

ADVANTAGE Final Survey Listing

REC 10/26/15
30-025-41993



INTEQ

Operator Fasken Oil & Ranch Fields Bone Spring, South API No 300254199300
Well Paloma 21 Federal Com No. 1H Wellbore 1H Orig Hole Rig Nomac 54 Job 6697082

Well Origin

Latitude	32.57 deg	Longitude	-103.57 deg
North Reference	Grid	Drill Depth Zero	Rig Floor
Vertical Datum is	Ground Level	Vertical Datum to DDZ	21.50 ft
Vertical Section North	0.00 ft	Vertical Section East	0.00 ft
Vertical Section Azimuth	181.70 deg	Vertical Section Depth	0.00 ft
Grid Convergence	-0.41 deg	Magnetic Declination	7.37 deg
Total Correction	6.96 deg	TVD Calculation Method	Minimum Curvature
D-raw Calculation	Magcorr1	Local Magnetic Field	48479 nT
Local Magnetic Dip Angle	60.42 deg	Local Gravity Field	9.795 m/s^2

Tie In	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Temperature degF	CRS LEN ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	100.00	0.50	293.50	0.17	-0.40	100.00	-0.16		100.00	0.50	0.50	-66.50
	200.00	0.50	273.60	0.38	-1.24	199.99	-0.34		100.00	0.17	0.00	-19.90
	300.00	0.70	281.30	0.52	-2.27	299.99	-0.45		100.00	0.22	0.20	7.70
	400.00	0.80	284.80	0.82	-3.54	399.98	-0.71		100.00	0.11	0.10	3.50
	500.00	0.80	282.10	1.15	-4.90	499.97	-1.00		100.00	0.04	0.00	-2.70
	600.00	0.90	281.80	1.45	-6.35	599.96	-1.26		100.00	0.10	0.10	-0.30
	700.00	1.00	291.20	1.93	-7.94	699.95	-1.69		100.00	0.18	0.10	9.40
	800.00	0.90	292.30	2.54	-9.48	799.93	-2.26		100.00	0.10	-0.10	1.10
	900.00	0.70	292.30	3.07	-10.77	899.92	-2.75		100.00	0.20	-0.20	0.00
	1000.00	0.90	291.60	3.59	-12.06	999.91	-3.23		100.00	0.20	0.20	-0.70
	1100.00	0.90	290.30	4.15	-13.53	1099.90	-3.75		100.00	0.02	0.00	-1.30
	1200.00	0.80	305.00	4.83	-14.84	1199.89	-4.38		100.00	0.24	-0.10	14.70
	1300.00	1.10	286.70	5.50	-16.33	1299.88	-5.02		100.00	0.42	0.30	-18.30
	1400.00	0.80	272.10	5.80	-17.95	1399.86	-5.27		100.00	0.38	-0.30	-14.60
	1500.00	0.50	262.20	5.77	-19.08	1499.86	-5.20		100.00	0.32	-0.30	-9.90
	1600.00	0.60	260.80	5.63	-20.03	1599.85	-5.03		100.00	0.10	0.10	-1.40
	1700.00	0.20	275.90	5.56	-20.72	1699.85	-4.95		100.00	0.41	-0.40	15.10
	1800.00	0.30	274.30	5.60	-21.15	1799.85	-4.97		100.00	0.10	0.10	-1.60
	1900.00	0.20	196.90	5.45	-21.46	1899.85	-4.81		100.00	0.32	-0.10	-77.40
	2000.00	0.10	261.80	5.27	-21.60	1999.85	-4.63		100.00	0.18	-0.10	64.90
	2100.00	0.10	132.00	5.20	-21.62	2099.85	-4.56		100.00	0.18	0.00	-129.80
	2200.00	0.10	355.20	5.23	-21.56	2199.85	-4.59		100.00	0.19	0.00	-136.80
	2300.00	0.20	338.80	5.48	-21.63	2299.85	-4.84		100.00	0.11	0.10	-16.40
	2400.00	0.10	22.50	5.72	-21.66	2399.85	-5.08		100.00	0.15	-0.10	43.70
	2500.00	0.20	30.30	5.96	-21.54	2499.85	-5.31		100.00	0.10	0.10	7.80
	2600.00	0.20	26.40	6.26	-21.38	2599.84	-5.63		100.00	0.01	0.00	-3.90
	2700.00	0.40	331.70	6.73	-21.46	2699.84	-6.09		100.00	0.33	0.20	-54.70
	2800.00	0.40	248.30	6.90	-21.95	2799.84	-6.25		100.00	0.53	0.00	-83.40
	2900.00	0.30	180.30	6.51	-22.28	2899.84	-5.85		100.00	0.40	-0.10	-68.00
	3000.00	0.60	78.20	6.36	-21.77	2999.84	-5.71		100.00	0.72	0.30	-102.10
	3100.00	0.90	5.80	7.25	-21.18	3099.83	-6.62		100.00	0.92	0.30	-72.40
	3200.00	1.20	275.90	8.14	-22.14	3199.82	-7.48		100.00	1.50	0.30	-89.90
	3300.00	0.70	219.40	7.77	-23.57	3299.81	-7.07		100.00	1.00	-0.50	-56.50
	3400.00	1.10	82.10	7.43	-23.01	3399.80	-6.75		100.00	1.68	0.40	-137.30
	3500.00	1.10	25.80	8.43	-21.64	3499.79	-7.78		100.00	1.04	0.00	-56.30
	3600.00	0.90	336.30	10.01	-21.53	3599.77	-9.37		100.00	0.86	-0.20	-49.50
	3700.00	0.60	273.00	10.76	-22.37	3699.77	-10.09		100.00	0.83	-0.30	-63.30
	3800.00	0.50	247.40	10.62	-23.30	3799.76	-9.92		100.00	0.26	-0.10	-25.60
	3900.00	0.30	214.00	10.23	-23.85	3899.76	-9.52		100.00	0.30	-0.20	-33.40
	4000.00	0.10	147.30	9.94	-23.95	3999.76	-9.23		100.00	0.28	-0.20	-66.70
	4100.00	0.10	171.40	9.78	-23.89	4099.76	-9.07		100.00	0.04	0.00	24.10
	4200.00	0.10	164.10	9.61	-23.85	4199.76	-8.90		100.00	0.01	0.00	-7.30
	4300.00	0.00	300.80	9.53	-23.83	4299.76	-8.82		100.00	0.10	-0.10	136.70
	4400.00	0.10	351.70	9.61	-23.84	4399.76	-8.90		100.00	0.10	0.10	50.90
	4500.00	0.20	168.30	9.53	-23.82	4499.76	-8.82		100.00	0.30	0.10	176.60
	4600.00	0.10	215.10	9.29	-23.83	4599.76	-8.58		100.00	0.15	-0.10	46.80
	4700.00	0.10	2.60	9.30	-23.88	4699.76	-8.59		100.00	0.19	0.00	147.50
	4800.00	0.10	334.90	9.47	-23.91	4799.76	-8.76		100.00	0.05	0.00	-27.70
	4900.00	0.10	20.00	9.63	-23.92	4899.76	-8.92		100.00	0.08	0.00	45.10
	5000.00	0.20	308.20	9.82	-24.02	4999.76	-9.10		100.00	0.19	0.10	-71.80

