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HOBBSOCD

MARSHALL & WINSTON

Crossroads
Lea County, NM
Crossroads State 22 #1H
VH - Job #32K0910670

SUR @ C-22-09s-33e, 400/N & 1980/W
BHL @ K-22-09s-33e, 2729/N & 1984/W
API # 30-025-39840

Survey: Actual

SDI Standard Survey Report

14 September, 2010

This survey is correct to the best of my knowledge and is supported by actual field data.

Notorized this date 5th of October, 2010.

Notary Signature
County of Midland
State of Texas

NOTARY PUBLIC STATE OF TEXAS
CARRIE REED
My Commission Expires
October 4, 2011

Scientific Drilling International, Inc.

SDI Standard Survey Report

Company:	MARSHALL & WINSTON	**Local Co-ordinate Reference:**	Well Crossroads State 22 #1H
Project:	Crossroads	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	Crossroads State 22 #1H	**North Reference:**	Grid
Wellbore:	VH - Job #32K0910670	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0910670	**Database:**	EDM-Regulatory

Project	Crossroads		
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		

Well	Crossroads State 22 #1H, Directional (Baker Hughes)					
Well Position	**+N/-S**	0.0 usft	**Northing:**	919,481.70 usft	**Latitude:**	33° 31' 30.515 N
	+E/-W	0.0 usft	**Easting:**	739,338.17 usft	**Longitude:**	103° 32' 52.782 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	0.0 usft

Wellbore	VH - Job #32K0910670			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	BGGM2010	9/14/2010	7.83	61.43	49,546

Design	VH - Job #32K0910670				
Audit Notes:					
Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	177.99

Survey Program **Date** 9/14/2010

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	8,310.0	Actual (VH - Job #32K0910670)	KSRG	Keeper Gyro

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.34	272.59	100.0	0.0	-0.3	272.59	0.3
200.0	0.25	296.33	200.0	0.1	-0.8	278.91	0.8
300.0	0.29	259.46	300.0	0.2	-1.2	278.04	1.2
400.0	0.35	287.97	400.0	0.2	-1.8	277.14	1.8
500.0	0.31	232.27	500.0	0.2	-2.3	273.79	2.3
600.0	0.21	245.92	600.0	-0.1	-2.7	268.07	2.7
700.0	0.32	250.99	700.0	-0.3	-3.1	265.27	3.1
800.0	0.37	242.48	800.0	-0.5	-3.6	262.25	3.7
900.0	0.51	221.67	900.0	-1.0	-4.2	256.97	4.3
1,000.0	0.41	196.16	1,000.0	-1.7	-4.6	250.30	4.9
1,100.0	0.33	206.54	1,100.0	-2.3	-4.8	245.05	5.3
1,200.0	0.33	218.33	1,200.0	-2.7	-5.2	242.01	5.8
1,300.0	0.51	224.59	1,300.0	-3.3	-5.6	239.83	6.5
1,400.0	0.55	210.83	1,400.0	-4.0	-6.2	237.12	7.4
1,500.0	0.42	213.56	1,500.0	-4.7	-6.7	234.59	8.2
1,600.0	0.53	237.25	1,600.0	-5.3	-7.2	233.89	9.0

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Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	Crossroads State 22 #1H	**North Reference:**	Grid
Wellbore:	VH - Job #32K0910670	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0910670	**Database:**	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,700.0	0.55	218.97	1,700.0	-5.9	-7.9	233.33	9.9
1,800.0	0.38	218.54	1,800.0	-6.5	-8.4	232.24	10.7
1,900.0	0.39	263.58	1,900.0	-6.8	-9.0	232.74	11.3
2,000.0	0.47	243.09	2,000.0	-7.1	-9.7	233.92	12.0
2,100.0	0.27	258.36	2,100.0	-7.3	-10.3	234.66	12.6
2,200.0	0.39	262.20	2,200.0	-7.4	-10.9	235.76	13.1
2,300.0	0.26	227.97	2,299.9	-7.6	-11.4	236.27	13.7
2,400.0	0.02	289.85	2,399.9	-7.7	-11.5	236.19	13.9
2,500.0	0.18	237.20	2,499.9	-7.8	-11.7	236.26	14.1
2,600.0	0.04	217.71	2,599.9	-7.9	-11.8	236.23	14.3
2,700.0	0.19	213.51	2,699.9	-8.1	-12.0	235.93	14.4
2,800.0	0.18	84.86	2,799.9	-8.2	-11.9	235.38	14.5
2,900.0	0.20	84.42	2,899.9	-8.2	-11.6	234.72	14.2
3,000.0	0.37	65.54	2,999.9	-8.0	-11.1	234.11	13.7
3,100.0	0.35	82.90	3,099.9	-7.9	-10.5	233.18	13.1
3,200.0	0.42	59.15	3,199.9	-7.6	-9.9	232.31	12.5
3,300.0	0.57	79.26	3,299.9	-7.4	-9.1	231.00	11.7
3,400.0	0.38	89.26	3,399.9	-7.3	-8.3	228.70	11.0
3,500.0	0.33	67.59	3,499.9	-7.1	-7.7	227.01	10.5
3,600.0	0.29	85.69	3,599.9	-7.0	-7.1	225.52	10.0
3,700.0	0.09	22.79	3,699.9	-6.9	-6.9	224.74	9.7
3,800.0	0.27	52.18	3,799.9	-6.7	-6.6	224.73	9.4
3,900.0	0.12	56.25	3,899.9	-6.5	-6.4	224.41	9.1
4,000.0	0.23	312.35	3,999.9	-6.3	-6.4	225.55	9.0
4,100.0	0.28	347.88	4,099.9	-5.9	-6.6	228.17	8.9
4,200.0	0.20	301.64	4,199.9	-5.6	-6.8	230.63	8.8
4,300.0	0.39	310.50	4,299.9	-5.3	-7.2	233.83	9.0
4,400.0	0.36	329.30	4,399.9	-4.8	-7.7	237.91	9.0
4,500.0	0.38	288.85	4,499.9	-4.4	-8.1	241.45	9.3
4,600.0	0.58	298.61	4,599.9	-4.1	-8.9	245.38	9.8
4,700.0	0.53	316.80	4,699.9	-3.5	-9.7	250.09	10.3
4,800.0	0.45	311.07	4,799.9	-2.9	-10.3	254.22	10.7
4,900.0	0.55	297.20	4,899.9	-2.4	-11.0	257.57	11.3
5,000.0	0.51	312.70	4,999.9	-1.9	-11.7	260.80	11.9
5,100.0	0.31	300.10	5,099.9	-1.5	-12.3	263.22	12.4
5,200.0	0.49	289.85	5,199.9	-1.2	-12.9	264.78	13.0
5,300.0	0.52	298.54	5,299.9	-0.8	-13.7	266.58	13.8
5,400.0	0.42	290.17	5,399.9	-0.5	-14.5	268.11	14.5
5,500.0	0.49	265.81	5,499.9	-0.4	-15.3	268.56	15.3
5,600.0	0.56	280.64	5,599.9	-0.3	-16.2	268.85	16.2
5,700.0	0.41	285.44	5,699.9	-0.1	-17.0	269.53	17.0
5,800.0	0.45	270.87	5,799.9	0.0	-17.7	269.88	17.7
5,900.0	0.61	281.23	5,899.9	0.1	-18.6	270.22	18.6
6,000.0	0.49	269.44	5,999.9	0.2	-19.6	270.50	19.6

