

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

✓ JR

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

LOCATION: Sandhill 8 Elevation: 1,139.74 Quadrangle: Majorsville

District: Sandhill County: MARSHALL
Latitude: _____ Feet South of Deg. Min. Sec. 39.955394
Longitude: _____ Feet South of Deg. Min. Sec. -80.535461

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	514	514	970 sxs / 212 bbls cemented to surface
Inspector: Bill Hendershot	13 3/8	1,049	1,049	899 sxs/ 191 bbls cemented to surface
Date Permit Issued: 5/24/2013	9 5/8	3,026	3,026	1030 sxs / 204 bbls cemented to surface
Date Well Work Commenced: _____ 4/6/2013	5 1/2	12,264	12,264	2013 sxs / 456 bbls cemented
Date Well Work Completed: _____ 7/15/2013				
Verbal Plugging:				
Date Permission granted on: _____ 4/6/2013				
Rotary Cable Rig X				
Total Vertical Depth (ft): ORIGINAL HOLE 6,625.89				
Total Measured Depth (ft): 12,285.00				
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 Pittsburgh 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) N/A
Gas: Initial open flow 828 MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow 1493 MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure N/A psig (surface pressure) after N/A 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
August 1, 2014
Environmental Protection

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.

Anna L. Adkins 1-27-14
Signature Date
Anna L. Adkins, Noble Energy One. 1/21/14

03/07/2014

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 Long

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

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SHL 8N

47-051-01587

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	2450	
Shale	1273	1345	1273	2453	
1st Salt Sand	1345	1407	1345	2509	
Shale	1407	1464	1407	2512	
2nd Salt Sand	1464	1496	1464	2559	
Shale	1496	1578	1496	2567	
Maxton Sand	1578	1627	1578	2602	
Shale	1627	1654	1627	2612	
Big Lime	1654	1719	1654	2715	
Big Injun	1719	1892	1719	2756	
Price	1892	2242	1892	3147	
Murrysville	2242	2255	2242	3186	
Shale	2255	2449	2255	4221	
50' Sand	2449	2452	2450	4232	
Shale	2452	2508	2453	2509	
30' Sand	2508	2511	2509	2512	
Shale	2511	2558	2512	2559	
Gordon Stray	2558	2566	2559	2567	
Shale	2566	2600	2567	2602	
Gordon	2600	2610	2602	2612	
Shale	2610	2713	2612	2715	
Fifth Sand	2713	2754	2715	2756	
Shale	2754	3145	2756	3147	
Speechley Sand	3145	3184	3147	3186	
Shale	3184	4217	3186	4221	
Warren Sand	4217	4227	4221	4232	
Shale	4227	4907	4232	4995	
Java Shale	4907	5011	4995	5114	
Pipe Creek Shale	5011	5109	5114	5226	
Angola Shale	5109	5743	5226	5946	
Rhinestreet	5743	6180	5946	6447	
Cashaqua	6180	6281	6447	6582	
Middlesex	6281	6312	6582	6627	
West River	6312	6369	6627	6715	
Burkett	6369	6394	6715	6757	
Tully Limestone	6394	6421	6757	6805	
Hamilton	6421	6535	6805	7081	
Marcellus	6535	6584	7081	not encountered	Gas
Cherry Valley	6543	6545	not encountered	not encountered	
Onondaga	6584		not encountered	not encountered	

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Stage #	Plug Type	Plug Depth
1	Toe Sleeve	12,124
2	Composite Frac Plug	11,839
3	Composite Frac Plug	11,643
4	Composite Frac Plug	11,333
5	Composite Frac Plug	11,013
6	Composite Frac Plug	10,883
7	Composite Frac Plug	10,679
8	Composite Frac Plug	10,489
9	Composite Frac Plug	10,314
10	Composite Frac Plug	10,108
11	Composite Frac Plug	9,886
12	Composite Frac Plug	9,634
13	Composite Frac Plug	9,382
14	Composite Frac Plug	NA
15	Composite Frac Plug	8,822
16	Composite Frac Plug	8,570
17	Composite Frac Plug	8,281
18	Composite Frac Plug	8,014
19	Composite Frac Plug	7,823
20	Composite Frac Plug	7,607
21	Composite Frac Plug	7,413
	Bridge Plug	6,000