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Tie In	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Temperature degF	CRS LEN ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	
	5100.00	0.20	155.60	9.77	-24.09	5099.76	-9.05		100.00	0.39	0.00	-152.60	
	5200.00	0.30	52.80	9.77	-23.81	5199.76	-9.06		100.00	0.40	0.10	-102.80	
	5300.00	0.70	26.90	10.47	-23.32	5299.75	-9.78		100.00	0.45	0.40	-25.90	
	5436.00	0.90	19.60	12.22	-22.59	5435.74	-11.54		136.00	0.16	0.15	-5.37	
	5515.00	1.00	6.40	13.49	-22.31	5514.73	-12.82		79.00	0.30	0.13	-16.71	
	5610.00	1.10	8.90	15.21	-22.07	5609.71	-14.55		95.00	0.12	0.11	2.63	
	5705.00	1.80	278.60	16.34	-23.41	5704.69	-15.64		95.00	2.23	0.74	-95.05	
	5800.00	4.00	264.10	16.22	-28.18	5799.56	-15.38		95.00	2.42	2.32	-15.26	
	5895.00	4.20	265.00	15.58	-34.94	5894.32	-14.53		95.00	0.22	0.21	0.95	
	5991.00	4.30	263.80	14.88	-42.02	5990.06	-13.63		96.00	0.14	0.10	-1.25	
	6086.00	4.20	268.30	14.39	-49.04	6084.80	-12.93		95.00	0.37	-0.11	4.74	
	6181.00	4.10	267.50	14.14	-55.91	6179.55	-12.48		95.00	0.12	-0.11	-0.84	
	6276.00	4.40	266.70	13.78	-62.94	6274.29	-11.91		95.00	0.32	0.32	-0.84	
	6371.00	3.30	255.50	12.89	-69.22	6369.07	-10.83		95.00	1.40	-1.16	-11.79	
	6466.00	3.10	259.80	11.75	-74.40	6463.92	-9.54		95.00	0.33	-0.21	4.53	
	6561.00	3.30	255.60	10.62	-79.58	6558.78	-8.25		95.00	0.32	0.21	-4.42	
	6656.00	2.90	254.30	9.28	-84.54	6653.64	-6.77		95.00	0.43	-0.42	-1.37	
	6751.00	2.00	256.40	8.24	-88.46	6748.55	-5.62		95.00	0.95	-0.95	2.21	
	6846.00	3.10	267.90	7.76	-92.64	6843.45	-5.01		95.00	1.27	1.16	12.11	
	6941.00	3.30	267.10	7.53	-97.94	6938.31	-4.62		95.00	0.22	0.21	-0.84	
	7036.00	3.00	262.60	7.07	-103.13	7033.16	-4.01		95.00	0.41	-0.32	-4.74	
	7131.00	3.10	264.90	6.52	-108.16	7128.03	-3.31		95.00	0.17	0.11	2.42	
	7225.00	3.10	258.90	5.81	-113.18	7221.89	-2.45		94.00	0.35	0.00	-6.38	
	7321.00	3.20	261.00	4.89	-118.38	7317.74	-1.37		96.00	0.16	0.10	2.19	
	7415.00	3.10	263.50	4.19	-123.49	7411.60	-0.52		94.00	0.18	-0.11	2.66	
	7510.00	3.00	264.60	3.66	-128.52	7506.47	0.15		95.00	0.12	-0.11	1.16	
	7604.00	2.80	265.10	3.24	-133.26	7600.35	0.72		94.00	0.21	-0.21	0.53	
	7700.00	2.80	259.70	2.62	-137.90	7696.23	1.48		96.00	0.27	0.00	-5.62	
	7795.00	2.80	256.60	1.66	-142.44	7791.12	2.56		95.00	0.16	0.00	-3.26	