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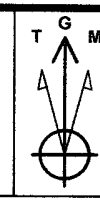
Site:	Lea County, NM	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Well:	Crossroads State 22 #1H	**North Reference:**	Grid
Wellbore:	VH - Job #32K0910670	**Survey Calculation Method:**	Minimum Curvature
Design:	VH - Job #32K0910670	**Database:**	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
6,100.0	0.62	256.63	6,099.9	0.0	-20.5	270.12	20.5
6,200.0	0.76	259.00	6,199.9	-0.2	-21.7	269.45	21.7
6,300.0	0.74	263.78	6,299.8	-0.4	-23.0	268.99	23.0
6,400.0	0.79	267.13	6,399.8	-0.5	-24.3	268.80	24.3
6,500.0	0.99	269.63	6,499.8	-0.5	-25.9	268.78	25.9
6,600.0	1.03	277.60	6,599.8	-0.4	-27.6	269.10	27.7
6,700.0	1.19	274.00	6,699.8	-0.2	-29.6	269.53	29.6
6,800.0	1.27	282.34	6,799.8	0.1	-31.7	270.12	31.7
6,900.0	1.28	281.16	6,899.7	0.5	-33.9	270.87	33.9
7,000.0	1.44	284.27	6,999.7	1.0	-36.2	271.65	36.2
7,100.0	1.56	279.37	7,099.7	1.6	-38.7	272.33	38.8
7,200.0	1.51	282.32	7,199.6	2.1	-41.4	272.87	41.4
7,300.0	1.53	281.67	7,299.6	2.6	-44.0	273.42	44.0
7,400.0	1.58	284.37	7,399.6	3.2	-46.6	273.98	46.7
7,500.0	1.53	293.90	7,499.5	4.1	-49.2	274.79	49.3
7,600.0	1.43	285.63	7,599.5	5.0	-51.6	275.54	51.8
7,700.0	1.48	267.89	7,699.5	5.3	-54.1	275.59	54.3
7,800.0	1.52	248.45	7,799.4	4.8	-56.6	274.80	56.8
7,900.0	1.44	247.15	7,899.4	3.8	-59.0	273.67	59.1
8,000.0	1.42	268.25	7,999.4	3.3	-61.4	273.03	61.5
8,100.0	1.62	273.48	8,099.3	3.3	-64.0	272.95	64.1
8,200.0	1.84	282.36	8,199.3	3.7	-67.0	273.19	67.1
8,300.0	2.04	275.01	8,299.2	4.2	-70.4	273.44	70.5
8,310.0	1.91	276.35	8,309.2	4.3	-70.7	273.45	70.8

Scientific Drilling
Directional Drilling Operations

Project: Crossroads
Lea County, NM
Well: Crossroads State 22 #1H
Wellbore: VH - Job #32K0910670
Design: VH - Job #32K0910670

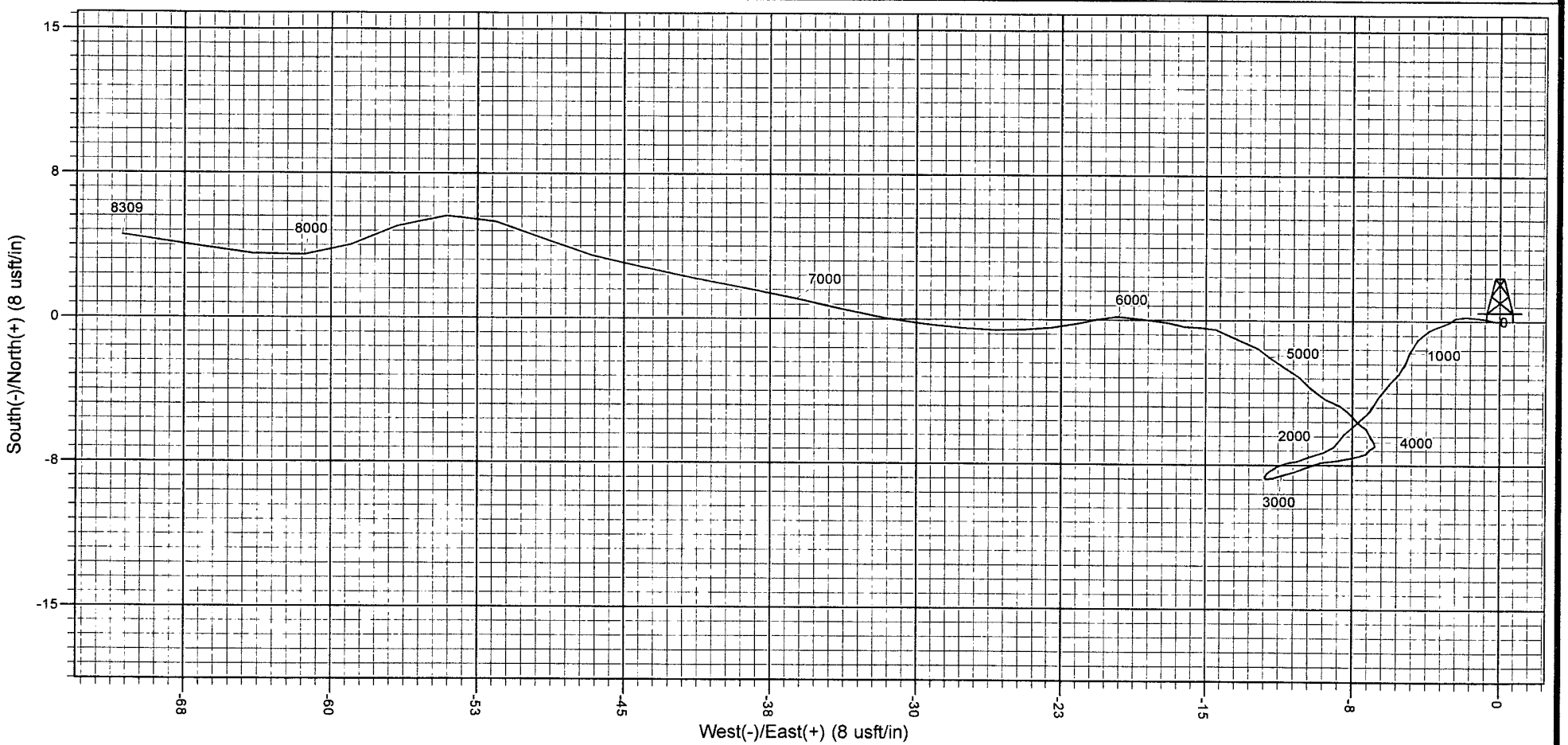


Azimuths to Grid North
True North: -0.43°
Magnetic North: 7.39°

Magnetic Field
Strength: 49546.2snT
Dip Angle: 61.43°
Date: 9/14/2010
Model: BGGM2010

WELL DETAILS: Crossroads State 22 #1H
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	919481.70	739338.17	33° 31' 30.515 N	103° 32' 52.782 W	



PROJECT DETAILS: Crossroads
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS: Lea County, NM
Site Centre Latitude: 33° 31' 30.515 N
Longitude: 103° 32' 52.782 W
Positional Uncertainity: 0.0
Convergence: 0.43
Local North: Grid

Reset Form

SUR @ C-22-09s-33e, 400/N & 1980/W
BHL @ K-22-09s-33e, 2729/N & 1984/W
API # 30-025-39840

BAKER HUGHES
INTEQ

INTEQ

2105 MARKET STREET
MIDLAND, TX 79703
24 HR (432) 694-9517

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STATE OF NEW MEXICO

COUNTY OF Lea

I, Corbin Eilliot , DD Field Service Engineer, certify that I am employed by INTEQ ; did conduct or supervise on the the day(s) of Sep 11, 2010 through Oct 3, 2010 the taking of a MWD survey from a depth of 8,387 feet to a depth of 10,095 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Baker Hughes INTEQ ; that I am authorized and qualified to make this report ; that this survey was conducted at the request of: Marshall & Winston for the Crossroads 22-3H Well, API No. N/A in Lea County, New Mexico;and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by INTEQ.