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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)
6/29/2013	inj test	Marcellus	Slickwater	11,875	12,122	6	5997	6749	9.7	NA		0	0	19,934
6/30/2013	1	Marcellus	Slickwater	11859	12113	48	6324	7906	76.6	9655	1.89	412004	3000	333,853
7/3/2013	2	Marcellus	Slickwater	11665	11765	40	5460	8442	80.7	4498	1.11	289936	3000	343,609
7/3/2013	3	Marcellus	Slickwater	11355	11582	40	5600	7586	80.4	4352	1.09	434842	3000	349,053
7/3/2013	4	Marcellus	Slickwater	11033	11195	41	6276	7581	82.3	4770	1.15	436770	3000	339,058
7/4/2013	5	Marcellus	Slickwater	10903	10998	40	5869	7810	78.9	5022	1.19	292557	3000	268,602
7/4/2013	6	Marcellus	Slickwater	10699	10840	40	5367	7562	77.4	5588	1.28	289282	6000	275,625
7/5/2013	7	Marcellus	Slickwater	10499	10647	40	5917	7638	80.7	4743	1.15	287130	3000	274,257
7/5/2013	8	Marcellus	Slickwater	10334	10464	42	5697	7177	81	4621	1.13	289726	3000	267,172
7/5/2013	9	Marcellus	Slickwater	10128	10287	41	5590	7443	78.5	4769	1.15	220668	3000	267,172
7/7/2013	10	Marcellus	Slickwater	9906	10063	41	5516	7253	80.6	4404	1.10	289585	3000	272,855
7/7/2013	11	Marcellus	Slickwater	9654	9849	40	5744	6906	80.4	7591	1.58	254980	3000	255,056
7/8/2013	12	Marcellus	Slickwater	8402	9594	42	5974	7007	81.6	4453	1.11	362489	3000	295,324
7/8/2013	13	Marcellus	Slickwater	9138	9366	40	6083	7375	79.25	5085	1.20	508362	6000	502,115
7/13/2013	14	Marcellus	Slickwater	8842	9015	40	6477	7506	82.5	4512	1.12	434882	3000	340,399
7/13/2013	15	Marcellus	Slickwater	8590	8773	42	6277	7024	81.4	4506	1.12	398808	3000	292,308
7/13/2013	16	Marcellus	Slickwater	8301	8524	42	5595	7266	81.4	4470	1.11	433834	3000	363,943
7/14/2013	17	Marcellus	Slickwater	8034	8264	41	5894	7089	82.4	4812	1.16	435125	3000	334,766
7/14/2013	18	Marcellus	Slickwater	7843	8003	41	6312	7597	80.5	4454	1.11	291688	3000	251,088
7/15/2013	19	Marcellus	Slickwater	7627	7792	41	5376	7348	79.2	4804	1.16	290512	3000	258,096
7/15/2013	20	Marcellus	Slickwater	7433	7593	42	5424	7072	81.6	4702	1.15	291868	3000	260,811
7/15/2013	21	Marcellus	Slickwater	7209	7372	40	5742	7114	82	4557	1.13	367335	3000	288,952

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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%	87.30445%	Density = 8.340
HYDROCHLORIC ACID 5-10%	Halliburton		Hydrochloric acid	7647-01-0	10.00%	0.09987%	
SAND - PREMIUM - 100 MESH, 50 KG, SK (101342741)	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	1.19458%	
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	10.34631%	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.02094%	
BE-9	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00%	0.00395%	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor	Ammonium chloride	12125-02-9	10.00%	0.00239%	
LGC-36 UC	Halliburton	Liquid Gel Concentrate	Guar gum	9000-30-0	60.00%	0.00045%	
			Naphtha, hydrotreated heavy	64742-48-9	60.00%	0.00045%	
BA-40L BUFFERING AGENT	Halliburton	Buffer	Potassium carbonate	584-08-7	60.00%	0.00015%	
LoSurf-300D	Halliburton	Non-ionic Surfactant	1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00002%	
			Ethanol	64-17-5	60.00%	0.00100%	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.00050%	
			Naphthalene	91-20-3	5.00%	0.00008%	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00%	0.00008%	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Methanol	67-56-1	60.00%	0.00049%	
			Propargyl alcohol	107-19-7	10.00%	0.00008%	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic acid	64-19-7	60.00%	0.00297%	
			Acetic anhydride	108-24-7	100.00%	0.00495%	
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00%	0.00065%	
WG-36 GELLING AGENT	Halliburton	Gelling Agent	Guar gum	9000-30-0	100.00%	0.01350%	
Biovert NWB	Halliburton	Viscosifier	Poly lactide resin	Confidential Business Information	100.00%	0.00017%	