	7889.00	2.90	258.90	0.67	-147.01	7885.00	3.69		94.00	0.16	0.11	2.45	
	7982.00	2.50	260.40	-0.12	-151.32	7977.90	4.61		93.00	0.44	-0.43	1.61	
	8077.00	3.60	257.70	-1.10	-156.27	8072.76	5.73		95.00	1.17	1.16	-2.84	
	8171.00	3.60	254.70	-2.50	-162.00	8166.58	7.31		94.00	0.20	0.00	-3.19	
	8266.00	3.30	259.00	-3.81	-167.57	8261.41	8.78		95.00	0.42	-0.32	4.53	
	8360.00	2.90	254.00	-4.99	-172.51	8355.27	10.10		94.00	0.51	-0.43	-5.32	
	8455.00	2.80	248.30	-6.51	-176.97	8450.15	11.75		95.00	0.32	-0.11	-6.00	
	8550.00	3.20	266.90	-7.51	-181.78	8545.02	12.90		95.00	1.10	0.42	19.58	
	8645.00	2.60	268.90	-7.69	-186.58	8639.90	13.22		95.00	0.64	-0.63	2.11	
	8739.00	3.20	265.60	-7.93	-191.33	8733.78	13.61		94.00	0.66	0.64	-3.51	
	8833.00	3.40	265.40	-8.36	-196.72	8827.63	14.19		94.00	0.21	0.21	-0.21	
	8929.00	3.50	266.80	-8.75	-202.48	8923.45	14.75		96.00	0.14	0.10	1.46	
	9023.00	2.90	257.70	-9.42	-207.67	9017.30	15.57		94.00	0.83	-0.64	-9.68	
	9118.00	2.20	251.00	-10.52	-211.74	9112.21	16.80		95.00	0.80	-0.74	-7.05	
	9213.00	2.80	261.90	-11.44	-215.77	9207.12	17.84		95.00	0.80	0.63	11.47	
	9308.00	2.30	245.20	-12.57	-219.79	9302.03	19.09		95.00	0.94	-0.53	-17.58	
	9395.00	3.60	259.30	-13.81	-224.06	9388.91	20.45		87.00	1.70	1.49	16.21	
	9490.00	3.50	259.60	-14.89	-229.84	9483.73	21.70		95.00	0.11	-0.11	0.32	
	9585.00	4.10	263.30	-15.81	-236.07	9578.52	22.80		95.00	0.68	0.63	3.89	
	9680.00	2.70	250.60	-16.95	-241.55	9673.35	24.10		95.00	1.66	-1.47	-13.37	
	9774.00	3.30	270.10	-17.68	-246.35	9767.22	24.98		94.00	1.25	0.64	20.74	
	9869.00	3.30	259.80	-18.16	-251.77	9862.07	25.62		95.00	0.62	0.00	-10.84	
	9965.00	2.60	262.60	-18.93	-256.65	9957.94	26.53		96.00	0.74	-0.73	2.92	
	10060.00	2.20	255.80	-19.65	-260.56	10052.86	27.37		95.00	0.52	-0.42	-7.16	
	10154.00	1.90	257.20	-20.44	-263.83	10146.80	28.26		94.00	0.32	-0.32	1.49	
	10250.00	1.80	251.30	-21.27	-266.81	10242.75	29.18		96.00	0.22	-0.10	-6.15	
U	10338.00	1.10	230.50	-22.26	-268.77	10330.72	30.22		88.00	0.98	-0.80	-23.64	
	10401.00	1.28	247.55	-22.91	-269.88	10393.70	30.90	131.1	63.00	0.62	0.28	27.06	
	10422.00	1.42	246.18	-23.10	-270.34	10414.70	31.11	131.1	21.00	0.72	0.70	-6.51	
	10454.00	4.00	205.19	-24.27	-271.17	10446.66	32.31	131.1	32.00	9.59	8.05	-128.08	
	10485.00	7.05	199.20	-27.05	-272.26	10477.52	35.11	131.1	31.00	9.99	9.83	-19.33	