Corbin Elliott

Field Service Engineer: Corbin Elliott

ACTUAL WELLPATH REPORT (CSV version)
Prepared by Baker Hughes INTEQ
Software System: WellArchitect®2.0

REFERENCE WELLPATH IDENTIFICATION

Operator	Marshall & Winston, INC
Area	Lea County, NM
Field	(Crossroads) Sec 22, T9S, R33E
Facility	Crossroads State 22 No. 3H
Slot	No. 3H SHL
Well	No. 3H
Wellbore	No. 3H AWB
Wellpath	No. 3H AWP
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection :	NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet
North Refe	Grid
Scale	0.999973
Convergen	0.43° East
Software S	WellArchitect®
User	Victor Hernandez
Report Ge	10/15/2010 at 8:40:58 AM
DataBase/	WA_Midland/ev141142.xml

WELLPATI	Local North [ft]	Local East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude
Slot Locati	0	0	736658.6	919437.5	33°31'30.2	103°33'24.436"W
Facility Ref			736658.6	919437.5	33°31'30.2	103°33'24.436"W
Field Refer			739338.2	919481.7	33°31'30.5	103°32'52.782"W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal	SL
Vertical Re	Rig on No. 3H SHL (KB)
MD Refere	Rig on No. 3H SHL (KB)
Field Vertic	Mean Sea Level
Rig on No.	18.00ft
Rig on No.	4377.00ft
GL to Mud	0.00ft
Section Ori	0.00ft
Section Ori	0.00ft
Section Azi	177.88°

WELLPATH DATA Wellbore: No. 3H AWB Wellpath: No. 3H AWP † = interpolated/extrapc

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]
0	0	272.59	0	0	0	0	736658.6
100	0.34	272.59	100	-0.02	0.01	-0.3	736658.3
200	0.25	296.33	200	-0.15	0.12	-0.79	736657.8
300	0.29	259.46	300	-0.22	0.17	-1.23	736657.3

400	0.35	287.97	400	-0.29	0.22	-1.77	736656.8
500	0.31	232.27	499.99	-0.23	0.15	-2.28	736656.3
600	0.21	245.92	599.99	-0.01	-0.09	-2.66	736655.9
700	0.32	250.99	699.99	0.14	-0.26	-3.09	736655.5
800	0.37	242.48	799.99	0.36	-0.5	-3.64	736654.9
900	0.51	221.67	899.99	0.82	-0.98	-4.22	736654.4
1000	0.41	196.16	999.98	1.48	-1.65	-4.62	736654
1100	0.33	206.54	1099.98	2.07	-2.25	-4.85	736653.7
1200	0.33	218.33	1199.98	2.55	-2.74	-5.15	736653.4
1300	0.51	224.59	1299.98	3.07	-3.28	-5.64	736652.9
1400	0.55	210.83	1399.97	3.78	-4.01	-6.2	736652.4
1500	0.42	213.56	1499.97	4.48	-4.73	-6.65	736651.9
1600	0.53	237.25	1599.97	5.01	-5.28	-7.24	736651.3
1700	0.55	218.97	1699.96	5.61	-5.91	-7.93	736650.6
1800	0.38	218.54	1799.96	6.22	-6.54	-8.44	736650.1
1900	0.39	263.58	1899.96	6.5	-6.84	-8.99	736649.6
2000	0.47	243.09	1999.95	6.7	-7.06	-9.69	736648.9
2100	0.27	258.36	2099.95	6.91	-7.29	-10.29	736648.3
2200	0.39	262.2	2199.95	6.98	-7.39	-10.85	736647.7
2300	0.26	227.97	2299.95	7.16	-7.59	-11.36	736647.2
2400	0.02	289.85	2399.95	7.3	-7.73	-11.55	736647
2500	0.18	237.2	2499.95	7.37	-7.81	-11.69	736646.9
2600	0.04	217.71	2599.95	7.48	-7.92	-11.85	736646.7
2700	0.19	213.51	2699.95	7.64	-8.09	-11.96	736646.6
2800	0.18	84.86	2799.95	7.77	-8.21	-11.9	736646.7
2900	0.2	84.42	2899.95	7.75	-8.18	-11.57	736647
3000	0.37	65.54	2999.95	7.61	-8.03	-11.1	736647.5
3100	0.35	82.9	3099.94	7.47	-7.86	-10.5	736648.1
3200	0.42	59.15	3199.94	7.26	-7.63	-9.88	736648.7
3300	0.57	79.26	3299.94	7.01	-7.35	-9.08	736649.5
3400	0.38	89.26	3399.93	6.95	-7.26	-8.26	736650.3
3500	0.33	67.59	3499.93	6.85	-7.14	-7.66	736650.9
3600	0.29	85.69	3599.93	6.74	-7.01	-7.14	736651.4
3700	0.09	22.79	3699.93	6.66	-6.92	-6.86	736651.7
3800	0.27	52.18	3799.93	6.45	-6.71	-6.64	736651.9
3900	0.12	56.25	3899.93	6.26	-6.5	-6.37	736652.2
4000	0.23	312.35	3999.93	6.07	-6.31	-6.43	736652.1
4100	0.28	347.88	4099.93	5.69	-5.94	-6.63	736651.9
4200	0.2	301.64	4199.93	5.35	-5.6	-6.83	736651.7
4300	0.39	310.5	4299.93	5.02	-5.29	-7.24	736651.3
4400	0.36	329.3	4399.92	4.51	-4.8	-7.66	736650.9
4500	0.38	288.85	4499.92	4.12	-4.42	-8.13	736650.4
4600	0.58	298.61	4599.92	3.74	-4.07	-8.89	736649.7
4700	0.53	316.8	4699.91	3.14	-3.49	-9.65	736648.9
4800	0.45	311.07	4799.91	2.52	-2.9	-10.26	736648.3
4900	0.55	297.2	4899.91	2.01	-2.42	-10.99	736647.6
5000	0.51	312.7	4999.9	1.47	-1.9	-11.74	736646.8
5100	0.31	300.1	5099.9	1.01	-1.46	-12.3	736646.3
5200	0.49	289.85	5199.9	0.7	-1.18	-12.94	736645.6
5300	0.52	298.54	5299.89	0.31	-0.82	-13.74	736644.8
5400	0.42	290.17	5399.89	-0.06	-0.48	-14.48	736644.1
5500	0.49	265.81	5499.89	-0.18	-0.38	-15.25	736643.3

5600	0.56	280.64	5599.88	-0.28	-0.32	-16.16	736642.4
5700	0.41	285.44	5699.88	-0.49	-0.14	-16.98	736641.6
5800	0.45	270.87	5799.88	-0.62	-0.04	-17.72	736640.9
5900	0.61	281.23	5899.87	-0.76	0.07	-18.64	736639.9
6000	0.49	269.44	5999.87	-0.9	0.17	-19.59	736639
6100	0.62	256.63	6099.86	-0.8	0.04	-20.54	736638
6200	0.76	259	6199.86	-0.6	-0.21	-21.72	736636.9
6300	0.74	263.78	6299.85	-0.45	-0.41	-23.01	736635.6
6400	0.79	267.13	6399.84	-0.39	-0.51	-24.34	736634.2
6500	0.99	269.63	6499.83	-0.41	-0.55	-25.89	736632.7
6600	1.03	277.6	6599.81	-0.59	-0.44	-27.65	736630.9
6700	1.19	274	6699.79	-0.85	-0.25	-29.57	736629
6800	1.27	282.34	6799.77	-1.24	0.06	-31.69	736626.9
6900	1.28	281.16	6899.74	-1.77	0.52	-33.87	736624.7
7000	1.44	284.27	6999.72	-2.38	1.04	-36.18	736622.4
7100	1.56	279.37	7099.68	-3.01	1.57	-38.75	736619.8
7200	1.51	282.32	7199.65	-3.61	2.08	-41.38	736617.2
7300	1.53	281.67	7299.61	-4.25	2.63	-43.97	736614.6
7400	1.58	284.37	7399.57	-4.96	3.24	-46.61	736612
7500	1.53	293.9	7499.54	-5.94	4.12	-49.17	736609.4
7600	1.43	285.63	7599.5	-6.91	5	-51.59	736607
7700	1.48	267.89	7699.47	-7.29	5.29	-54.08	736604.5
7800	1.52	248.45	7799.44	-6.85	4.75	-56.61	736602
7900	1.44	247.15	7899.4	-5.96	3.78	-59	736599.6
8000	1.42	268.25	7999.37	-5.52	3.25	-61.4	736597.2
8100	1.62	273.48	8099.34	-5.67	3.3	-64.05	736594.5
8200	1.84	282.36	8199.29	-6.21	3.73	-67.02	736591.6
8300	2.04	275.01	8299.24	-6.83	4.23	-70.37	736588.2
8310	1.91	276.35	8309.23	-6.88	4.26	-70.71	736587.9
8387	9	165	8385.92	-1.18	-1.43	-70.42	736588.2
8418	14.6	165	8416.26	4.99	-7.55	-68.78	736589.8
8449	19.8	165	8445.86	13.93	-16.4	-66.41	736592.2
8481	24.9	164.3	8475.45	25.77	-28.13	-63.18	736595.4
8513	30.4	166.7	8503.78	40.27	-42.5	-59.5	736599.1
8544	35.8	167	8529.74	56.88	-58.98	-55.65	736602.9
8576	40.8	169.4	8554.85	76.43	-78.39	-51.62	736607
8608	45.1	172.3	8578.27	98.06	-99.91	-48.17	736610.4
8639	49.7	176.9	8599.25	120.82	-122.61	-46.06	736612.5
8670	54.1	183.1	8618.39	145.17	-146.98	-46.1	736612.5
8702	57.8	183.9	8636.3	171.55	-173.44	-47.72	736610.9
8734	60.5	183.8	8652.71	198.88	-200.85	-49.57	736609
8765	61.9	182.2	8667.64	225.93	-227.98	-50.99	736607.6
8797	64.8	179.9	8682	254.48	-256.57	-51.5	736607.1
8828	68.6	180.7	8694.26	282.92	-285.03	-51.66	736606.9
8859	73	182	8704.45	312.14	-314.29	-52.35	736606.2
8890	76.2	181.7	8712.68	341.95	-344.16	-53.31	736605.3
8921	79.4	181.1	8719.23	372.19	-374.45	-54.05	736604.5
8952	83.6	179.8	8723.81	402.81	-405.1	-54.29	736604.3
8984	86.5	179.1	8726.57	434.67	-436.97	-53.99	736604.6
9016	86.6	178.4	8728.5	466.61	-468.91	-53.29	736605.3
9052	87.8	177.9	8730.26	502.57	-504.84	-52.13	736606.4
9084	89.9	177.2	8730.9	534.56	-536.81	-50.76	736607.8

