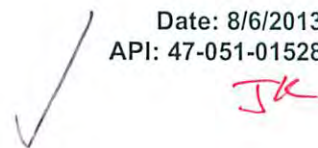


State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work



Farm Name: Consolidation Coal Company Operator Well No: SHL-8H-HS

LOCATION: Sandhill 8 Elevation: 1,131.62 Quadrangle: Majorsville

District: Sandhill County: MARSHALL
Latitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec. 39.955514
Longitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec. -80.535714

Company: CNX Gas Company LLC	Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. Ft.
Address: 200 Evergreene Drive Waynesburg, PA 15370	30	40.0	40.0	Cemented in
Agent: Steven Haught	20	452.5	452.5	923 sxs 197 bbls cemented to surface
Inspector: Bill Hendershot	13 3/8	1,067.7	1,067.7	844 sxs / 181 bbls cemented to surface
Date Permit Issued: 5/30/2012	9 5/8	3,017	3,017	1078 sxs / 244 bbls cemented to surface
Date Well Work Commenced: 8/17/2012	5 1/2	10,947	10,947	1556 sxs / 518 bbls cemented
Date Well Work Completed: 8/3/2013				
Verbal Plugging:				
Date Permission granted on: 8/17/2012				
Rotary Cable Rig X				
Total Vertical Depth (ft): Original Hole - 6,518.32				
Total Measured Depth (ft): 10,972.00				
Fresh Water Depth (ft): 396				
Salt Water Depth (ft): None				
Is coal being mined in the area (N/Y)? Y				
Coal Depths (ft.): 584 - 588 Pittsburg Seam				
Void(s) encountered (N/Y) Depth(s) None				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) NA

Gas: Initial open flow 887 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 1542 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 1694 psig (surface pressure) after 24 Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

RECEIVED
Office of Oil and Gas
JUL 23 2013
Environmental Section

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

[Signature]
Signature Date 1-27-14

Jane L. Atkins, Noble Energy, Inc. 1/27/14

02/28/2014

Were core samples taken? Yes__ No_X__

Were cuttings caught during drilling? Yes_X_ No__

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list: Gamma Ray Logs, Bond Log

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing or Stimulating: Please See Attached

Plug Back Details including Plug Type and Depth(s): Please See Attached

Surface:

Formations Encountered: Please See Attached

02/28/2014

SHL 8H
47-051-01528

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	584	0	584	
Pittsburgh Coal	584	588	584	588	
Shale and Sandstone	588	1058	588	1058	
Dunkard Sand	1058	1076	1058	1076	
Shale	1076	1230	1076	1230	
Gas Sand	1230	1273	1230	2449	
Shale	1273	1345	1273	2452	
1st Salt Sand	1345	1407	1345	2508	
Shale	1407	1464	1407	2511	
2nd Salt Sand	1464	1496	1464	2558	
Shale	1496	1578	1496	2566	
Maxton Sand	1578	1627	1578	2600	
Shale	1627	1654	1627	2610	
Big Lime	1654	1719	1654	2713	
Big Injun	1719	1892	1719	2754	
Price	1892	2242	1892	3145	
Murrysville	2242	2255	2242	3184	
Shale	2255	2449	2255	4217	
50' Sand	2449	2452	2449	4227	
Shale	2452	2508	2452	2508	
30' Sand	2508	2511	2508	2511	
Shale	2511	2558	2511	2558	
Gordon Stray	2558	2566	2558	2566	
Shale	2566	2600	2566	2600	
Gordon	2600	2610	2600	2610	
Shale	2610	2713	2610	2713	
Fifth Sand	2713	2754	2713	2754	
Shale	2754	3145	2754	3145	
Speechley Sand	3145	3184	3145	3184	
Shale	3184	4217	3184	4217	
Warren Sand	4217	4227	4217	4227	
Shale	4227	4907	4227	4908	
Java Shale	4907	5011	4908	5012	
Pipe Creek Shale	5011	5109	5012	5112	
Angola Shale	5109	5743	5112	5792	
Rhinestreet	5743	6180	5792	6262	
Cashaqua	6180	6281	6262	6374	
Middlesex	6281	6312	6374	6410	
West River	6312	6369	6410	6483	
Burkett	6369	6394	6483	6519	
Tully Limestone	6394	6421	6519	6560	
Hamilton	6421	6535	6560	6814	
Marcellus	6535	6584	6814	not encountered	Gas
Cherry Valley	6543	6545	not encountered	not encountered	
Onondaga	6584		not encountered	not encountered	

SHL 8H
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Stage #	Plug Type	Plug Depth
1A,1B	No Plug	No Plug
2	Composite Frac Plug	10,250
3	Composite Frac Plug	10,050
4	Composite Frac Plug	9,800
5	Composite Frac Plug	9,500
6A,6B	Composite Frac Plug	9,250
7	Composite Frac Plug	8,800
8A,8B	Composite Frac Plug	9,000
9A,9B	Composite Frac Plug	8,588
10	Composite Frac Plug	8,300
11A,11B	Composite Frac Plug	8,000
12	Composite Frac Plug	7,745
13	Composite Frac Plug	7,450
14A,14B	Composite Frac Plug	7,250
15	Composite Frac Plug	7,000
	Bridge Plug	6,000