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Tie In	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Temperature degF	CRS LEN ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	10517.00	9.22	198.32	-31.34	-273.71	10509.19	39.44	131.1	32.00	6.81	6.79	-2.76
	10548.00	11.90	200.04	-36.70	-275.59	10539.66	44.86	131.1	31.00	8.69	8.64	5.57
	10580.00	13.78	196.83	-43.44	-277.82	10570.86	51.67	131.1	32.00	6.28	5.87	-10.04
	10612.00	15.84	191.23	-51.37	-279.78	10601.80	59.65	131.1	32.00	7.84	6.45	-17.50
	10643.00	19.57	184.04	-60.71	-280.97	10631.33	69.01	131.1	31.00	13.92	12.02	-23.19
	10675.00	24.40	181.79	-72.66	-281.55	10661.00	80.98	131.1	32.00	15.32	15.09	-7.03
	10706.00	27.68	182.59	-86.26	-282.08	10688.85	94.59	131.1	31.00	10.64	10.58	2.58
	10738.00	29.86	182.98	-101.64	-282.83	10716.90	109.98	133.8	32.00	6.83	6.81	1.21
	10769.00	32.90	182.21	-117.76	-283.55	10743.36	126.12	133.8	31.00	9.90	9.82	-2.48
	10801.00	34.99	181.49	-135.62	-284.13	10769.91	143.99	133.8	32.00	6.64	6.52	-2.24
	10833.00	38.10	179.09	-154.67	-284.21	10795.61	163.03	133.8	32.00	10.72	9.74	-7.51
	10864.00	42.17	177.31	-174.63	-283.57	10819.31	182.97	133.8	31.00	13.64	13.13	-5.73
	10896.00	45.86	176.82	-196.84	-282.43	10842.32	205.13	133.8	32.00	11.57	11.52	-1.54
	10928.00	49.83	176.98	-220.52	-281.15	10863.79	228.76	133.8	32.00	12.40	12.40	0.49
	10959.00	53.09	177.26	-244.73	-279.93	10883.10	252.93	133.8	31.00	10.55	10.53	0.93
	10991.00	55.49	177.43	-270.69	-278.73	10901.78	278.84	133.8	32.00	7.52	7.50	0.52
	11022.00	58.13	177.67	-296.60	-277.62	10918.74	304.71	133.8	31.00	8.54	8.52	0.77
	11053.00	61.30	177.62	-323.35	-276.52	10934.37	331.41	136.5	31.00	10.20	10.20	-0.17
	11085.00	63.78	177.75	-351.72	-275.38	10949.13	359.73	136.5	32.00	7.77	7.76	0.42
	11117.00	66.42	178.12	-380.72	-274.33	10962.60	388.69	136.5	32.00	8.31	8.25	1.14
	11149.00	68.65	178.13	-410.28	-273.36	10974.83	418.20	136.5	32.00	6.95	6.95	0.03
	11181.00	70.99	177.88	-440.29	-272.31	10985.87	448.17	136.5	32.00	7.38	7.34	-0.78
	11213.00	74.00	178.42	-470.79	-271.33	10995.49	478.63	136.5	32.00	9.52	9.39	1.69
	11244.00	76.36	179.39	-500.75	-270.76	11003.42	508.56	136.5	31.00	8.20	7.61	3.15
	11276.00	79.38	179.60	-532.03	-270.48	11010.15	539.82	136.5	32.00	9.47	9.45	0.66
	11308.00	83.09	179.92	-563.65	-270.35	11015.02	571.42	136.5	32.00	11.63	11.59	0.98
	11371.00	89.35	180.40	-626.48	-270.52	11019.17	634.23	139.2	63.00	9.97	9.95	0.77
	11465.00	89.26	182.81	-720.43	-273.16	11020.31	728.22	139.2	94.00	2.57	-0.10	2.56
	11560.00	88.49	182.56	-815.31	-277.61	11022.17	823.18	141.9	95.00	0.85	-0.81	-0.26