9115	90.2	177.5	8730.87	565.56	-567.77	-49.33	736609.2
9146	90.1	177.6	8730.79	596.56	-598.74	-48	736610.6
9177	90.4	177.5	8730.66	627.56	-629.72	-46.68	736611.9
9209	90.2	177.7	8730.49	659.55	-661.69	-45.34	736613.2
9241	90.2	177.7	8730.38	691.55	-693.66	-44.05	736614.5
9273	90.2	176.1	8730.26	723.55	-725.61	-42.32	736616.3
9304	90.3	176	8730.13	754.53	-756.54	-40.19	736618.4
9336	90.3	176.2	8729.96	786.52	-788.46	-38.01	736620.6
9368	91.1	176.8	8729.57	818.5	-820.4	-36.06	736622.5
9399	89.2	176.5	8729.49	849.5	-851.35	-34.25	736624.3
9431	89	176.3	8729.99	881.48	-883.28	-32.24	736626.3
9463	89.9	176.5	8730.3	913.47	-915.22	-30.23	736628.3
9494	90	176.9	8730.33	944.46	-946.16	-28.44	736630.1
9526	91.5	177.5	8729.91	976.46	-978.12	-26.88	736631.7
9558	89.6	177.3	8729.6	1008.45	-1010.09	-25.43	736633.1
9589	87.3	176.9	8730.44	1039.44	-1041.03	-23.86	736634.7
9620	88.5	177.5	8731.58	1070.41	-1071.97	-22.35	736636.2
9652	90.9	178.1	8731.74	1102.41	-1103.95	-21.12	736637.5
9684	90.3	179.1	8731.41	1134.4	-1135.94	-20.34	736638.2
9715	90.3	179.8	8731.25	1165.39	-1166.93	-20.04	736638.5
9746	88.4	179	8731.6	1196.38	-1197.93	-19.72	736638.9
9777	87.6	179.1	8732.68	1227.35	-1228.9	-19.2	736639.4
9809	88.6	179.7	8733.74	1259.32	-1260.88	-18.87	736639.7
9840	89.8	179.7	8734.17	1290.3	-1291.88	-18.7	736639.9
9872	90.6	179.3	8734.06	1322.29	-1323.88	-18.43	736640.1
9905	90.8	179.1	8733.66	1355.28	-1356.87	-17.96	736640.6
9936	90.5	179	8733.31	1386.27	-1387.87	-17.45	736641.1
9959	91.3	179.2	8732.94	1409.26	-1410.86	-17.09	736641.5
9990	91.9	179	8732.08	1440.24	-1441.85	-16.6	736642
10015	92	179.4	8731.23	1465.22	-1466.83	-16.25	736642.3
10048	91.4	179.2	8730.25	1498.2	-1499.81	-15.85	736642.7
10055	90.8	178.6	8730.12	1505.19	-1506.81	-15.72	736642.9
10095	90.8	178.6	8729.56	1545.19	-1546.79	-14.74	736643.8

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude
No. 3H PBHL		8768	-4420.56	163.79	736822.4	915017.1	33°30'46.5	103°33'22.

WELLPATH COMPOSITION Ref Wellbore: No. 3H AWB Ref Wellpath: No. 3H AWP

Log Name/	Start MD [ft]	End MD [ft]	Pos Unc Model
GYRO (10(	0	8310	Generic gyro - continuous (Standard)
MWD (838	8310	10055	NaviTrak (Standard)
Projection	10055	10095	Blind Drilling (std)

)lated station

Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
919437.5	33°31'30.2	103°33'24.·	0
919437.6	33°31'30.2	103°33'24.·	0.34
919437.7	33°31'30.2	103°33'24.·	0.15
919437.7	33°31'30.2	103°33'24.·	0.17

919437.8	33°31'30.2	103°33'24.	0.17
919437.7	33°31'30.2	103°33'24.	0.31
919437.5	33°31'30.2	103°33'24.	0.12
919437.3	33°31'30.2	103°33'24.	0.11
919437	33°31'30.2	103°33'24.	0.07
919436.6	33°31'30.2	103°33'24.	0.21
919435.9	33°31'30.2	103°33'24.	0.23
919435.3	33°31'30.2	103°33'24.	0.1
919434.8	33°31'30.2	103°33'24.	0.07
919434.3	33°31'30.2	103°33'24.	0.19
919433.5	33°31'30.2	103°33'24.	0.13
919432.8	33°31'30.2	103°33'24.	0.13
919432.3	33°31'30.2	103°33'24.	0.22
919431.6	33°31'30.2	103°33'24.	0.17
919431	33°31'30.2	103°33'24.	0.17
919430.7	33°31'30.2	103°33'24.	0.3
919430.5	33°31'30.2	103°33'24.	0.17
919430.3	33°31'30.2	103°33'24.	0.22
919430.2	33°31'30.2	103°33'24.	0.12
919430	33°31'30.2	103°33'24.	0.23
919429.8	33°31'30.2	103°33'24.	0.25
919429.7	33°31'30.2	103°33'24.	0.17
919429.6	33°31'30.2	103°33'24.	0.14
919429.5	33°31'30.1	103°33'24.	0.15
919429.3	33°31'30.1	103°33'24.	0.33
919429.4	33°31'30.1	103°33'24.	0.02
919429.5	33°31'30.1	103°33'24.	0.19
919429.7	33°31'30.2	103°33'24.	0.11
919429.9	33°31'30.2	103°33'24.	0.17
919430.2	33°31'30.2	103°33'24.	0.23
919430.3	33°31'30.2	103°33'24.	0.21
919430.4	33°31'30.2	103°33'24.	0.14
919430.5	33°31'30.2	103°33'24.	0.11
919430.6	33°31'30.2	103°33'24.	0.26
919430.8	33°31'30.2	103°33'24.	0.2
919431	33°31'30.2	103°33'24.	0.15
919431.2	33°31'30.2	103°33'24.	0.28
919431.6	33°31'30.2	103°33'24.	0.16
919431.9	33°31'30.2	103°33'24.	0.2
919432.3	33°31'30.2	103°33'24.	0.19
919432.7	33°31'30.2	103°33'24.	0.13
919433.1	33°31'30.2	103°33'24.	0.26
919433.5	33°31'30.2	103°33'24.	0.22
919434.1	33°31'30.2	103°33'24.	0.18
919434.6	33°31'30.2	103°33'24.	0.09
919435.1	33°31'30.2	103°33'24.	0.16
919435.6	33°31'30.2	103°33'24.	0.15
919436.1	33°31'30.2	103°33'24.	0.22
919436.4	33°31'30.2	103°33'24.	0.19
919436.7	33°31'30.2	103°33'24.	0.08
919437.1	33°31'30.2	103°33'24.	0.12
919437.2	33°31'30.2	103°33'24.	0.2