SHL 8H
47-051-01528

Stimulation Summary

Date	Stage #	Formation	Frac Type	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac Gradient	Sand (lbs)	Acid (gals)	Water (gals)
7/25/2013	1A	Marcellus	Slickwater	10,701	10,855	48	6,647	8,553	20.0	N/A	N/A	3,302	6,000	100,642
7/27/2013	1RP	Marcellus	Slickwater	10,477	10,714	32	7,684	8,009	75.3	4,437	1.07	213,888	3,000	301,873
7/27/2013	1RP-B	Marcellus	Slickwater	10,477	10,714		7,684	7,530	52.3	5,188	1.23	1,292	3,000	106,078
7/27/2013	1C	Marcellus	Slickwater	10,275	10,427	40	5,961	7,053	80.7	4,966	1.19	434,456	3,000	296,268
7/28/2013	2	Marcellus	Slickwater	10,075	10,227	40	6,083	7,226	73.1	7,553	1.59	277,284	3,000	265,313
7/28/2013	2inj	Marcellus	Slickwater	10,075	10,227	40	6,083	8,446	9.7	6,334	1.40	N/A	3,000	23,201
7/28/2013	3	Marcellus	Slickwater	9,824	10,027	40	5,758	7,201	76.5	4,824	1.17	250,759	3,000	283,296
7/28/2013	4	Marcellus	Slickwater	9,526	9,777	40	6,078	7,180	81.4	4,528	1.12	332,861	3,000	339,754
7/29/2013	5	Marcellus	Slickwater	9,274	9,477	40	6,241	6,241	80.8	4,430	1.11	364,861	3,000	302,817
7/29/2013	6	Marcellus	Slickwater	9,024	9,227	40	6,157	8,207	29.7	4,863	1.18	502	9,000	130,990
7/29/2013	6RP	Marcellus	Slickwater	9,059	9,195	40	N/A	6,899	80.8	N/A	N/A	282,526	3,000	254,071
7/29/2013	6inj	Marcellus	Slickwater	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6,858
7/30/2013	7	Marcellus	Slickwater	8,825	8,977	40	5,862	7,353	80.7	4,705	1.15	232,580	3,000	321,997
7/31/2013	8	Marcellus	Slickwater	8,625	8,777	40	6,111	8,185	18.5	4,980	1.19	589	6,000	89,990
7/31/2013	8RP	Marcellus	Slickwater	8,615	8,660	30	N/A	7,130	74.4	4,547	1.13	289,788	3,000	282,178
8/1/2013	9	Marcellus	Slickwater	8,326	8,577	40	6,587	7,513	41.8	4,849	1.17	1,478	3,000	148,663
8/1/2013	9RP	Marcellus	Slickwater	8,316	8,504	40	N/A	8,458	59.7	4,744	1.16	410,059	12,000	700,627
8/1/2013	10	Marcellus	Slickwater	8,026	8,277	40	6,112	7,114	79.6	5,243	1.23	408,708	3,000	325,130
8/1/2013	11	Marcellus	Slickwater	7,774	7,977	40	5,747	7,590	37.2	5,021	1.20	4,524	6,000	151,010
8/2/2013	11RP	Marcellus	Slickwater	7,760	7,866	40	N/A	6,809	85.0	9,345	1.20	246,311	3,000	247,902
8/2/2013	12	Marcellus	Slickwater	7,475	7,727	40	5,853	6,755	87.8	5,036	1.20	434,279	6,000	355,725
8/3/2013	13	Marcellus	Slickwater	7,275	7,427	40	6,709	6,740	72.5	4,663	1.13	290,014	3,000	256,529
8/3/2013	14	Marcellus	Slickwater	7,024	7,227	40	5,960	8,558	76.8	4,992	1.19	1,167	3,000	833,459
8/3/2013	14RP	Marcellus	Slickwater	7,045	7,193	40	N/A	7,192	83.7	4,943	1.19	370,882	3,000	298,211
8/3/2013	15	Marcellus	Slickwater	6,825	6,977	40	6,135	7,000	85.9	4,539	1.13	366,732	3,000	292,661

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Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration In Additive (% by mass)**	Maximum Ingredient Concentration In HF Fluid (% by mass)**	Comments
Fresh Water	Operator				100.00%	89.82085%	Density = 8.330
FE ACID - <10% HCL	Halliburton		Hydrochloric acid	7647-01-0	10.00%	0.14130%	
100 MESH	Halliburton				100.00%	0.94770%	
40/70 White	Halliburton				100.00%	7.67678%	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.01194%	
BE-9	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00%	0.00375%	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor	Ammonium chloride	12125-02-9	10.00%	0.00222%	
LoSurf-300D	Halliburton	Non-ionic Surfactant	1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00002%	
			Ethanol	64-17-5	60.00%	0.00148%	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.00074%	
			Naphthalene	91-20-3	5.00%	0.00012%	
			Poly(oxy-1,2-ethanedily), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00%	0.00012%	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic acid	64-19-7	60.00%	0.00440%	
			Acetic anhydride	108-24-7	100.00%	0.00733%	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Methanol	67-56-1	60.00%	0.00073%	
			Propargyl alcohol	107-19-7	10.00%	0.00012%	
LCA-1	Halliburton	Solvent	Paraffinic solvent	Confidential Business Information	100.00%	0.00295%	
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00%	0.00085%	
WG-36 GELLING AGENT	Halliburton	Gelling Agent	Guar gum	9000-30-0	100.00%	0.02736%	

02/28/2014

POWER OF ATTORNEY

CNX GAS COMPANY LLC, a Virginia limited liability company, having its principal office at CNX Center, 1000 CONSOL Energy Drive, Canonsburg, Pennsylvania 15317 ("Company"), does hereby constitute and appoint, as its true and lawful attorney-in fact with the authority specifically set forth herein Amanda Langford.

The Attorney hereunder shall have the authority to sign and execute on behalf of the Company any and all West Virginia gas well drilling permit applications, gas operations impoundment permit applications, erosion and sedimentation permit (ESCGP-1) applications, county and state road use permit applications (driveway and pipeline bores), and related documents and instruments which may be necessary or expedient in, or incident to, the conduct of the ordinary business of the Company.

