



PHOENIX TECHNOLOGY SERVICES

Survey Calculation Sheet

Company	PT Petroleum	North Reference	Grid	Datum	MSL
Well	University Red 4251 H	Magnetic Delination	8.18	Target TVD	7772
Field	Wolcamp	Convergence Angle	0.79	VS Direction	181.2
Rig	Bison 15	Total Correction	7.39	Ground Level	2950
Phoenix Rep.	B. Harding , S. Johnson				

Date	No.	DEPTH	INC.	AZM	C.L.	T.V.D.	V.S.	N/S	E/W	DLS	B./D.	Source
Tie - In	0	6708	2.20	76.72	0	6707.24	-17.40	17.90 N	23.89 W	0.00	0.00	Gyro
12-Oct	1	6822	2.9	90.6	114	6821.13	-17.98	18.37 N	18.88 W	0.81	0.61	1
12-Oct	2	6854	2.8	92.6	32	6853.09	-17.97	18.33 N	17.29 W	0.44	-0.31	1
12-Oct	3	6885	3.1	67.1	31	6884.05	-18.29	18.62 N	15.76 W	4.30	0.97	1
12-Oct	4	6917	2.7	84.2	32	6916.01	-18.74	19.03 N	14.21 W	2.96	-1.25	1
12-Oct	5	6949	2.7	86.2	32	6947.97	-18.89	19.16 N	12.71 W	0.29	0.00	1
14-Oct	6	7011	2.4	95.5	62	7009.91	-18.92	19.13 N	9.96 W	0.82	-0.48	3
14-Oct	7	7043	3.4	129.7	32	7041.87	-18.28	18.46 N	8.56 W	6.11	3.13	3
14-Oct	8	7075	6.2	152.3	32	7073.76	-16.18	16.32 N	7.03 W	10.40	8.75	3
14-Oct	9	7107	9.3	161.0	32	7105.46	-12.24	12.35 N	5.38 W	10.33	9.69	3
14-Oct	10	7139	12.4	164.4	32	7136.89	-6.52	6.59 N	3.62 W	9.89	9.69	3
14-Oct	11	7171	14.7	163.3	32	7168.00	0.64	0.61 S	1.53 W	7.23	7.19	3
14-Oct	12	7203	16.5	165.4	32	7198.82	8.87	8.89 S	0.79 E	5.89	5.63	3
14-Oct	13	7233	18.4	167.9	30	7227.43	17.58	17.65 S	2.85 E	6.81	6.33	3
14-Oct	14	7264	19.6	169.3	31	7256.75	27.43	27.54 S	4.84 E	4.14	3.87	3
14-Oct	15	7296	20.8	172.4	32	7286.78	38.30	38.45 S	6.59 E	5.02	3.75	3
14-Oct	16	7328	22.3	174.8	32	7316.54	49.95	50.12 S	7.89 E	5.44	4.69	3
14-Oct	17	7360	24.4	176.1	32	7345.92	62.57	62.77 S	8.89 E	6.76	6.56	3
14-Oct	18	7392	26.5	176.2	32	7374.81	76.27	76.49 S	9.81 E	6.56	6.56	3
15-Oct	19	7424	28.5	178.0	32	7403.19	91.00	91.24 S	10.55 E	6.77	6.25	3
15-Oct	20	7456	30.4	179.1	32	7431.06	106.72	106.97 S	10.95 E	6.17	5.94	3
15-Oct	21	7488	32.5	180.4	32	7458.36	123.41	123.66 S	11.02 E	6.90	6.56	3
15-Oct	22	7519	35.2	180.9	31	7484.10	140.67	140.93 S	10.82 E	8.76	8.71	3
15-Oct	23	7551	37.5	182.0	32	7509.87	159.64	159.89 S	10.33 E	7.47	7.19	3
15-Oct	24	7583	39.4	183.9	32	7534.93	179.53	179.76 S	9.30 E	6.99	5.94	3
15-Oct	25	7615	41.0	185.6	32	7559.37	200.14	200.34 S	7.59 E	6.06	5.00	3
15-Oct	26	7647	43.2	186.0	32	7583.11	221.52	221.68 S	5.42 E	6.93	6.88	3
15-Oct	27	7679	45.1	185.9	32	7606.07	243.73	243.85 S	3.11 E	5.94	5.94	3