919437.2	33°31'30.2	103°33'24.	0.15
919437.4	33°31'30.2	103°33'24.	0.16
919437.5	33°31'30.2	103°33'24.	0.12
919437.6	33°31'30.2	103°33'24.	0.19
919437.7	33°31'30.2	103°33'24.	0.16
919437.6	33°31'30.2	103°33'24.	0.18
919437.3	33°31'30.2	103°33'24.	0.14
919437.1	33°31'30.2	103°33'24.	0.07
919437	33°31'30.2	103°33'24.	0.07
919437	33°31'30.2	103°33'24.	0.2
919437.1	33°31'30.2	103°33'24.	0.15
919437.3	33°31'30.2	103°33'24.	0.17
919437.6	33°31'30.2	103°33'24.	0.2
919438.1	33°31'30.2	103°33'24.	0.03
919438.6	33°31'30.2	103°33'24.	0.18
919439.1	33°31'30.2	103°33'24.	0.18
919439.6	33°31'30.3	103°33'24.	0.09
919440.2	33°31'30.3	103°33'24.	0.03
919440.8	33°31'30.3	103°33'24.	0.09
919441.7	33°31'30.3	103°33'25.	0.26
919442.5	33°31'30.3	103°33'25.	0.24
919442.8	33°31'30.3	103°33'25.	0.45
919442.3	33°31'30.3	103°33'25.	0.51
919441.3	33°31'30.3	103°33'25.	0.09
919440.8	33°31'30.3	103°33'25.	0.52
919440.8	33°31'30.3	103°33'25.	0.24
919441.3	33°31'30.3	103°33'25.	0.35
919441.8	33°31'30.3	103°33'25.	0.32
919441.8	33°31'30.3	103°33'25.	1.38
919436.1	33°31'30.2	103°33'25.	12.8
919430	33°31'30.2	103°33'25.	18.06
919421.1	33°31'30.1	103°33'25.	16.77
919409.4	33°31'30.0	103°33'25.	15.96
919395	33°31'29.8	103°33'25.	17.53
919378.6	33°31'29.6	103°33'25.	17.43
919359.2	33°31'29.5	103°33'25.	16.3
919337.6	33°31'29.2	103°33'25.	14.79
919314.9	33°31'29.0	103°33'24.	18.42
919290.6	33°31'28.8	103°33'24.	21.18
919264.1	33°31'28.5	103°33'25.	11.75
919236.7	33°31'28.2	103°33'25.	8.44
919209.6	33°31'28.0	103°33'25.	6.39
919181	33°31'27.7	103°33'25.	11.11
919152.5	33°31'27.4	103°33'25.	12.48
919123.3	33°31'27.1	103°33'25.	14.74
919093.4	33°31'26.8	103°33'25.	10.36
919063.1	33°31'26.5	103°33'25.	10.49
919032.5	33°31'26.2	103°33'25.	14.17
919000.6	33°31'25.9	103°33'25.	9.32
918968.7	33°31'25.6	103°33'25.	2.21
918932.7	33°31'25.2	103°33'25.	3.61
918900.8	33°31'24.9	103°33'25.	6.92

918869.8	33°31'24.6	103°33'25.	1.37
918838.8	33°31'24.3	103°33'25.	0.46
918807.8	33°31'24.0	103°33'25.	1.02
918775.9	33°31'23.7	103°33'25.	0.88
918743.9	33°31'23.4	103°33'25.	0
918712	33°31'23.1	103°33'25.	5
918681	33°31'22.7	103°33'24.	0.46
918649.1	33°31'22.4	103°33'24.	0.62
918617.2	33°31'22.1	103°33'24.	3.12
918586.2	33°31'21.8	103°33'24.	6.2
918554.3	33°31'21.5	103°33'24.	0.88
918522.4	33°31'21.2	103°33'24.	2.88
918491.4	33°31'20.9	103°33'24.	1.33
918459.5	33°31'20.6	103°33'24.	5.05
918427.5	33°31'20.2	103°33'24.	5.97
918396.5	33°31'19.9	103°33'24.	7.53
918365.6	33°31'19.6	103°33'24.	4.33
918333.6	33°31'19.3	103°33'24.	7.73
918301.6	33°31'19.0	103°33'24.	3.64
918270.6	33°31'18.7	103°33'24.	2.26
918239.7	33°31'18.4	103°33'24.	6.65
918208.7	33°31'18.1	103°33'24.	2.6
918176.7	33°31'17.8	103°33'24.	3.64
918145.7	33°31'17.4	103°33'24.	3.87
918113.7	33°31'17.1	103°33'24.	2.8
918080.7	33°31'16.8	103°33'24.	0.86
918049.7	33°31'16.5	103°33'24.	1.02
918026.7	33°31'16.3	103°33'24.	3.59
917995.7	33°31'16.0	103°33'24.	2.04
917970.8	33°31'15.7	103°33'24.	1.65
917937.8	33°31'15.4	103°33'24.	1.92
917930.8	33°31'15.3	103°33'24.	12.12
917890.8	33°31'14.9	103°33'24.	0

Shape	Comment
point	

Reset Form

SUR @ C-22-09s-33e, 400/N & 1980/W
BHL @ K-22-09s-33e, 2729/N & 1984/W
API # 30-025-39840

BAKER HUGHES
INTEQ

INTEQ

2105 MARKET STREET
MIDLAND, TX 79703
24 HR (432) 694-9517

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STATE OF NEW MEXICO

COUNTY OF Lea

I, Corbin Eilliot , DD Field Service Engineer, certify that I am employed by INTEQ ; did conduct or supervise on the the day(s) of Oct 3, 2010 through Oct 14, 2010 the taking of a MWD survey from a depth of 9,589 feet to a depth of 10,878 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Baker Hughes INTEQ ; that I am authorized and qualified to make this report ; that this survey was conducted at the request of: Marshall & Winston for the Crossroads 22-3H Well, API No. N/A in Lea County, New Mexico;and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by INTEQ.

Field Service Engineer: Corbin Elliott

ACTUAL WELLPATH REPORT (CSV version)
Prepared by Baker Hughes INTEQ
Software System: WellArchitect®2.0

REFERENCE WELLPATH IDENTIFICATION

Operator	Marshall & Winston, INC
Area	Lea County, NM
Field	(Crossroads) Sec 22, T9S, R33E
Facility	Crossroads State 22 No. 3H
Slot	No. 3H SHL
Well	No. 3H
Wellbore	No. 3H ST AWB
Wellpath	No. 3H ST AWP
Sidetrack	No. 3H AWB at 9589.00 MD

REPORT SETUP INFORMATION

Projection :	NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet
North Refe	Grid
Scale	0.999973
Convergen	0.43° East
Software S	WellArchitect®
User	Victor Hernandez
Report Ge	10/15/2010 at 8:45:47 AM
DataBase/	WA_Midland/ev141142.xml

WELLPATI	Local North [ft]	Local East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude
Slot Locati	0	0	736658.6	919437.5	33°31'30.2	103°33'24.436"W
Facility Ref			736658.6	919437.5	33°31'30.2	103°33'24.436"W
Field Refer			739338.2	919481.7	33°31'30.5	103°32'52.782"W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal	SL
Vertical Re	Rig on No. 3H SHL (KB)
MD Refere	Rig on No. 3H SHL (KB)
Field Vertic	Mean Sea Level
Rig on No.	18.00ft
Rig on No.	4377.00ft
GL to Mud	0.00ft
Section Ori	0.00ft
Section Ori	0.00ft
Section Azi	177.88°

WELLPATH DATA Wellbore: No. 3H ST AWB Wellpath: No. 3H ST AWP † = interpolated/

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]
0	0	272.59	0	0	0	0	736658.6
100	0.34	272.59	100	-0.02	0.01	-0.3	736658.3
200	0.25	296.33	200	-0.15	0.12	-0.79	736657.8
300	0.29	259.46	300	-0.22	0.17	-1.23	736657.3