The authority of said Attorney hereunder shall commence on March 9, 2012 and shall remain in full force and effect thereafter until terminated in writing.

IN WITNESS WHEREOF, the Company has caused this Power of Attorney to be executed by its duly authorized corporate officer this 8th day of March, 2012.

CNX GAS COMPANY LLC

By: 

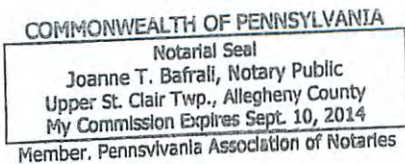
Its: Executive Vice President

COMMONWEALTH OF PENNSYLVANIA :

SS

COUNTY OF WASHINGTON :

Sworn and subscribed to before me a Notary Public this 8th day of March, 2012.





4705101528



Noble Energy SHL-8H-HS Gyro+MWD 0' to 10972' MD Survey Report

(Def Survey)

Report Date: January 23, 2013 - 08:59 AM
Client: Noble Energy
Field: WV Marshall County (NAD 27)
Structure / Slot: CNX/Noble Energy SHL-8 Pad / SHL-8H-HS
Well: SHL-8H-HS
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Noble Energy SHL-8H-HS Gyro+MWD 0' to 10972' MD
Survey Date: January 14, 2013
Tort / AHD / DDJ / ERD Ratio: 204.902' / 5066.390 ft / 6.239 / 0.770
Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 39° 57' 19.84595", W 80° 32' 8.56817"
Location Grid N/E Y/X: N 531811.401 ftUS, E 1709654.429 ftUS
CRS Grid Convergence Angle: -0.6606°
Grid Scale Factor: 0.99995725

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 330.039° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 1150.120 ft above MSL
Seabed / Ground Elevation: 1131.470 ft above MSL
Magnetic Declination: -8.712°
Total Gravity Field Strength: 999.3810mgn (9.80665 Based)
Total Magnetic Field Strength: 52754.008 nT
Magnetic Dip Angle: 67.432°
Declination Date: January 14, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: -0.6606°
Total Corr Mag North->Grid North: -8.0517°

Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
SHL	0.00	0.00	0.00	0.00	-1150.12	0.00	0.00	0.00	N/A	N/A	N/A	531811.40	1709654.43	N 39 57 19.85	W 80 32 8.57	0.00
	107.00	0.60	204.45	107.00	-1043.12	0.33	-0.51	-0.23	0.56	0.56	0.00	531810.89	1709654.20	N 39 57 19.84	W 80 32 8.57	0.00
	207.00	0.73	206.14	206.99	-943.13	-0.99	-1.56	-0.73	0.13	0.13	1.69	531809.84	1709653.70	N 39 57 19.83	W 80 32 8.58	0.10
	307.00	0.68	209.04	306.98	-843.14	-1.65	-2.65	-1.30	0.06	-0.05	2.90	531808.75	1709653.13	N 39 57 19.82	W 80 32 8.58	0.37
	407.00	0.52	211.01	406.98	-743.14	-2.17	-3.56	-1.82	0.16	-0.16	1.97	531807.84	1709652.61	N 39 57 19.81	W 80 32 8.59	0.58
	507.00	0.46	213.30	506.97	-643.15	-2.57	-4.28	-2.27	0.06	-0.06	2.29	531807.12	1709652.16	N 39 57 19.80	W 80 32 8.60	0.69
	607.00	0.37	217.58	606.97	-543.15	-2.88	-4.87	-2.69	0.10	-0.09	4.28	531806.53	1709651.74	N 39 57 19.80	W 80 32 8.60	0.79
	707.00	0.23	244.13	706.97	-443.15	-2.99	-5.22	-3.07	0.19	-0.14	26.55	531806.19	1709651.36	N 39 57 19.79	W 80 32 8.61	0.90
	807.00	0.15	296.76	806.97	-343.15	-2.86	-5.24	-3.37	0.18	-0.08	52.63	531806.16	1709651.06	N 39 57 19.79	W 80 32 8.61	0.98
	907.00	0.15	148.77	906.97	-243.15	-2.88	-5.30	-3.42	0.29	0.00	-147.99	531806.10	1709651.01	N 39 57 19.79	W 80 32 8.61	1.07
	1007.00	0.45	130.92	1006.97	-143.15	-3.39	-5.67	-3.05	0.31	0.30	-17.85	531805.73	1709651.38	N 39 57 19.79	W 80 32 8.61	1.17
	1107.00	0.34	86.13	1106.97	-43.15	-3.89	-5.90	-2.46	0.32	-0.11	-44.79	531805.50	1709651.97	N 39 57 19.79	W 80 32 8.60	1.27
	1207.00	0.51	88.42	1206.96	56.84	-1.72	-5.87	-1.72	0.17	0.17	2.29	531805.53	1709652.71	N 39 57 19.79	W 80 32 8.59	1.34
	1307.00	0.56	89.09	1306.96	156.84	-4.68	-5.85	-0.78	0.05	0.05	0.67	531805.55	1709653.65	N 39 57 19.79	W 80 32 8.58	1.39
	1407.00	0.48	92.19	1406.96	256.84	-5.14	-5.86	0.12	0.08	-0.08	3.10	531805.54	1709654.55	N 39 57 19.79	W 80 32 8.57	1.45
	1507.00	0.41	99.22	1506.95	356.83	-5.59	-5.93	0.90	0.09	-0.07	7.03	531805.47	1709655.32	N 39 57 19.79	W 80 32 8.56	1.49
	1607.00	0.40	113.08	1606.95	456.83	-6.09	-6.13	1.57	0.10	-0.01	13.86	531805.27	1709656.00	N 39 57 19.78	W 80 32 8.55	1.53
	1707.00	0.55	131.52	1706.95	556.83	-6.83	-6.58	2.25	0.21	0.15	18.44	531804.82	1709656.68	N 39 57 19.78	W 80 32 8.54	1.59
	1807.00	0.42	138.48	1806.94	656.82	-7.64	-7.18	2.85	0.14	-0.13	6.96	531804.23	1709657.28	N 39 57 19.78	W 80 32 8.53	1.64
	1907.00	0.57	129.56	1906.94	756.82	-8.47	-7.77	3.48	0.17	0.15	-8.92	531803.63	1709657.91	N 39 57 19.77	W 80 32 8.52	1.69
	2007.00	0.60	130.01	2006.93	856.81	-9.42	-8.42	4.26	0.03	0.03	0.45	531802.98	1709658.69	N 39 57 19.76	W 80 32 8.51	1.72
	2107.00	0.31	107.89	2106.93	956.81	-10.12	-8.84	4.92	0.33	-0.29	-22.12	531802.56	1709659.35	N 39 57 19.76	W 80 32 8.50	1.79
	2207.00	0.20	112.72	2206.93	1056.81	-10.46	-8.99	5.34	0.11	-0.11	4.83	531802.41	1709659.77	N 39 57 19.76	W 80 32 8.50	1.81
	2307.00	0.28	117.02	2306.93	1156.81	-10.80	-9.17	5.72	0.08	0.08	4.30	531802.23	1709660.15	N 39 57 19.76	W 80 32 8.49	1.83
	2407.00	0.28	114.92	2406.93	1256.81	-11.20	-9.38	6.16	0.01	0.00	-2.10	531802.02	1709660.59	N 39 57 19.75	W 80 32 8.49	1.84