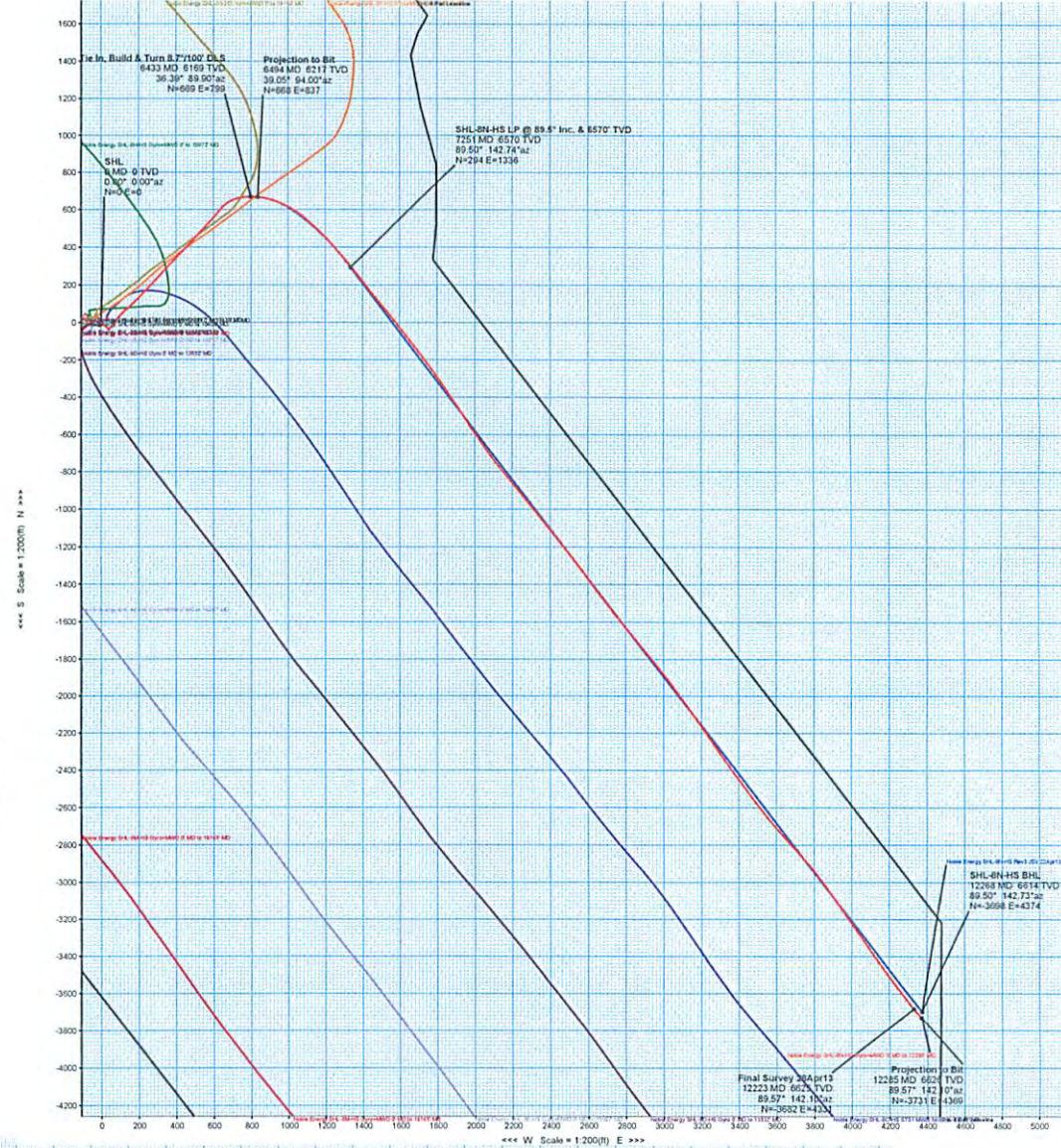
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WELL	SHL-8N-HS	FIELD	WV Marshall County (NAD 27)	STRUCTURE	Precision 543
Magnetic Parameters Model: HEM3D 2012 Mag Dec: -8.437°		Surface Location Lat: N 39°57'19.420" Long: W 89°32' T444'		Miscellaneous Stat: S/G 4th Ed Plan: Rev'd JIV 22 Apr 13	
Date: April 22, 2013 PS: 13229-347		Magnetic Parameters MAG Dec: -8.437°		TVD Ref: K81130 '48 above MSL	
Date: April 22, 2013		MAG Dec: -8.437°		Date: April 22, 2013	

