97 S	169.37 W	0.54	0.54	PHX-MWD R4
19-Apr	63	8161	1.1	39.5	94	8148.59	53.30	49.15 S	168.30 W	0.57	0.43	PHX-MWD R4
19-Apr	64	8255	0.9	46.1	94	8242.58	52.07	47.94 S	167.19 W	0.25	0.21	PHX-MWD R4
19-Apr	65	8307	0.5	53.1	94	8294.57	51.64	47.52 S	166.72 W	0.79	0.77	PHX-MWD R4
21-Apr	66	8349	0.6	35.8	52	8336.57	51.34	47.23 S	166.44 W	0.46	0.24	PHX-MWD R5
21-Apr	67	8380	0.1	314.3	31	8367.57	51.19	47.08 S	166.37 W	1.91	1.61	PHX-MWD R5
21-Apr	68	8411	1.5	184.0	31	8398.57	51.58	47.47 S	166.41 W	5.05	4.52	PHX-MWD R5
21-Apr	69	8442	5.0	174.7	31	8429.51	53.32	49.22 S	166.32 W	11.38	11.29	PHX-MWD R5
21-Apr	70	8473	8.5	172.4	31	8460.29	56.93	52.83 S	165.89 W	11.32	11.29	PHX-MWD R5
21-Apr	71	8505	12.0	172.2	32	8491.78	62.55	58.48 S	165.13 W	10.94	10.94	PHX-MWD R5
21-Apr	72	8536	14.9	170.9	31	8521.92	69.65	65.61 S	164.06 W	9.40	9.35	PHX-MWD R5
21-Apr	73	8567	17.0	169.7	31	8551.73	78.01	74.00 S	162.62 W	6.86	6.77	PHX-MWD R5
21-Apr	74	8598	19.2	167.9	31	8581.19	87.40	83.45 S	160.74 W	7.32	7.10	PHX-MWD R5
21-Apr	75	8629	21.6	170.2	31	8610.25	97.96	94.05 S	158.70 W	8.16	7.74	PHX-MWD R5
21-Apr	76	8660	23.7	170.2	31	8638.86	109.67	105.82 S	156.67 W	6.77	6.77	PHX-MWD R5
21-Apr	77	8691	24.8	170.9	31	8667.12	122.17	118.38 S	154.58 W	3.67	3.55	PHX-MWD R5
21-Apr	78	8722	26.6	173.3	31	8695.05	135.44	131.69 S	152.74 W	6.71	5.81	PHX-MWD R5
21-Apr	79	8753	28.2	177.6	31	8722.58	149.62	145.90 S	151.62 W	8.21	5.16	PHX-MWD R5
21-Apr	80	8784	29.2	182.3	31	8749.77	164.49	160.78 S	151.62 W	7.96	3.23	PHX-MWD R5
21-Apr	81	8815	32.8	183.4	31	8776.34	180.45	176.72 S	152.42 W	11.76	11.61	PHX-MWD R5
22-Apr	82	8847	34.3	184.1	32	8803.01	198.12	194.37 S	153.58 W	4.84	4.69	PHX-MWD R5
22-Apr	83	8878	37.9	181.8	31	8828.05	216.37	212.61 S	154.50 W	12.41	11.61	PHX-MWD R5
22-Apr	84	8909	42.3	181.3	31	8851.76	236.33	232.56 S	155.04 W	14.23	14.19	PHX-MWD R5
22-Apr	85	8940	46.5	179.1	31	8873.90	258.01	254.24 S	155.10 W	14.43	13.55	PHX-MWD R5
22-Apr	86	8971	49.3	179.4	31	8894.69	280.99	277.24 S	154.80 W	9.06	9.03	PHX-MWD R5
23-Apr	87	9000	49.8	181.4	29	8913.50	303.05	299.31 S	154.96 W	5.52	1.72	PHX-MWD R6
23-Apr	88	9031	53.0	178.5	31	8932.84	327.26	323.52 S	154.92 W	12.65	10.32	PHX-MWD R6
23-Apr	89	9062	57.1	178.8	31	8950.60	352.64	348.92 S	154.32 W	13.25	13.23	PHX-MWD R6
23-Apr	90	9093	60.6	178.9	31	8966.63	379.14	375.44 S	153.79 W	11.29	11.29	PHX-MWD R6
23-Apr	91	9124	63.4	178.7	31	8981.18	406.48	402.81 S	153.22 W	9.05	9.03	PHX-MWD R6
23-Apr	92	9155	66.5	180.2	31	8994.31	434.54	430.88 S	152.95 W	10.92	10.00	PHX-MWD R6