400	0.35	287.97	400	-0.29	0.22	-1.77	736656.8
500	0.31	232.27	499.99	-0.23	0.15	-2.28	736656.3
600	0.21	245.92	599.99	-0.01	-0.09	-2.66	736655.9
700	0.32	250.99	699.99	0.14	-0.26	-3.09	736655.5
800	0.37	242.48	799.99	0.36	-0.5	-3.64	736654.9
900	0.51	221.67	899.99	0.82	-0.98	-4.22	736654.4
1000	0.41	196.16	999.98	1.48	-1.65	-4.62	736654
1100	0.33	206.54	1099.98	2.07	-2.25	-4.85	736653.7
1200	0.33	218.33	1199.98	2.55	-2.74	-5.15	736653.4
1300	0.51	224.59	1299.98	3.07	-3.28	-5.64	736652.9
1400	0.55	210.83	1399.97	3.78	-4.01	-6.2	736652.4
1500	0.42	213.56	1499.97	4.48	-4.73	-6.65	736651.9
1600	0.53	237.25	1599.97	5.01	-5.28	-7.24	736651.3
1700	0.55	218.97	1699.96	5.61	-5.91	-7.93	736650.6
1800	0.38	218.54	1799.96	6.22	-6.54	-8.44	736650.1
1900	0.39	263.58	1899.96	6.5	-6.84	-8.99	736649.6
2000	0.47	243.09	1999.95	6.7	-7.06	-9.69	736648.9
2100	0.27	258.36	2099.95	6.91	-7.29	-10.29	736648.3
2200	0.39	262.2	2199.95	6.98	-7.39	-10.85	736647.7
2300	0.26	227.97	2299.95	7.16	-7.59	-11.36	736647.2
2400	0.02	289.85	2399.95	7.3	-7.73	-11.55	736647
2500	0.18	237.2	2499.95	7.37	-7.81	-11.69	736646.9
2600	0.04	217.71	2599.95	7.48	-7.92	-11.85	736646.7
2700	0.19	213.51	2699.95	7.64	-8.09	-11.96	736646.6
2800	0.18	84.86	2799.95	7.77	-8.21	-11.9	736646.7
2900	0.2	84.42	2899.95	7.75	-8.18	-11.57	736647
3000	0.37	65.54	2999.95	7.61	-8.03	-11.1	736647.5
3100	0.35	82.9	3099.94	7.47	-7.86	-10.5	736648.1
3200	0.42	59.15	3199.94	7.26	-7.63	-9.88	736648.7
3300	0.57	79.26	3299.94	7.01	-7.35	-9.08	736649.5
3400	0.38	89.26	3399.93	6.95	-7.26	-8.26	736650.3
3500	0.33	67.59	3499.93	6.85	-7.14	-7.66	736650.9
3600	0.29	85.69	3599.93	6.74	-7.01	-7.14	736651.4
3700	0.09	22.79	3699.93	6.66	-6.92	-6.86	736651.7
3800	0.27	52.18	3799.93	6.45	-6.71	-6.64	736651.9
3900	0.12	56.25	3899.93	6.26	-6.5	-6.37	736652.2
4000	0.23	312.35	3999.93	6.07	-6.31	-6.43	736652.1
4100	0.28	347.88	4099.93	5.69	-5.94	-6.63	736651.9
4200	0.2	301.64	4199.93	5.35	-5.6	-6.83	736651.7
4300	0.39	310.5	4299.93	5.02	-5.29	-7.24	736651.3
4400	0.36	329.3	4399.92	4.51	-4.8	-7.66	736650.9
4500	0.38	288.85	4499.92	4.12	-4.42	-8.13	736650.4
4600	0.58	298.61	4599.92	3.74	-4.07	-8.89	736649.7
4700	0.53	316.8	4699.91	3.14	-3.49	-9.65	736648.9
4800	0.45	311.07	4799.91	2.52	-2.9	-10.26	736648.3
4900	0.55	297.2	4899.91	2.01	-2.42	-10.99	736647.6
5000	0.51	312.7	4999.9	1.47	-1.9	-11.74	736646.8
5100	0.31	300.1	5099.9	1.01	-1.46	-12.3	736646.3
5200	0.49	289.85	5199.9	0.7	-1.18	-12.94	736645.6
5300	0.52	298.54	5299.89	0.31	-0.82	-13.74	736644.8
5400	0.42	290.17	5399.89	-0.06	-0.48	-14.48	736644.1
5500	0.49	265.81	5499.89	-0.18	-0.38	-15.25	736643.3

5600	0.56	280.64	5599.88	-0.28	-0.32	-16.16	736642.4
5700	0.41	285.44	5699.88	-0.49	-0.14	-16.98	736641.6
5800	0.45	270.87	5799.88	-0.62	-0.04	-17.72	736640.9
5900	0.61	281.23	5899.87	-0.76	0.07	-18.64	736639.9
6000	0.49	269.44	5999.87	-0.9	0.17	-19.59	736639
6100	0.62	256.63	6099.86	-0.8	0.04	-20.54	736638
6200	0.76	259	6199.86	-0.6	-0.21	-21.72	736636.9
6300	0.74	263.78	6299.85	-0.45	-0.41	-23.01	736635.6
6400	0.79	267.13	6399.84	-0.39	-0.51	-24.34	736634.2
6500	0.99	269.63	6499.83	-0.41	-0.55	-25.89	736632.7
6600	1.03	277.6	6599.81	-0.59	-0.44	-27.65	736630.9
6700	1.19	274	6699.79	-0.85	-0.25	-29.57	736629
6800	1.27	282.34	6799.77	-1.24	0.06	-31.69	736626.9
6900	1.28	281.16	6899.74	-1.77	0.52	-33.87	736624.7
7000	1.44	284.27	6999.72	-2.38	1.04	-36.18	736622.4
7100	1.56	279.37	7099.68	-3.01	1.57	-38.75	736619.8
7200	1.51	282.32	7199.65	-3.61	2.08	-41.38	736617.2
7300	1.53	281.67	7299.61	-4.25	2.63	-43.97	736614.6
7400	1.58	284.37	7399.57	-4.96	3.24	-46.61	736612
7500	1.53	293.9	7499.54	-5.94	4.12	-49.17	736609.4
7600	1.43	285.63	7599.5	-6.91	5	-51.59	736607
7700	1.48	267.89	7699.47	-7.29	5.29	-54.08	736604.5
7800	1.52	248.45	7799.44	-6.85	4.75	-56.61	736602
7900	1.44	247.15	7899.4	-5.96	3.78	-59	736599.6
8000	1.42	268.25	7999.37	-5.52	3.25	-61.4	736597.2
8100	1.62	273.48	8099.34	-5.67	3.3	-64.05	736594.5
8200	1.84	282.36	8199.29	-6.21	3.73	-67.02	736591.6
8300	2.04	275.01	8299.24	-6.83	4.23	-70.37	736588.2
8310	1.91	276.35	8309.23	-6.88	4.26	-70.71	736587.9
8387	9	165	8385.92	-1.18	-1.43	-70.42	736588.2
8418	14.6	165	8416.26	4.99	-7.55	-68.78	736589.8
8449	19.8	165	8445.86	13.93	-16.4	-66.41	736592.2
8481	24.9	164.3	8475.45	25.77	-28.13	-63.18	736595.4
8513	30.4	166.7	8503.78	40.27	-42.5	-59.5	736599.1
8544	35.8	167	8529.74	56.88	-58.98	-55.65	736602.9
8576	40.8	169.4	8554.85	76.43	-78.39	-51.62	736607
8608	45.1	172.3	8578.27	98.06	-99.91	-48.17	736610.4
8639	49.7	176.9	8599.25	120.82	-122.61	-46.06	736612.5
8670	54.1	183.1	8618.39	145.17	-146.98	-46.1	736612.5
8702	57.8	183.9	8636.3	171.55	-173.44	-47.72	736610.9
8734	60.5	183.8	8652.71	198.88	-200.85	-49.57	736609
8765	61.9	182.2	8667.64	225.93	-227.98	-50.99	736607.6
8797	64.8	179.9	8682	254.48	-256.57	-51.5	736607.1
8828	68.6	180.7	8694.26	282.92	-285.03	-51.66	736606.9
8859	73	182	8704.45	312.14	-314.29	-52.35	736606.2
8890	76.2	181.7	8712.68	341.95	-344.16	-53.31	736605.3
8921	79.4	181.1	8719.23	372.19	-374.45	-54.05	736604.5
8952	83.6	179.8	8723.81	402.81	-405.1	-54.29	736604.3
8984	86.5	179.1	8726.57	434.67	-436.97	-53.99	736604.6
9016	86.6	178.4	8728.5	466.61	-468.91	-53.29	736605.3
9052	87.8	177.9	8730.26	502.57	-504.84	-52.13	736606.4
9084	89.9	177.2	8730.9	534.56	-536.81	-50.76	736607.8