	11655.00	88.55	182.49	-910.18	-281.79	11024.62	918.14	141.9	95.00	0.10	0.06	-0.08
	11750.00	89.11	181.91	-1005.09	-285.43	11026.56	1013.12	144.6	95.00	0.84	0.58	-0.61
	11845.00	89.17	177.75	-1100.06	-285.15	11027.99	1108.04	144.6	95.00	4.38	0.06	-4.38
	11940.00	89.08	177.45	-1194.97	-281.17	11029.45	1202.78	144.6	95.00	0.33	-0.10	-0.32
	12035.00	89.23	177.41	-1289.86	-276.90	11030.85	1297.51	144.6	95.00	0.17	0.16	-0.04
	12130.00	89.20	178.15	-1384.78	-273.22	11032.15	1392.28	144.6	95.00	0.78	-0.03	0.78
	12225.00	89.54	181.71	-1479.76	-273.10	11033.20	1487.21	147.3	95.00	3.77	0.36	3.76
	12319.00	89.57	181.31	-1573.72	-275.58	11033.93	1581.20	147.3	94.00	0.44	0.03	-0.44
	12414.00	89.54	178.64	-1668.71	-275.54	11034.67	1676.15	147.3	95.00	2.80	-0.03	-2.80
	12509.00	89.41	177.20	-1763.64	-272.09	11035.54	1770.94	150.0	95.00	1.53	-0.13	-1.52
	12603.00	89.32	176.97	-1857.51	-267.31	11036.58	1864.63	150.0	94.00	0.26	-0.10	-0.24
	12697.00	89.42	178.76	-1951.44	-263.80	11037.61	1958.41	150.0	94.00	1.90	0.10	1.90
	12792.00	89.42	179.07	-2046.42	-262.00	11038.58	2053.29	150.0	95.00	0.33	-0.00	0.33
	12887.00	89.35	180.05	-2141.41	-261.28	11039.60	2148.22	150.0	95.00	1.03	-0.06	1.03
	12982.00	89.38	179.51	-2236.40	-260.92	11040.65	2243.16	150.0	95.00	0.57	0.03	-0.57
	13077.00	89.48	177.35	-2331.36	-258.32	11041.59	2337.99	150.0	95.00	2.28	0.10	-2.28
	13171.00	89.41	178.20	-2425.28	-254.67	11042.50	2431.77	147.3	94.00	0.91	-0.07	0.90
	13266.00	89.38	176.98	-2520.19	-250.67	11043.50	2526.52	150.0	95.00	1.29	-0.03	-1.29
	13361.00	89.78	177.44	-2615.07	-246.04	11044.19	2621.22	150.0	95.00	0.64	0.42	0.49
	13457.00	89.01	177.85	-2710.99	-242.10	11045.19	2716.97	150.0	96.00	0.91	-0.80	0.43
	13552.00	88.80	177.37	-2805.88	-238.14	11047.01	2811.71	147.3	95.00	0.56	-0.23	-0.51
	13647.00	89.20	180.53	-2900.84	-236.40	11048.67	2906.58	150.0	95.00	3.36	0.42	3.33
	13742.00	88.89	184.40	-2995.72	-240.49	11050.25	3001.54	150.0	95.00	4.09	-0.32	4.07
	13836.00	88.92	183.91	-3089.46	-247.30	11052.04	3095.43	150.0	94.00	0.53	0.03	-0.52
	13931.00	88.86	182.61	-3184.28	-252.70	11053.88	3190.38	150.0	95.00	1.37	-0.06	-1.37
	14026.00	89.11	181.70	-3279.20	-256.26	11055.57	3285.36	152.7	95.00	0.99	0.26	-0.96
	14120.00	89.78	181.11	-3373.17	-258.57	11056.48	3379.35	152.7	94.00	0.95	0.72	-0.62
	14214.00	90.28	179.90	-3467.16	-259.40	11056.42	3473.33	152.7	94.00	1.40	0.52	-1.29
	14309.00	90.34	177.92	-3562.14	-257.60	11055.91	3568.21	152.7	95.00	2.08	0.06	-2.08
	14404.00	90.28	177.85	-3657.07	-254.09	11055.40	3663.00	155.4	95.00	0.10	-0.06	-0.08
	14498.00	90.31	177.45	-3750.99	-250.23	11054.92	3756.76	155.4	94.00	0.42	0.03	-0.42