02/28/2014

4705101528

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
	2507.00	0.48	110.13	2506.93	1356.81	-11.73	-9.63	6.77	0.20	0.20	-4.79	531801.77	1709661.20	N 39 57 19.75 W	80 32 8.48	1.88
	2607.00	0.99	99.66	2606.92	1456.80	-12.60	-9.92	8.02	0.53	0.51	-10.47	531801.48	1709662.45	N 39 57 19.75 W	80 32 8.46	1.96
	2707.00	0.98	87.42	2706.90	1556.78	-13.54	-10.03	9.72	0.21	-0.01	-12.24	531801.38	1709664.15	N 39 57 19.75 W	80 32 8.44	2.02
	2807.00	0.67	82.51	2806.89	1656.77	-14.16	-9.91	11.16	0.32	-0.31	-4.91	531801.49	1709665.59	N 39 57 19.75 W	80 32 8.42	2.07
	2897.00	0.95	52.90	2896.88	1746.76	-14.27	-9.39	12.27	0.55	0.31	-32.90	531802.01	1709666.70	N 39 57 19.75 W	80 32 8.41	2.14
	3050.00	0.59	46.34	3049.87	1899.75	-13.92	-8.08	13.86	0.24	-0.24	-4.29	531803.32	1709668.28	N 39 57 19.77 W	80 32 8.39	2.20
	3094.00	0.63	46.45	3093.87	1943.75	-13.81	-7.76	14.20	0.09	0.09	0.25	531803.64	1709668.62	N 39 57 19.77 W	80 32 8.38	2.21
	3139.00	0.58	31.71	3138.86	1988.74	-13.65	-7.40	14.49	0.36	-0.11	-32.76	531804.01	1709669.73	N 39 57 19.77 W	80 32 8.38	2.23
	3184.00	0.56	32.41	3183.86	2033.74	-13.44	-7.02	14.73	0.05	-0.04	1.56	531804.39	1709669.16	N 39 57 19.78 W	80 32 8.38	2.24
	3229.00	0.58	24.90	3228.86	2078.74	-13.20	-6.62	14.95	0.17	0.04	-16.69	531804.78	1709669.37	N 39 57 19.78 W	80 32 8.38	2.25
	3273.00	0.59	27.66	3272.86	2122.74	-12.95	-6.22	15.14	0.07	0.02	6.27	531805.18	1709669.57	N 39 57 19.79 W	80 32 8.37	2.26
	3318.00	0.54	12.64	3317.85	2167.73	-12.67	-5.81	15.30	0.35	-0.11	-33.38	531805.59	1709669.73	N 39 57 19.79 W	80 32 8.37	2.28
	3363.00	0.57	0.78	3362.85	2212.73	-12.32	-5.38	15.35	0.26	0.07	-26.36	531806.02	1709669.78	N 39 57 19.79 W	80 32 8.37	2.29
	3408.00	0.61	357.75	3407.85	2257.73	-11.92	-4.92	15.34	0.11	0.09	-6.73	531806.49	1709669.77	N 39 57 19.80 W	80 32 8.37	2.30
	3452.00	0.67	349.09	3451.85	2301.73	-11.47	-4.43	15.28	0.26	0.14	-19.68	531806.97	1709669.71	N 39 57 19.80 W	80 32 8.37	2.31
	3497.00	0.96	340.00	3496.84	2346.72	-10.85	-3.82	15.11	0.70	0.64	-20.20	531807.59	1709669.53	N 39 57 19.81 W	80 32 8.37	2.34
	3542.00	2.08	335.76	3541.83	2391.71	-9.67	-2.72	14.64	2.48	2.47	-9.42	531808.68	1709669.07	N 39 57 19.82 W	80 32 8.38	2.42
	3587.00	2.27	332.95	3586.79	2436.67	-7.97	-1.18	13.90	0.52	0.47	-6.24	531810.22	1709668.33	N 39 57 19.84 W	80 32 8.39	2.46
	3631.00	2.21	334.82	3630.76	2480.64	6.72	0.36	13.14	0.23	-0.16	4.25	531811.77	1709667.57	N 39 57 19.85 W	80 32 8.40	2.48
	3721.00	2.38	343.87	3720.69	2570.57	8.02	3.73	11.89	0.44	0.19	10.06	531815.13	1709666.31	N 39 57 19.88 W	80 32 8.42	2.55
	3810.00	1.92	343.94	3809.63	2659.51	0.54	6.94	10.96	0.52	-0.52	0.08	531818.34	1709665.39	N 39 57 19.92 W	80 32 8.43	2.60
	3900.00	1.46	336.12	3899.59	2749.47	3.14	9.44	10.08	0.57	-0.51	-8.69	531820.84	1709664.51	N 39 57 19.94 W	80 32 8.44	2.65
	3989.00	1.10	331.20	3988.56	2838.44	5.12	11.22	9.21	0.42	-0.40	-5.53	531822.62	1709663.64	N 39 57 19.96 W	80 32 8.45	2.69
	4079.00	0.93	333.38	4078.55	2928.43	6.72	12.63	8.46	0.19	-0.19	2.42	531824.03	1709662.89	N 39 57 19.97 W	80 32 8.46	2.71