15-Oct	28	7711	47.3	185.1	32	7628.22	266.76	266.84 S	0.90 E	7.11	6.87	3
15-Oct	29	7742	49.9	184.6	31	7648.72	289.96	290.00 S	1.07 W	8.47	8.39	3
15-Oct	30	7774	52.4	183.9	32	7668.79	314.85	314.85 S	2.91 W	8.00	7.81	3
16-Oct	31	7806	55.5	182.6	32	7687.62	340.70	340.68 S	4.37 W	10.23	9.69	4
16-Oct	32	7838	58.6	182.6	32	7705.03	367.54	367.50 S	5.59 W	9.69	9.69	4
16-Oct	33	7870	62.8	182.3	32	7720.68	395.43	395.38 S	6.78 W	13.15	13.13	4
16-Oct	34	7904	68.2	182.7	34	7734.78	426.35	426.27 S	8.13 W	15.92	15.88	4
16-Oct	35	7933	73.5	183.4	29	7744.29	453.72	453.62 S	9.59 W	18.42	18.28	5
16-Oct	36	7965	78.1	183.1	32	7752.13	484.72	484.59 S	11.35 W	14.40	14.38	5
17-Oct	37	7997	80.0	182.6	32	7758.21	516.12	515.96 S	12.91 W	6.13	5.94	5
17-Oct	38	8029	81.1	182.7	32	7763.47	547.67	547.49 S	14.37 W	3.45	3.44	5
17-Oct	39	8061	82.1	182.9	32	7768.14	579.32	579.11 S	15.91 W	3.19	3.13	5
17-Oct	40	8093	84.6	182.9	32	7771.85	611.08	610.85 S	17.52 W	7.81	7.81	5
17-Oct	41	8124	85.9	183.1	31	7774.41	641.96	641.70 S	19.14 W	4.24	4.19	5

Date	No.	DEPTH	INC.	AZM	C.L.	T.V.D.	V.S.	N/S	E/W	DLS	B./D.	Source
17-Oct	42	8156	89.1	182.6	32	7775.81	673.91	673.63 S	20.73 W	10.12	10.00	5
17-Oct	43	8188	91.0	181.9	32	7775.78	705.91	705.60 S	21.98 W	6.33	5.94	5
17-Oct	44	8252	91.9	182.5	64	7774.16	769.87	769.53 S	24.44 W	1.69	1.41	5
17-Oct	45	8348	90.0	180.6	96	7772.57	865.85	865.48 S	27.04 W	2.80	-1.98	5
17-Oct	46	8443	90.6	182.4	95	7772.07	960.84	960.44 S	29.52 W	2.00	0.63	5
17-Oct	47	8539	88.1	179.7	96	7773.16	1056.82	1056.40 S	31.28 W	3.83	-2.60	5
17-Oct	48	8635	90.0	181.5	96	7774.75	1152.79	1152.37 S	32.29 W	2.73	1.98	5
17-Oct	49	8730	89.1	181.4	95	7775.50	1247.79	1247.34 S	34.69 W	0.95	-0.95	5
17-Oct	50	8826	91.1	181.2	96	7775.33	1343.78	1343.31 S	36.87 W	2.09	2.08	5
17-Oct	51	8922	91.3	181.1	96	7773.32	1439.76	1439.27 S	38.79 W	0.23	0.21	5
17-Oct	52	9017	89.4	178.7	95	7772.74	1534.73	1534.26 S	38.63 W	3.22	-2.00	5
17-Oct	53	9113	90.8	179.6	96	7772.57	1630.66	1630.24 S	37.21 W	1.73	1.46	5
17-Oct	54	9209	92.5	180.9	96	7769.81	1726.60	1726.20 S	37.62 W	2.23	1.77	5
17-Oct	55	9304	92.4	181.7	95	7765.75	1821.52	1821.08 S	39.78 W	0.85	-0.11	5
17-Oct	56	9400	91.4	181.5	96	7762.57	1917.46	1916.99 S	42.46 W	1.06	-1.04	5
17-Oct	57	9495	91.3	181.7	95	7760.33	2012.43	2011.93 S	45.11 W	0.24	-0.11	5