ADVANTAGE Final Survey Listing



INTEQ

Operator Fasken Oil & Ranch				Fields Bone Spring, South				API No 300254199300				
Well Paloma 21 Federal Com No. 1H				Wellbore 1H Orig Hole				Rig Nomac 54		Job 6697082		
Tie In	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Temperature degF	CRS LEN ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	14593.00	90.37	178.38	-3845.93	-246.77	11054.36	3851.55	155.4	95.00	0.98	0.06	0.98
	14688.00	90.31	178.94	-3940.90	-244.54	11053.80	3946.42	155.4	95.00	0.59	-0.06	0.59
	14783.00	89.05	178.69	-4035.87	-242.57	11054.34	4041.29	155.4	95.00	1.36	-1.33	-0.27
	14878.00	88.06	177.95	-4130.80	-239.79	11056.74	4136.10	158.1	95.00	1.30	-1.04	-0.78
	14973.00	88.00	179.00	-4225.71	-237.26	11060.00	4230.89	155.4	95.00	1.11	-0.06	1.11
	15068.00	88.03	179.10	-4320.64	-235.69	11063.30	4325.73	158.1	95.00	0.10	0.03	0.10
	15162.00	87.97	178.56	-4414.56	-233.77	11066.58	4419.55	158.1	94.00	0.58	-0.06	-0.58
	15256.00	86.95	179.04	-4508.45	-231.79	11070.74	4513.34	158.1	94.00	1.20	-1.08	0.51
	15351.00	86.49	179.90	-4603.29	-230.91	11076.18	4608.11	158.1	95.00	1.03	-0.49	0.91
	15446.00	86.67	179.57	-4698.12	-230.48	11081.84	4702.89	160.8	95.00	0.40	0.19	-0.35
	15541.00	86.67	179.23	-4792.95	-229.48	11087.36	4797.65	160.8	95.00	0.36	0.00	-0.36
	15636.00	86.61	179.35	-4887.78	-228.31	11092.92	4892.40	160.8	95.00	0.15	-0.07	0.13
	15732.00	86.64	178.49	-4983.60	-226.50	11098.57	4988.12	160.8	96.00	0.90	0.03	-0.90
	15827.00	86.76	177.97	-5078.39	-223.57	11104.04	5082.79	160.8	95.00	0.56	0.13	-0.54
	15922.00	86.67	178.17	-5173.18	-220.38	11109.47	5177.45	163.5	95.00	0.23	-0.10	0.21
	16017.00	86.67	178.19	-5267.98	-217.36	11114.99	5272.11	163.5	95.00	0.03	-0.00	0.03
	16112.00	86.86	179.12	-5362.80	-215.14	11120.35	5366.82	163.5	95.00	0.99	0.19	0.97
	16207.00	88.09	179.82	-5457.70	-214.25	11124.53	5461.65	163.5	95.00	1.49	1.30	0.74
	16302.00	88.77	179.69	-5552.66	-213.85	11127.14	5556.56	163.5	95.00	0.72	0.71	-0.13
	16397.00	88.71	180.76	-5647.64	-214.22	11129.23	5651.51	163.5	95.00	1.13	-0.07	1.13
	16491.00	88.58	180.67	-5741.60	-215.40	11131.45	5745.47	163.5	94.00	0.16	-0.13	-0.10
	16585.00	88.58	180.58	-5835.57	-216.42	11133.78	5839.42	166.2	94.00	0.10	-0.00	-0.10
	16680.00	88.68	180.49	-5930.54	-217.31	11136.05	5934.37	166.2	95.00	0.13	0.10	-0.09
	16775.00	88.71	179.87	-6025.51	-217.60	11138.22	6029.31	166.2	95.00	0.66	0.03	-0.66
	16870.00	88.71	179.63	-6120.49	-217.19	11140.36	6124.24	168.9	95.00	0.25	-0.00	-0.25
	16963.00	88.61	179.54	-6213.46	-216.51	11142.54	6217.15	166.2	93.00	0.14	-0.10	-0.10
	17057.00	88.52	179.84	-6307.43	-216.00	11144.88	6311.06	168.9	94.00	0.33	-0.10	0.31
	17152.00	88.86	179.09	-6402.40	-215.11	11147.05	6405.96	168.9	95.00	0.86	0.36	-0.79
	17247.00	88.09	179.83	-6497.36	-214.21	11149.58	6500.85	168.9	95.00	1.12	-0.81	0.78
	17341.00	87.47	180.41	-6591.29	-214.40	11153.22	6594.75	168.9	94.00	0.90	-0.66	0.62
	17436.00	88.86	179.76	-6686.24	-214.54	11156.25	6689.66	168.9	95.00	1.61	1.46	-0.68
	17531.00	90.03	179.41	-6781.23	-213.85	11157.17	6784.59	168.9	95.00	1.29	1.23	-0.37
	17626.00	90.06	178.26	-6876.21	-211.92	11157.10	6879.47	168.9	95.00	1.21	0.03	-1.21
	17720.00	90.06	177.12	-6970.13	-208.13	11157.00	6973.23	171.6	94.00	1.21	-0.00	-1.21
	17815.00	89.97	177.70	-7065.03	-203.84	11156.97	7067.97	171.6	95.00	0.62	-0.10	0.61
	17909.00	90.00	176.15	-7158.89	-198.80	11157.00	7161.64	168.9	94.00	1.66	0.03	-1.66
	18003.00	90.09	174.31	-7252.56	-190.98	11156.92	7255.04	171.6	94.00	1.96	0.10	-1.95
	18097.00	90.06	173.92	-7346.07	-181.35	11156.79	7348.21	171.6	94.00	0.41	-0.03	-0.41
	18125.00	89.97	173.81	-7373.91	-178.36	11156.79	7375.95	168.9	28.00	0.53	-0.33	-0.42
Projection to TD												
	18152.00	89.97	173.81	-7400.75	-175.45	11156.80	7402.70		27.00	0.00	0.00	0.00
Tie Column Legend: I - interpolated tie-point, S - survey station, U - user-defined, T - Surface												
Page 4												