	4169.00	0.73	328.17	4168.54	3018.42	8.02	13.77	7.83	0.24	-0.22	-5.79	531825.17	1709662.26	N 39 57 19.98 W	80 32 8.47	2.73
	4259.00	0.68	318.90	4258.53	3108.41	9.12	14.66	7.18	0.14	-0.06	-10.30	531826.06	1709661.61	N 39 57 19.99 W	80 32 8.48	2.74
	4348.00	0.60	315.50	4347.53	3197.41	10.08	15.39	6.51	0.10	-0.09	-3.82	531826.79	1709660.94	N 39 57 20.00 W	80 32 8.49	2.76
	4437.00	0.62	318.60	4436.52	3286.40	11.01	16.08	5.86	0.04	0.02	3.48	531827.48	1709660.29	N 39 57 20.01 W	80 32 8.50	2.77
	4527.00	0.63	318.64	4526.52	3376.40	11.97	16.82	5.21	0.01	0.01	0.04	531828.22	1709659.64	N 39 57 20.01 W	80 32 8.50	2.77
	4616.00	0.84	22.94	4615.51	3465.39	12.84	17.79	5.14	0.90	0.24	72.25	531829.19	1709659.57	N 39 57 20.02 W	80 32 8.50	2.81
	4706.00	0.95	31.15	4705.50	3555.38	13.60	19.04	5.79	0.19	0.12	9.12	531830.44	1709660.22	N 39 57 20.03 W	80 32 8.50	2.83
	4795.00	0.81	24.71	4794.49	3644.37	14.32	20.24	6.43	0.19	-0.16	-7.24	531831.64	1709660.86	N 39 57 20.05 W	80 32 8.49	2.85
	4840.00	0.93	32.21	4839.48	3689.36	14.68	20.84	6.76	0.37	0.27	16.67	531832.24	1709661.19	N 39 57 20.05 W	80 32 8.48	2.86
	4885.00	3.02	67.27	4884.46	3734.34	14.70	21.60	8.05	5.16	4.64	77.91	531833.00	1709662.48	N 39 57 20.06 W	80 32 8.47	2.94
	4930.00	5.76	74.38	4929.32	3779.20	13.99	22.67	11.32	6.20	6.09	15.80	531834.07	1709665.75	N 39 57 20.07 W	80 32 8.43	3.04
	4974.00	7.63	77.12	4973.02	3822.90	12.58	23.92	16.29	4.31	4.25	6.23	531835.32	1709670.72	N 39 57 20.08 W	80 32 8.36	3.12
	5019.00	9.28	82.50	5017.53	3867.41	10.32	25.05	22.80	4.06	3.67	11.96	531836.45	1709677.23	N 39 57 20.10 W	80 32 8.28	3.20
	5064.00	11.64	84.54	5061.78	3911.66	7.05	25.96	30.92	5.31	5.24	4.53	531837.36	1709685.35	N 39 57 20.11 W	80 32 8.18	3.29
	5109.00	13.62	85.54	5105.69	3955.57	2.89	26.80	40.72	4.43	4.40	2.22	531838.20	1709695.15	N 39 57 20.12 W	80 32 8.05	3.38
	5153.00	15.38	86.04	5148.28	3998.16	-1.90	27.61	51.71	4.01	4.00	1.14	531839.01	1709706.13	N 39 57 20.12 W	80 32 7.91	3.45
	5198.00	17.07	87.09	5191.49	4041.37	-7.52	28.36	64.26	3.81	3.76	2.33	531839.76	1709718.68	N 39 57 20.13 W	80 32 7.75	3.53
	5243.00	19.32	89.05	5234.24	4084.12	-14.14	28.82	78.30	5.18	5.00	4.36	531840.22	1709732.72	N 39 57 20.14 W	80 32 7.57	3.61
	5287.00	21.96	89.43	5275.41	4125.29	-21.71	29.02	93.81	6.01	6.00	0.86	531840.42	1709748.23	N 39 57 20.14 W	80 32 7.37	3.70
	5332.00	22.83	87.56	5317.02	4166.90	-29.87	29.47	110.94	2.50	1.93	-4.16	531840.87	1709765.37	N 39 57 20.15 W	80 32 7.15	3.76
	5427.00	22.14	86.32	5399.25	4249.13	-45.27	31.29	144.93	0.94	-0.78	-1.39	531842.69	1709799.35	N 39 57 20.17 W	80 32 6.71	3.85
	5466.00	20.64	83.98	5441.15	4291.03	-52.25	32.66	161.28	3.83	-3.33	-5.20	531844.06	1709815.70	N 39 57 20.19 W	80 32 6.50	3.91
	5570.00	20.53	87.78	5542.26	4392.14	-68.79	35.39	199.14	1.24	-0.10	3.52	531846.79	1709853.56	N 39 57 20.22 W	80 32 6.02	3.99
	5659.00	22.87	85.66	5630.52	4480.40	-84.53	37.43	234.19	2.60	2.46	-2.23	531848.83	1709888.61	N 39 57 20.24 W	80 32 5.57	4.08