9115	90.2	177.5	8730.87	565.56	-567.77	-49.33	736609.2
9146	90.1	177.6	8730.79	596.56	-598.74	-48	736610.6
9177	90.4	177.5	8730.66	627.56	-629.72	-46.68	736611.9
9209	90.2	177.7	8730.49	659.55	-661.69	-45.34	736613.2
9241	90.2	177.7	8730.38	691.55	-693.66	-44.05	736614.5
9273	90.2	176.1	8730.26	723.55	-725.61	-42.32	736616.3
9304	90.3	176	8730.13	754.53	-756.54	-40.19	736618.4
9336	90.3	176.2	8729.96	786.52	-788.46	-38.01	736620.6
9368	91.1	176.8	8729.57	818.5	-820.4	-36.06	736622.5
9399	89.2	176.5	8729.49	849.5	-851.35	-34.25	736624.3
9431	89	176.3	8729.99	881.48	-883.28	-32.24	736626.3
9463	89.9	176.5	8730.3	913.47	-915.22	-30.23	736628.3
9494	90	176.9	8730.33	944.46	-946.16	-28.44	736630.1
9526	91.5	177.5	8729.91	976.46	-978.12	-26.88	736631.7
9558	89.6	177.3	8729.6	1008.45	-1010.09	-25.43	736633.1
9589	87.3	176.9	8730.44	1039.44	-1041.03	-23.86	736634.7
9609	89	177.7	8731.08	1059.42	-1061	-22.92	736635.7
9640	88.1	180.3	8731.87	1090.4	-1091.98	-22.38	736636.2
9672	87.9	180.9	8732.99	1122.35	-1123.96	-22.71	736635.9
9704	87.3	180.6	8734.33	1154.28	-1155.93	-23.13	736635.4
9736	86.9	180.9	8735.95	1186.2	-1187.89	-23.55	736635
9767	87.8	181.8	8737.38	1217.11	-1218.84	-24.28	736634.3
9799	89.3	182.1	8738.19	1249.02	-1250.81	-25.37	736633.2
9831	88.9	182.5	8738.69	1280.92	-1282.78	-26.65	736631.9
9862	87.8	182.3	8739.58	1311.81	-1313.74	-27.95	736630.6
9893	86.9	182.2	8741.02	1342.68	-1344.69	-29.17	736629.4
9924	87.3	182.3	8742.59	1373.55	-1375.62	-30.38	736628.2
9956	88.9	182.6	8743.65	1405.43	-1407.57	-31.75	736626.8
9987	89	183.1	8744.21	1436.31	-1438.53	-33.29	736625.3
10018	89.1	182.9	8744.73	1467.18	-1469.48	-34.91	736623.7
10050	88.2	183	8745.48	1499.05	-1501.43	-36.56	736622
10082	86.7	182.4	8746.91	1530.9	-1533.36	-38.06	736620.5
10113	86.7	181.6	8748.69	1561.77	-1564.29	-39.14	736619.4
10145	88.8	180.9	8749.95	1593.69	-1596.26	-39.84	736618.7
10176	89.4	180.9	8750.43	1624.64	-1627.25	-40.33	736618.2
10207	89.8	181.3	8750.65	1655.59	-1658.24	-40.92	736617.7
10239	89.6	180.8	8750.82	1687.54	-1690.24	-41.51	736617.1
10270	89.6	179.3	8751.03	1718.52	-1721.24	-41.54	736617
10302	88.8	180.5	8751.48	1750.49	-1753.23	-41.48	736617.1
10334	88.8	180.3	8752.15	1782.46	-1785.22	-41.7	736616.9
10366	88.8	180.7	8752.82	1814.42	-1817.22	-41.98	736616.6
10397	88.8	180.6	8753.47	1845.37	-1848.21	-42.34	736616.2
10429	88.5	180.4	8754.22	1877.33	-1880.2	-42.61	736616
10460	89.4	179.7	8754.79	1908.3	-1911.19	-42.64	736615.9
10491	89	179.8	8755.23	1939.28	-1942.19	-42.51	736616.1
10523	87.26	178.94	8756.27	1971.25	-1974.17	-42.15	736616.4
10554	87.75	178.75	8757.62	2002.22	-2005.13	-41.53	736617
10585	88.64	178.53	8758.6	2033.2	-2036.11	-40.79	736617.8
10617	87.94	177.99	8759.55	2065.19	-2068.08	-39.82	736618.8
10649	86.8	176.9	8761.02	2097.15	-2100.01	-38.4	736620.2
10680	86.9	176.5	8762.72	2128.1	-2130.91	-36.62	736622
10711	88.4	176.2	8763.99	2159.06	-2161.82	-34.65	736623.9

10743	87.5	176	8765.14	2191.02	-2193.73	-32.47	736626.1
10775	87.41	175.61	8766.56	2222.97	-2225.61	-30.13	736628.4
10805	88.2	175.6	8767.71	2252.92	-2255.5	-27.83	736630.7
10838	88.2	174.8	8768.74	2285.87	-2288.37	-25.07	736633.5
10878	88.2	174.8	8770	2325.79	-2328.18	-21.45	736637.1

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude
No. 3H PBHL		8768	-4420.56	163.79	736822.4	915017.1	33°30'46.5	103°33'22.:

WELLPATH COMPOSITION Ref Wellbore: No. 3H ST AWB Ref Wellpath: No. 3H ST AWP

Log Name/	Start MD [ft]	End MD [ft]	Pos Unc Model
GYRO (10(	0	8310	Generic gyro - continuous (Standard)
MWD (838	8310	9589	NaviTrak (Standard)
MWD ST ('	9589	10838	NaviTrak (Standard)
Projection	10838	10878	Blind Drilling (std)

extrapolated station

Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
919437.5	33°31'30.2"	103°33'24.·	0
919437.6	33°31'30.2"	103°33'24.·	0.34
919437.7	33°31'30.2"	103°33'24.·	0.15
919437.7	33°31'30.2"	103°33'24.·	0.17