17-Oct	58	9591	91.3	181.4	96	7758.15	2108.40	2107.87 S	47.70 W	0.31	0.00	5
17-Oct	59	9687	91.5	181.9	96	7755.80	2204.37	2203.80 S	50.47 W	0.56	0.21	5
17-Oct	60	9782	91.7	181.7	95	7753.15	2299.33	2298.72 S	53.45 W	0.30	0.21	5
17-Oct	61	9878	94.0	182.8	96	7748.38	2395.19	2394.52 S	57.21 W	2.66	2.40	5
18-Oct	62	9973	90.0	179.7	95	7745.06	2490.10	2489.40 S	59.28 W	5.33	-4.21	5
18-Oct	63	10069	88.5	179.1	96	7746.32	2586.04	2585.39 S	58.27 W	1.68	-1.56	5
18-Oct	64	10164	89.8	180.0	95	7747.73	2680.99	2680.37 S	57.53 W	1.66	1.37	5
18-Oct	65	10260	90.8	181.1	96	7747.23	2776.98	2776.36 S	58.45 W	1.55	1.04	5
18-Oct	66	10355	89.2	179.4	95	7747.23	2871.96	2871.36 S	58.86 W	2.46	-1.68	5
18-Oct	67	10451	90.5	180.3	96	7747.31	2967.93	2967.35 S	58.61 W	1.56	1.25	5
18-Oct	68	10547	91.0	179.2	96	7746.05	3063.89	3063.34 S	58.19 W	1.26	0.52	5
18-Oct	69	10642	90.8	178.0	95	7744.56	3158.78	3158.30 S	55.87 W	1.28	-0.21	5
18-Oct	70	10738	93.6	179.7	96	7740.88	3254.62	3254.20 S	53.95 W	3.41	2.92	5
18-Oct	71	10834	94.1	180.9	96	7734.43	3350.39	3349.98 S	54.45 W	1.35	0.52	5
18-Oct	72	10929	91.2	179.6	95	7730.04	3445.26	3444.86 S	54.86 W	3.34	-3.05	5
18-Oct	73	11025	92.3	179.0	96	7727.11	3541.16	3540.81 S	53.69 W	1.31	1.15	5
18-Oct	74	11120	95.1	180.9	95	7720.98	3635.93	3635.60 S	53.60 W	3.56	2.95	5
18-Oct	75	11216	93.5	181.7	96	7713.78	3731.65	3731.30 S	55.78 W	1.86	-1.67	5
19-Oct	76	11312	93.5	182.9	96	7707.92	3827.46	3827.04 S	59.62 W	1.25	0.00	5
19-Oct	77	11407	93.4	182.3	95	7702.20	3922.25	3921.77 S	63.92 W	0.64	-0.11	5
19-Oct	78	11503	93.3	182.3	96	7696.59	4018.07	4017.53 S	67.77 W	0.10	-0.10	5
19-Oct	79	11598	86.7	181.6	95	7696.59	4113.01	4112.42 S	71.00 W	6.99	-6.95	6
19-Oct	80	11694	87.8	182.5	96	7701.20	4208.89	4208.25 S	74.43 W	1.48	1.15	6
19-Oct	81	11790	88.4	182.0	96	7704.38	4304.82	4304.12 S	78.20 W	0.81	0.63	6
19-Oct	82	11885	90.5	181.7	95	7705.29	4399.80	4399.06 S	81.26 W	2.23	2.21	6
19-Oct	83	11981	92.0	182.5	96	7703.20	4495.76	4494.97 S	84.78 W	1.77	1.56	6
19-Oct	84	12076	92.1	182.9	95	7699.80	4590.67	4589.80 S	89.25 W	0.43	0.11	6
20-Oct	85	12172	92.1	182.2	96	7696.28	4686.57	4685.64 S	93.52 W	0.73	0.00	6
20-Oct	86	12267	88.6	182.4	95	7695.70	4781.54	4780.55 S	97.33 W	3.69	-3.68	6
20-Oct	87	12363	89.1	183.1	96	7697.63	4877.48	4876.42 S	101.94 W	0.90	0.52	6
20-Oct	88	12459	90.8	185.1	96	7697.71	4973.35	4972.16 S	108.80 W	2.73	1.77	6