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Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	TVDS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Eastng (ftUS)	Latitude (N/S °.′.″)	Longitude (E/W °.′.″)	Directional Difficulty Index
	5764.00	24.08	84.50	5717.66	4567.54	-100.53	40.69	271.89	1.36	1.27	-1.22	531852.09	1709926.31	N 39 57 20.28	W 80 32 5.08	4.15
	5858.00	23.98	88.26	5803.52	4653.40	-117.51	43.11	310.08	1.63	-0.11	4.00	531854.51	1709964.49	N 39 57 20.31	W 80 32 4.59	4.21
	5953.00	24.45	90.89	5890.16	4740.04	-136.72	43.39	349.03	1.24	0.49	2.77	531854.79	1710003.45	N 39 57 20.31	W 80 32 4.09	4.27
	5999.00	24.32	89.62	5932.06	4781.94	-146.28	43.30	368.02	1.17	-0.28	-2.76	531854.70	1710022.44	N 39 57 20.32	W 80 32 3.85	4.29
	6048.00	20.31	79.23	5977.40	4827.28	-154.06	44.96	386.48	11.45	-8.18	-21.20	531856.36	1710040.89	N 39 57 20.33	W 80 32 3.61	4.36
	6093.00	17.55	61.77	6019.99	4869.87	-156.84	49.63	400.15	13.93	-6.13	-38.80	531861.03	1710054.56	N 39 57 20.38	W 80 32 3.44	4.43
	6137.00	17.03	46.09	6062.03	4911.91	-155.48	57.24	410.64	10.63	-1.18	-35.64	531868.64	1710065.05	N 39 57 20.46	W 80 32 3.30	4.47
	6182.00	17.55	32.08	6105.01	4954.89	-150.71	67.57	418.99	9.30	1.16	-31.13	531878.97	1710073.40	N 39 57 20.56	W 80 32 3.20	4.51
	6227.00	19.51	20.49	6147.69	4997.57	-142.74	80.36	425.23	9.25	4.36	-25.76	531891.76	1710079.64	N 39 57 20.69	W 80 32 3.12	4.55
	6271.00	22.39	10.90	6188.79	5038.67	-131.72	95.48	429.39	10.16	6.55	-21.80	531906.88	1710083.80	N 39 57 20.84	W 80 32 3.07	4.59
	6316.00	25.16	5.24	6229.97	5079.85	-117.42	113.43	431.88	7.97	6.16	-12.58	531924.82	1710086.29	N 39 57 21.02	W 80 32 3.04	4.63
	6361.00	29.20	358.20	6270.01	5119.89	-99.91	133.94	432.41	11.46	8.98	-15.64	531945.33	1710086.82	N 39 57 21.22	W 80 32 3.04	4.67
	6406.00	33.55	354.81	6308.42	5158.30	-78.93	157.31	430.94	10.43	9.67	-7.53	531968.70	1710085.35	N 39 57 21.45	W 80 32 3.06	4.71
	6451.00	39.04	351.26	6344.68	5194.56	-54.41	183.72	427.66	13.06	12.20	-7.89	531995.11	1710082.07	N 39 57 21.71	W 80 32 3.10	4.76
	6495.00	43.92	350.70	6377.63	5227.51	-27.19	212.50	423.09	11.12	11.09	-1.27	532023.89	1710077.50	N 39 57 21.99	W 80 32 3.17	4.80
	6540.00	48.68	348.50	6408.72	5258.60	3.46	244.48	419.19	11.15	10.58	-4.89	532055.87	1710071.60	N 39 57 22.31	W 80 32 3.25	4.85
	6585.00	53.70	344.95	6436.92	5286.80	37.04	278.58	409.11	12.73	11.16	-7.89	532089.96	1710063.52	N 39 57 22.65	W 80 32 3.36	4.90
	6630.00	59.44	341.51	6461.70	5311.58	73.59	314.50	398.24	14.26	12.76	-7.64	532125.89	1710052.65	N 39 57 23.00	W 80 32 3.50	4.94
	6675.00	63.32	337.70	6483.26	5333.14	112.52	351.50	384.46	11.38	8.62	-8.47	532162.88	1710038.87	N 39 57 23.36	W 80 32 3.68	4.99
	6719.00	66.07	332.83	6502.07	5351.95	152.12	387.60	367.81	11.80	6.25	-11.07	532198.98	1710022.22	N 39 57 23.72	W 80 32 3.90	5.03
	6764.00	69.10	330.01	6519.23	5369.11	193.70	424.12	347.90	8.88	6.73	-6.27	532235.50	1710002.31	N 39 57 24.08	W 80 32 4.16	5.07
	6809.00	73.27	327.14	6533.75	5383.63	236.26	460.45	325.69	11.06	9.27	-6.38	532271.83	1709980.10	N 39 57 24.43	W 80 32 4.45	5.10
	6854.00	77.68	325.22	6545.03	5394.91	279.71	496.62	301.44	10.63	9.80	-4.27	532308.00	1709955.86	N 39 57 24.79	W 80 32 4.77	5.14