Fasken Oil & Ranch

Lea County, NM (NAD27 NME)

Paloma 21 Federal

#1H

WB1 / Job #1411774

Survey: Phoenix MWD Survey

Standard Survey Report

30 September, 2014



Phoenix Technology Services

Survey Report



Company:	Fasken Oil & Ranch	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3658.90usft (Nomac 54)
Site:	Paloma 21 Federal	MD Reference:	KB @ 3658.90usft (Nomac 54)
Well:	#1H	North Reference:	Grid
Wellbore:	WB1 / Job #1411774	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 54)	Database:	GCR DB

Project:	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Paloma 21 Federal				
Site Position:		Northing:	570,184.10 usft	Latitude:	32° 33' 54.83645 N
From:	Map	Easting:	734,806.70 usft	Longitude:	103° 34' 16.23516 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 "

Well	#1H					
Well Position	+N/-S	0.00 usft	Northing:	570,184.10 usft	Latitude:	32° 33' 54.83645 N
	+E/-W	0.00 usft	Easting:	734,806.70 usft	Longitude:	103° 34' 16.23516 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,637.40 usft

Wellbore	WB1 / Job #1411774				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	09/15/14	7.21	60.42	48,494

Design:	Surveys (Nomac 54)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	181.70	

Survey Program		Date	09/30/14	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	5,436.00	VES Gyro Survey (WB1 / Job #1411774)	ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro
5,436.00	10,390.00	Phoenix MWD Survey (WB1 / Job #141177)	PHX+MWD+IGRF	PHX+MWD+IGRF v3:standard declination

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,436.00	0.90	19.64	5,435.75	12.04	-22.23	-11.38	0.00	0.00	0.00
Tie-on to VES Gyro Survey									
5,515.00	1.00	6.40	5,514.73	13.31	-21.94	-12.65	0.30	0.13	-16.76
First Phoenix MWD Survey									
5,610.00	1.10	8.90	5,609.72	15.03	-21.71	-14.38	0.12	0.11	2.83
5,705.00	1.80	278.60	5,704.70	16.16	-23.05	-15.47	2.23	0.74	-95.05
5,800.00	4.00	264.10	5,799.57	16.04	-27.82	-15.21	2.42	2.32	-15.25
5,895.00	4.20	265.90	5,894.33	15.45	-34.58	-14.42	0.25	0.21	1.89
5,991.00	4.30	263.80	5,990.06	14.81	-41.67	-13.57	0.19	0.10	-2.19

Phoenix Technology Services

Survey Report



Company:	Fasken Oil & Ranch	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3658.90usft (Nomac 54)
Site:	Paloma 21 Federal	MD Reference:	KB @ 3658.90usft (Nomac 54)
Well:	#1H	North Reference:	Grid
Wellbore:	WB1 / Job #1411774	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 54)	Database:	GCR DB