20-Oct	89	12554	90.7	184.3	95	7696.47	5068.16	5066.83 S	116.58 W	0.85	-0.11	6
20-Oct	90	12650	91.1	185.0	96	7694.96	5163.97	5162.51 S	124.36 W	0.84	0.42	6
20-Oct	91	12745	89.5	184.3	95	7694.46	5258.79	5257.19 S	132.06 W	1.84	-1.68	6
20-Oct	92	12841	89.2	181.3	96	7695.55	5354.74	5353.06 S	136.75 W	3.14	-0.31	6
20-Oct	93	12936	89.8	179.8	95	7696.38	5449.73	5448.05 S	137.66 W	1.70	0.63	6
20-Oct	94	13031	91.0	180.9	95	7695.72	5544.71	5543.04 S	138.24 W	1.71	1.26	6
20-Oct	95	13127	88.9	179.3	96	7695.80	5640.68	5639.03 S	138.41 W	2.75	-2.19	6
20-Oct	96	13222	89.2	179.7	95	7697.38	5735.63	5734.01 S	137.58 W	0.53	0.32	6
20-Oct	97	13317	88.5	179.7	95	7699.28	5830.58	5828.99 S	137.09 W	0.74	-0.74	6

Date	No.	DEPTH	INC.	AZM	C.L.	T.V.D.	V.S.	N/S	E/W	DLS	B./D.	Source
20-Oct	98	13413	90.7	180.9	96	7699.95	5926.56	5924.98 S	137.59 W	2.61	2.29	6
20-Oct	99	13508	91.1	180.7	95	7698.46	6021.54	6019.96 S	138.91 W	0.47	0.42	6
20-Oct	100	13602	90.0	180.3	94	7697.56	6115.53	6113.95 S	139.73 W	1.25	-1.17	6
20-Oct	101	13699	90.4	181.6	97	7697.22	6212.53	6210.93 S	141.34 W	1.40	0.41	6
20-Oct	102	13795	91.1	182.8	96	7695.96	6308.50	6306.85 S	145.03 W	1.45	0.73	6
20-Oct	103	13891	89.0	179.1	96	7695.88	6404.48	6402.82 S	146.62 W	4.43	-2.19	6
20-Oct	104	13986	87.8	178.3	95	7698.53	6499.35	6497.75 S	144.46 W	1.52	-1.26	6
20-Oct	105	14082	90.9	179.1	96	7699.62	6595.24	6593.71 S	142.29 W	3.33	3.23	6
21-Oct	106	14177	92.9	179.3	95	7696.47	6690.13	6688.64 S	140.96 W	2.12	2.11	6
21-Oct	107	14273	92.8	178.3	96	7691.70	6785.92	6784.50 S	138.95 W	1.05	-0.10	6
21-Oct	108	14369	91.7	177.7	96	7687.93	6881.70	6880.37 S	135.61 W	1.30	-1.15	6
21-Oct	109	14464	92.4	179.6	95	7684.53	6976.54	6975.28 S	133.37 W	2.13	0.74	6
21-Oct	110	14560	91.7	179.7	96	7681.10	7072.45	7071.21 S	132.78 W	0.74	-0.73	6
21-Oct	111	14655	92.8	180.6	95	7677.37	7167.36	7166.14 S	133.03 W	1.50	1.16	6
21-Oct	112	14751	93.0	179.7	96	7672.51	7263.22	7262.01 S	133.28 W	0.96	0.21	6
20-Oct	113	14846	94.4	179.7	95	7666.38	7357.98	7356.81 S	132.79 W	1.47	1.47	6
20-Oct	114	14942	93.1	181.3	96	7660.10	7453.77	7452.60 S	133.62 W	2.14	-1.35	6
20-Oct	115	15038	93.5	181.1	96	7654.57	7549.61	7548.41 S	135.63 W	0.47	0.42	6
20-Oct	116	15108	93.5	180.4	70	7650.30	7619.47	7618.28 S	136.54 W	1.00	0.00	6
PTB		15170	93.5	180.4	62	7646.52	7681.35	7680.16 S	136.98 W	0.00	0.00	
					0	0.00	0.00	0.00 N	0.00 E	0.00	0.00	