	6898.00	81.37	324.93	6553.03	5402.91	322.81	532.09	276.68	8.41	8.39	-0.66	532343.47	1709931.09	N 39 57 25.14	W 80 32 5.03	5.18
	6943.00	87.11	324.27	6557.54	5407.42	367.36	568.57	250.75	12.84	12.76	-1.47	532379.94	1709905.17	N 39 57 25.49	W 80 32 5.43	5.21
	6988.00	90.38	322.32	6558.53	5408.41	412.03	604.63	223.87	8.46	7.27	-4.33	532416.01	1709878.29	N 39 57 25.85	W 80 32 5.78	5.25
	7033.00	90.69	322.31	6558.11	5407.99	456.62	640.24	196.36	0.69	0.69	-0.02	532451.61	1709850.78	N 39 57 26.20	W 80 32 6.14	5.27
	7122.00	88.25	321.60	6558.93	5408.81	544.72	710.32	141.52	2.86	-2.74	-0.80	532521.69	1709795.94	N 39 57 26.88	W 80 32 6.86	5.31
	7212.00	88.35	322.01	6561.60	5411.48	633.76	781.02	85.89	0.47	0.11	0.46	532592.39	1709740.32	N 39 57 27.57	W 80 32 7.58	5.35
	7302.00	90.24	318.68	6562.71	5412.59	722.45	850.30	28.47	4.25	2.10	-3.70	532661.66	1709682.90	N 39 57 28.25	W 80 32 8.33	5.40
	7391.00	91.27	316.86	6561.54	5411.42	809.40	916.19	-31.34	2.35	1.16	-2.04	532727.55	1709623.09	N 39 57 28.90	W 80 32 9.11	5.43
	7481.00	92.34	318.99	6558.70	5408.58	897.35	982.95	-91.61	2.65	1.19	2.37	532794.31	1709562.82	N 39 57 29.55	W 80 32 9.89	5.47
	7570.00	89.86	321.59	6556.99	5406.87	985.03	1051.40	-148.46	4.04	-2.79	2.92	532862.75	1709505.98	N 39 57 30.22	W 80 32 10.63	5.51
	7660.00	90.45	322.89	6556.75	5406.63	1074.20	1122.55	-203.57	1.59	0.66	1.44	532933.90	1709450.87	N 39 57 30.92	W 80 32 11.35	5.54
	7749.00	90.65	324.02	6555.90	5405.78	1162.61	1194.04	-256.56	1.29	0.22	1.27	533005.39	1709397.88	N 39 57 31.62	W 80 32 12.04	5.57
	7839.00	91.17	324.47	6554.47	5404.35	1252.14	1287.07	-309.14	0.76	0.58	0.50	533078.42	1709345.30	N 39 57 32.33	W 80 32 12.73	5.60
	7928.00	91.24	324.08	6552.59	5402.47	1340.67	1339.31	-361.10	0.45	0.08	-0.44	533150.65	1709293.35	N 39 57 33.04	W 80 32 13.40	5.62
	8017.00	91.31	324.73	6550.61	5400.49	1429.21	1411.66	-412.89	0.73	0.08	0.73	533223.00	1709241.56	N 39 57 33.75	W 80 32 14.08	5.65
	8107.00	90.93	324.15	6548.85	5398.73	1518.77	1484.86	-465.22	0.77	-0.42	-0.64	533296.20	1709189.23	N 39 57 34.47	W 80 32 14.76	5.67
	8196.00	91.65	323.39	6546.85	5396.73	1607.21	1556.63	-517.80	1.18	0.81	-0.85	533367.97	1709136.65	N 39 57 35.17	W 80 32 15.45	5.70
	8286.00	90.86	323.99	6544.88	5394.76	1696.64	1629.14	-571.08	1.10	-0.88	0.67	533440.47	1709083.37	N 39 57 35.88	W 80 32 16.14	5.72
	8375.00	91.13	324.02	6543.33	5393.21	1785.13	1701.14	-623.38	0.31	0.30	0.03	533512.46	1709031.08	N 39 57 36.59	W 80 32 16.82	5.74
	8465.00	90.14	323.74	6542.34	5392.22	1874.60	1773.83	-676.43	1.14	-1.10	-0.31	533585.15	1708978.03	N 39 57 37.30	W 80 32 17.52	5.77
	8554.00	89.76	323.80	6542.41	5392.29	1963.07	1845.62	-729.03	0.43	-0.43	0.07	533656.94	1708925.43	N 39 57 38.00	W 80 32 18.20	5.79
	8643.00	89.97	322.81	6542.63	5392.51	2052.45	1917.79	-782.81	1.12	0.23	-1.10	533729.10	1708871.65	N 39 57 38.71	W 80 32 18.90	5.81
	8733.00	89.62	322.08	6542.95	5392.83	2140.67	1988.34	-837.06	0.91	-0.39	-0.82	533799.65	1708817.41	N 39 57 39.40	W 80 32 19.61	5.83
	8823.00	90.21	322.66	6543.08	5392.96	2229.86	2059.62	-892.01	0.92	0.66	0.64	533870.93	1708762.46	N 39 57 40.10	W 80 32 20.33	5.85
	8912.00	91.06	324.00	6542.09	5391.97	2318.24	2131.00	-945.15	1.78	0.96	1.51	533942.30	1708709.32	N 39 57 40.80	W 80 32 21.02	5.87