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,086.00	4.20	268.30	6,084.80	14.32	-48.69	-12.87	0.37	-0.11	4.74
6,181.00	4.10	267.50	6,179.55	14.07	-55.56	-12.42	0.12	-0.11	-0.84
6,276.00	4.40	266.70	6,274.29	13.71	-62.59	-11.85	0.32	0.32	-0.84
6,371.00	3.30	255.50	6,369.08	12.82	-68.87	-10.77	1.40	-1.16	-11.79
6,466.00	3.10	259.80	6,463.93	11.68	-74.05	-9.48	0.33	-0.21	4.53
6,561.00	3.30	255.60	6,558.78	10.55	-79.22	-8.19	0.32	0.21	-4.42
6,656.00	2.90	254.30	6,653.64	9.22	-84.19	-6.71	0.43	-0.42	-1.37
6,751.00	2.00	256.40	6,748.55	8.18	-88.11	-5.56	0.95	-0.95	2.21
6,846.00	3.10	267.90	6,843.46	7.69	-92.29	-4.95	1.27	1.16	12.11
6,941.00	3.30	267.10	6,938.31	7.46	-97.59	-4.56	0.22	0.21	-0.84
7,036.00	3.00	262.60	7,033.17	7.00	-102.78	-3.95	0.41	-0.32	-4.74
7,131.00	3.10	264.90	7,128.03	6.45	-107.81	-3.25	0.17	0.11	2.42
7,225.00	3.10	258.90	7,221.90	5.74	-112.83	-2.39	0.35	0.00	-6.38
7,321.00	3.20	261.00	7,317.75	4.82	-118.03	-1.31	0.16	0.10	2.19
7,415.00	3.10	263.50	7,411.61	4.12	-123.14	-0.46	0.18	-0.11	2.66
7,510.00	3.00	264.60	7,506.47	3.59	-128.17	0.21	0.12	-0.11	1.18
7,604.00	2.80	265.10	7,600.35	3.17	-132.91	0.78	0.21	-0.21	0.53
7,700.00	2.80	259.70	7,696.24	2.55	-137.55	1.53	0.27	0.00	-5.63
7,795.00	2.80	256.60	7,791.13	1.59	-142.09	2.62	0.16	0.00	-3.26
7,889.00	2.90	258.90	7,885.01	0.60	-146.66	3.75	0.16	0.11	2.45
7,982.00	2.50	260.40	7,977.91	-0.19	-150.97	4.66	0.44	-0.43	1.61
8,077.00	3.60	257.70	8,072.77	-1.17	-155.92	5.79	1.17	1.16	-2.84
8,171.00	3.60	254.70	8,166.59	-2.57	-161.65	7.37	0.20	0.00	-3.19
8,266.00	3.30	259.00	8,261.41	-3.88	-167.21	8.84	0.42	-0.32	4.53
8,360.00	2.90	254.00	8,355.28	-5.06	-172.15	10.16	0.51	-0.43	-5.32
8,455.00	2.80	248.30	8,450.16	-6.58	-176.62	11.81	0.32	-0.11	-6.00
8,550.00	3.20	266.90	8,545.03	-7.58	-181.42	12.96	1.10	0.42	19.58
8,645.00	2.60	268.90	8,639.91	-7.76	-186.23	13.28	0.64	-0.63	2.11
8,739.00	3.20	265.60	8,733.79	-8.00	-190.97	13.67	0.66	0.64	-3.51
8,833.00	3.40	265.40	8,827.63	-8.43	-196.37	14.25	0.21	0.21	-0.21
8,929.00	3.50	266.80	8,923.46	-8.82	-202.13	14.81	0.14	0.10	1.46
9,023.00	2.90	257.70	9,017.31	-9.49	-207.32	15.63	0.83	-0.64	-9.68
9,118.00	2.20	251.00	9,112.22	-10.59	-211.39	16.86	0.60	-0.74	-7.05
9,213.00	2.80	261.90	9,207.13	-11.51	-215.41	17.90	0.80	0.63	11.47
9,308.00	2.30	245.20	9,302.03	-12.64	-219.44	19.14	0.94	-0.53	-17.58
9,395.00	3.60	259.30	9,388.92	-13.88	-223.71	20.51	1.70	1.49	16.21
9,490.00	3.50	259.60	9,483.74	-14.96	-229.49	21.76	0.11	-0.11	0.32
9,585.00	4.10	263.30	9,578.53	-15.68	-235.72	22.86	0.68	0.63	3.89
9,680.00	2.70	250.60	9,673.36	-17.02	-241.20	24.16	1.66	-1.47	-13.37
9,774.00	3.30	270.10	9,767.23	-17.75	-246.00	25.04	1.25	0.64	20.74
9,868.00	3.30	259.80	9,862.07	-18.23	-251.42	25.68	0.62	0.00	-10.84
9,965.00	2.60	262.60	9,957.95	-19.00	-256.30	26.59	0.74	-0.73	2.92
10,060.00	2.20	255.80	10,052.86	-19.72	-260.20	27.43	0.52	-0.42	-7.16

Phoenix Technology Services Survey Report



Company:	Fasken Oil & Ranch	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3658.90usft (Nomac 54)
Site:	Paloma 21 Federal	MD Reference:	KB @ 3658.90usft (Nomac 54)
Well:	#1H	North Reference:	Grid
Wellbore:	WB1 / Job #1411774	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nomac 54)	Database:	GCR DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,154.00	1.90	257.20	10,146.80	-20.51	-263.47	28.32	0.32	-0.32	1.49
10,250.00	1.80	251.30	10,242.75	-21.34	-268.45	29.24	0.22	-0.10	-6.15
10,338.00	1.10	230.50	10,330.72	-22.32	-268.41	30.28	0.98	-0.80	-23.64
Last Phoenix MWD Survey									
10,390.00	1.10	230.50	10,382.72	-22.96	-269.18	30.94	0.00	0.00	0.00
Projection to TD									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,436.00	5,435.75	12.04	-22.23	Tie-on to VES Gyro Survey
5,515.00	5,514.73	13.31	-21.94	First Phoenix MWD Survey
10,338.00	10,330.72	-22.32	-268.41	Last Phoenix MWD Survey
10,390.00	10,382.72	-22.96	-269.18	Projection to TD

Checked By: _____ Approved By: _____ Date: _____