23-Apr	93	9186	69.5	181.8	31	9005.92	463.28	459.62 S	153.46 W	10.80	9.68	PHX-MWD R6
23-Apr	94	9218	72.2	183.0	32	9016.42	493.50	489.82 S	154.73 W	9.15	8.44	PHX-MWD R6
23-Apr	95	9249	75.4	183.2	31	9025.06	523.25	519.54 S	156.34 W	10.34	10.32	PHX-MWD R6
23-Apr	96	9280	77.8	183.5	31	9032.25	553.39	549.64 S	158.10 W	7.80	7.74	PHX-MWD R6
24-Apr	97	9311	79.9	182.4	31	9038.24	583.79	580.01 S	159.66 W	7.62	6.77	PHX-MWD R6
24-Apr	98	9343	81.8	182.5	32	9043.33	615.38	611.58 S	161.01 W	5.95	5.94	PHX-MWD R6
24-Apr	99	9374	85.4	182.9	31	9046.78	646.17	642.34 S	162.47 W	11.68	11.61	PHX-MWD R6
24-Apr	100	9405	88.6	182.6	31	9048.41	677.12	673.26 S	163.95 W	10.37	10.32	PHX-MWD R7
24-Apr	101	9498	91.1	182.8	93	9048.65	770.09	766.15 S	168.33 W	2.70	2.69	PHX-MWD R7
25-Apr	102	9592	90.9	183.2	94	9047.01	864.04	860.01 S	173.25 W	0.48	0.21	PHX-MWD R7
25-Apr	103	9685	90.1	181.6	93	9046.20	957.01	952.92 S	177.14 W	1.92	0.86	PHX-MWD R7
25-Apr	104	9779	90.4	178.0	94	9045.79	1050.96	1046.90 S	176.82 W	3.84	0.32	PHX-MWD R7
25-Apr	105	9872	89.9	178.4	93	9045.54	1143.81	1139.85 S	173.89 W	0.69	0.54	PHX-MWD R7
25-Apr	106	9966	89.1	178.3	94	9046.36	1237.67	1233.81 S	171.19 W	0.86	0.85	PHX-MWD R7
25-Apr	107	10059	90.0	177.5	93	9047.09	1330.49	1326.74 S	167.78 W	1.29	0.97	PHX-MWD R7
25-Apr	108	10152	90.0	177.4	93	9047.09	1423.27	1419.65 S	163.64 W	0.11	0.00	PHX-MWD R7
25-Apr	109	10246	91.1	176.8	94	9046.19	1517.00	1513.52 S	158.89 W	1.33	1.17	PHX-MWD R7
25-Apr	110	10339	90.6	179.1	93	9044.81	1609.81	1606.45 S	155.56 W	2.53	0.54	PHX-MWD R7
25-Apr	111	10432	91.6	179.6	93	9043.03	1702.73	1699.42 S	154.51 W	1.20	1.08	PHX-MWD R7
25-Apr	112	10526	91.0	179.7	94	9040.89	1796.66	1793.40 S	153.93 W	0.65	0.64	PHX-MWD R7
25-Apr	113	10619	93.6	179.9	93	9037.16	1889.54	1886.31 S	153.61 W	2.80	2.80	PHX-MWD R7
26-Apr	114	10712	92.9	179.3	93	9031.89	1982.34	1979.16 S	152.96 W	0.99	0.75	PHX-MWD R7
26-Apr	115	10806	91.9	180.6	94	9027.95	2076.23	2073.08 S	152.88 W	1.74	1.06	PHX-MWD R7
26-Apr	116	10899	91.3	181.0	93	9025.36	2169.18	2166.03 S	154.18 W	0.78	0.65	PHX-MWD R7
26-Apr	117	10992	90.9	181.5	93	9023.57	2262.17	2258.99 S	156.20 W	0.69	0.43	PHX-MWD R7
26-Apr	118	11086	90.0	182.2	94	9022.83	2356.16	2352.94 S	159.24 W	1.21	0.96	PHX-MWD R7
26-Apr	119	11180	89.9	182.6	94	9022.92	2450.15	2446.85 S	163.17 W	0.44	0.11	PHX-MWD R7
26-Apr	120	11274	90.9	180.1	94	9022.26	2544.13	2540.82 S	165.39 W	2.86	1.06	PHX-MWD R7

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