919437.8	33°31'30.2	103°33'24.	0.17
919437.7	33°31'30.2	103°33'24.	0.31
919437.5	33°31'30.2	103°33'24.	0.12
919437.3	33°31'30.2	103°33'24.	0.11
919437	33°31'30.2	103°33'24.	0.07
919436.6	33°31'30.2	103°33'24.	0.21
919435.9	33°31'30.2	103°33'24.	0.23
919435.3	33°31'30.2	103°33'24.	0.1
919434.8	33°31'30.2	103°33'24.	0.07
919434.3	33°31'30.2	103°33'24.	0.19
919433.5	33°31'30.2	103°33'24.	0.13
919432.8	33°31'30.2	103°33'24.	0.13
919432.3	33°31'30.2	103°33'24.	0.22
919431.6	33°31'30.2	103°33'24.	0.17
919431	33°31'30.2	103°33'24.	0.17
919430.7	33°31'30.2	103°33'24.	0.3
919430.5	33°31'30.2	103°33'24.	0.17
919430.3	33°31'30.2	103°33'24.	0.22
919430.2	33°31'30.2	103°33'24.	0.12
919430	33°31'30.2	103°33'24.	0.23
919429.8	33°31'30.2	103°33'24.	0.25
919429.7	33°31'30.2	103°33'24.	0.17
919429.6	33°31'30.2	103°33'24.	0.14
919429.5	33°31'30.1	103°33'24.	0.15
919429.3	33°31'30.1	103°33'24.	0.33
919429.4	33°31'30.1	103°33'24.	0.02
919429.5	33°31'30.1	103°33'24.	0.19
919429.7	33°31'30.2	103°33'24.	0.11
919429.9	33°31'30.2	103°33'24.	0.17
919430.2	33°31'30.2	103°33'24.	0.23
919430.3	33°31'30.2	103°33'24.	0.21
919430.4	33°31'30.2	103°33'24.	0.14
919430.5	33°31'30.2	103°33'24.	0.11
919430.6	33°31'30.2	103°33'24.	0.26
919430.8	33°31'30.2	103°33'24.	0.2
919431	33°31'30.2	103°33'24.	0.15
919431.2	33°31'30.2	103°33'24.	0.28
919431.6	33°31'30.2	103°33'24.	0.16
919431.9	33°31'30.2	103°33'24.	0.2
919432.3	33°31'30.2	103°33'24.	0.19
919432.7	33°31'30.2	103°33'24.	0.13
919433.1	33°31'30.2	103°33'24.	0.26
919433.5	33°31'30.2	103°33'24.	0.22
919434.1	33°31'30.2	103°33'24.	0.18
919434.6	33°31'30.2	103°33'24.	0.09
919435.1	33°31'30.2	103°33'24.	0.16
919435.6	33°31'30.2	103°33'24.	0.15
919436.1	33°31'30.2	103°33'24.	0.22
919436.4	33°31'30.2	103°33'24.	0.19
919436.7	33°31'30.2	103°33'24.	0.08
919437.1	33°31'30.2	103°33'24.	0.12
919437.2	33°31'30.2	103°33'24.	0.2

919437.2	33°31'30.2	103°33'24.	0.15
919437.4	33°31'30.2	103°33'24.	0.16
919437.5	33°31'30.2	103°33'24.	0.12
919437.6	33°31'30.2	103°33'24.	0.19
919437.7	33°31'30.2	103°33'24.	0.16
919437.6	33°31'30.2	103°33'24.	0.18
919437.3	33°31'30.2	103°33'24.	0.14
919437.1	33°31'30.2	103°33'24.	0.07
919437	33°31'30.2	103°33'24.	0.07
919437	33°31'30.2	103°33'24.	0.2
919437.1	33°31'30.2	103°33'24.	0.15
919437.3	33°31'30.2	103°33'24.	0.17
919437.6	33°31'30.2	103°33'24.	0.2
919438.1	33°31'30.2	103°33'24.	0.03
919438.6	33°31'30.2	103°33'24.	0.18
919439.1	33°31'30.2	103°33'24.	0.18
919439.6	33°31'30.3	103°33'24.	0.09
919440.2	33°31'30.3	103°33'24.	0.03
919440.8	33°31'30.3	103°33'24.	0.09
919441.7	33°31'30.3	103°33'25.	0.26
919442.5	33°31'30.3	103°33'25.	0.24
919442.8	33°31'30.3	103°33'25.	0.45
919442.3	33°31'30.3	103°33'25.	0.51
919441.3	33°31'30.3	103°33'25.	0.09
919440.8	33°31'30.3	103°33'25.	0.52
919440.8	33°31'30.3	103°33'25.	0.24
919441.3	33°31'30.3	103°33'25.	0.35
919441.8	33°31'30.3	103°33'25.	0.32
919441.8	33°31'30.3	103°33'25.	1.38
919436.1	33°31'30.2	103°33'25.	12.8
919430	33°31'30.2	103°33'25.	18.06
919421.1	33°31'30.1	103°33'25.	16.77
919409.4	33°31'30.0	103°33'25.	15.96
919395	33°31'29.8	103°33'25.	17.53
919378.6	33°31'29.6	103°33'25.	17.43
919359.2	33°31'29.5	103°33'25.	16.3
919337.6	33°31'29.2	103°33'25.	14.79
919314.9	33°31'29.0	103°33'24.	18.42
919290.6	33°31'28.8	103°33'24.	21.18
919264.1	33°31'28.5	103°33'25.	11.75
919236.7	33°31'28.2	103°33'25.	8.44
919209.6	33°31'28.0	103°33'25.	6.39
919181	33°31'27.7	103°33'25.	11.11
919152.5	33°31'27.4	103°33'25.	12.48
919123.3	33°31'27.1	103°33'25.	14.74
919093.4	33°31'26.8	103°33'25.	10.36
919063.1	33°31'26.5	103°33'25.	10.49
919032.5	33°31'26.2	103°33'25.	14.17
919000.6	33°31'25.9	103°33'25.	9.32
918968.7	33°31'25.6	103°33'25.	2.21
918932.7	33°31'25.2	103°33'25.	3.61
918900.8	33°31'24.9	103°33'25.	6.92

918869.8	33°31'24.6	103°33'25.	1.37
918838.8	33°31'24.3	103°33'25.	0.46
918807.8	33°31'24.0	103°33'25.	1.02
918775.9	33°31'23.7	103°33'25.	0.88
918743.9	33°31'23.4	103°33'25.	0
918712	33°31'23.1	103°33'25.	5
918681	33°31'22.7	103°33'24.	0.46
918649.1	33°31'22.4	103°33'24.	0.62
918617.2	33°31'22.1	103°33'24.	3.12
918586.2	33°31'21.8	103°33'24.	6.2
918554.3	33°31'21.5	103°33'24.	0.88
918522.4	33°31'21.2	103°33'24.	2.88
918491.4	33°31'20.9	103°33'24.	1.33
918459.5	33°31'20.6	103°33'24.	5.05
918427.5	33°31'20.2	103°33'24.	5.97
918396.5	33°31'19.9	103°33'24.	7.53
918376.6	33°31'19.7	103°33'24.	9.39
918345.6	33°31'19.4	103°33'24.	8.87
918313.6	33°31'19.1	103°33'24.	1.98
918281.6	33°31'18.8	103°33'24.	2.1
918249.7	33°31'18.5	103°33'24.	1.56
918218.7	33°31'18.2	103°33'24.	4.1
918186.8	33°31'17.9	103°33'24.	4.78
918154.8	33°31'17.5	103°33'24.	1.77
918123.8	33°31'17.2	103°33'24.	3.61
918092.9	33°31'16.9	103°33'24.	2.92
918062	33°31'16.6	103°33'24.	1.33
918030	33°31'16.3	103°33'24.	5.09
917999.1	33°31'16.0	103°33'24.	1.64
917968.1	33°31'15.7	103°33'24.	0.72
917936.2	33°31'15.4	103°33'25.	2.83
917904.2	33°31'15.1	103°33'25.	5.05
917873.3	33°31'14.8	103°33'25.	2.58
917841.3	33°31'14.4	103°33'25.	6.92
917810.3	33°31'14.1	103°33'25.	1.94
917779.3	33°31'13.8	103°33'25.	1.82
917747.4	33°31'13.5	103°33'25.	1.68
917716.4	33°31'13.2	103°33'25.	4.84
917684.4	33°31'12.9	103°33'25.	4.51
917652.4	33°31'12.6	103°33'25.	0.62
917620.4	33°31'12.3	103°33'25.	1.25
917589.4	33°31'11.9	103°33'25.	0.32
917557.4	33°31'11.6	103°33'25.	1.13
917526.4	33°31'11.3	103°33'25.	3.68
917495.4	33°31'11.0	103°33'25.	1.33
917463.4	33°31'10.7	103°33'25.	6.06
917432.5	33°31'10.4	103°33'25.	1.7
917401.5	33°31'10.1	103°33'25.	2.96
917369.5	33°31'09.8	103°33'25.	2.76
917337.6	33°31'09.5	103°33'25.	4.93
917306.7	33°31'09.1	103°33'25.	1.33
917275.8	33°31'08.8	103°33'25.	4.93

917243.9	33°31'08.5	103°33'25.	2.88
917212	33°31'08.2	103°33'24.	1.25
917182.1	33°31'07.9	103°33'24.	2.63
917149.2	33°31'07.6	103°33'24.	2.42
917109.4	33°31'07.2	103°33'24.	0

Shape	Comment
point	