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
	9002.00	90.76	323.31	6540.66	5390.54	2407.67	2203.48	-998.48	0.84	-0.33	-0.77	534014.78	1708655.99	N 39 57 41.51 W	80 32 21.72	5.89
	9091.00	91.07	322.28	6539.24	5389.12	2495.95	2274.36	-1052.29	1.21	0.35	-1.16	534085.66	1708602.18	N 39 57 42.20 W	80 32 22.42	5.91
	9181.00	90.52	321.41	6537.99	5387.87	2585.02	2345.12	-1107.89	1.14	-0.61	-0.97	534156.42	1708546.59	N 39 57 42.89 W	80 32 23.14	5.93
	9271.00	91.51	320.92	6536.40	5386.28	2673.93	2415.21	-1164.32	1.23	1.10	-0.54	534226.51	1708490.17	N 39 57 43.58 W	80 32 23.88	5.95
	9360.00	91.99	319.94	6533.68	5383.56	2761.64	2483.79	-1220.98	1.23	0.54	-1.10	534295.08	1708433.50	N 39 57 44.25 W	80 32 24.61	5.96
	9450.00	91.79	320.39	6530.71	5380.59	2850.26	2552.86	-1278.60	0.55	-0.22	0.50	534364.14	1708375.88	N 39 57 44.93 W	80 32 25.37	5.98
	9539.00	91.85	320.68	6527.89	5377.77	2937.99	2621.53	-1335.14	0.33	0.07	0.33	534432.82	1708319.35	N 39 57 45.60 W	80 32 26.10	6.00
	9629.00	90.65	322.79	6525.92	5375.80	3027.02	2692.17	-1390.86	2.70	-1.33	2.34	534503.45	1708263.63	N 39 57 46.29 W	80 32 26.83	6.02
	9718.00	88.80	324.03	6526.35	5376.23	3115.42	2763.63	-1443.91	2.50	-2.08	1.39	534574.91	1708210.58	N 39 57 46.99 W	80 32 27.52	6.04
	9808.00	89.62	323.57	6527.59	5377.47	3204.87	2836.25	-1497.06	1.04	0.91	-0.51	534647.52	1708157.44	N 39 57 47.70 W	80 32 28.21	6.05
	9897.00	89.35	323.70	6528.39	5378.27	3293.32	2907.91	-1549.83	0.34	-0.30	0.15	534719.18	1708104.67	N 39 57 48.40 W	80 32 28.90	6.07
	9987.00	89.00	323.23	6529.69	5379.57	3382.71	2980.22	-1603.40	0.65	-0.39	-0.52	534791.49	1708051.10	N 39 57 49.11 W	80 32 29.60	6.08
	10076.00	89.79	323.07	6530.63	5380.51	3471.07	3051.43	-1656.77	0.91	0.89	-0.18	534862.70	1707997.73	N 39 57 49.81 W	80 32 30.30	6.10
	10166.00	90.96	324.75	6530.04	5379.92	3560.54	3124.16	-1709.78	2.27	1.30	1.87	534935.42	1707944.72	N 39 57 50.52 W	80 32 30.99	6.11
	10256.00	91.24	325.03	6528.31	5378.19	3650.16	3197.77	-1761.54	0.44	0.31	0.31	535009.02	1707892.97	N 39 57 51.24 W	80 32 31.66	6.13
	10345.00	91.10	324.60	6526.49	5376.37	3738.78	3270.49	-1812.81	0.51	-0.16	-0.48	535081.75	1707841.70	N 39 57 51.96 W	80 32 32.33	6.14
	10435.00	90.14	323.70	6525.52	5375.40	3828.29	3343.43	-1865.52	1.46	-1.07	-1.00	535154.69	1707789.00	N 39 57 52.67 W	80 32 33.02	6.16
	10524.00	90.72	323.74	6524.85	5374.73	3916.75	3415.18	-1918.18	0.65	0.65	0.04	535226.43	1707736.34	N 39 57 53.38 W	80 32 33.71	6.17
	10613.00	90.45	322.37	6523.94	5373.82	4005.08	3486.30	-1971.67	1.57	-0.30	-1.54	535297.55	1707682.85	N 39 57 54.07 W	80 32 34.40	6.19
	10703.00	90.86	322.58	6522.91	5372.79	4094.29	3557.68	-2026.48	0.51	0.46	0.23	535368.92	1707628.04	N 39 57 54.77 W	80 32 35.12	6.20
	10793.00	91.72	321.75	6520.89	5370.77	4183.42	3628.74	-2081.67	1.33	0.96	-0.92	535439.98	1707572.85	N 39 57 55.47 W	80 32 35.84	6.21
	10882.00	91.17	322.24	6518.64	5368.52	4271.52	3698.84	-2136.45	0.83	-0.62	0.55	535510.08	1707518.07	N 39 57 56.15 W	80 32 36.55	6.23
Final Survey 22Jan13	10909.00	91.24	323.13	6518.07	5367.95	4298.29	3720.31	-2152.82	3.31	0.26	3.30	535531.55	1707501.71	N 39 57 56.36 W	80 32 36.77	6.23
Projection to Bit	10972.00	91.24	323.13	6516.71	5366.59	4360.82	3770.70	-2190.61	0.00	0.00	0.00	535581.93	1707463.92	N 39 57 56.86 W	80 32 37.26	6.24

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program: ISCSA

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	18.650		30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / Noble Energy SHL-8H-HS Gyro+MWD 0' to 10972 MD
	18.650	2897.000		30.000	SLB_NSG+MSHOT	Original Borehole / Noble Energy SHL-8H-HS Gyro+MWD 0' to
	2897.000	3452.000		30.000	SLB_MWD-INC_ONLY	Original Borehole / Noble Energy SHL-8H-HS Gyro+MWD 0' to
	3452.000	10909.000		30.000	SLB_MWD-STD	Original Borehole / Noble Energy SHL-8H-HS Gyro+MWD 0' to
	10909.000	10972.000		30.000	SLB_BLIND+TREND	Original Borehole / Noble Energy SHL-8H-HS Gyro+MWD 0' to

02/28/2014