Legend

- SHL-8N-HS (Borehole)
- SHL-8N-HS LP (Log) @ 89.4° Inc. & 6570' TVD
- SHL-8N-HS BHL (Bottom Hole Location)
- SHL-8N-HS (Well Path)

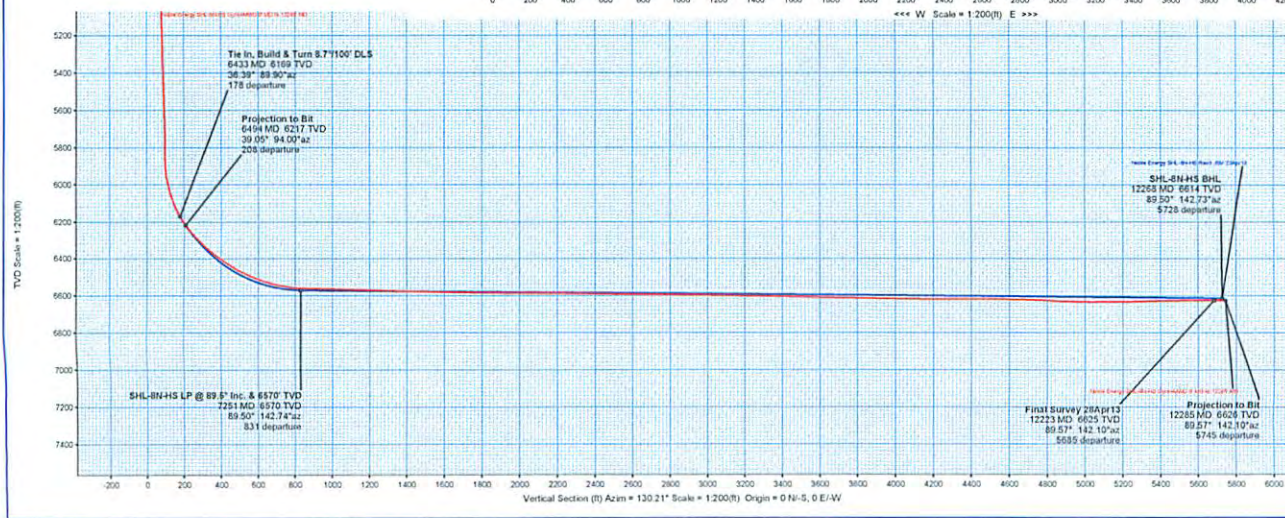


Well Path Summary

MD	Depth	Inc.	Comp.
6433	6169	8.7°	DLS
6494	6211	39.05°	Bit
7251	6570	89.4°	LP
12285	6614	89.5°	BHL

Coordinate Conversion

Zone	UTM Easting	UTM Northing	NAD 83 Easting	NAD 83 Northing
18QUS	198000	4800000	198000	4800000



Drawn By: [Name]
 Date Created: April 22, 2013 10:58:28 AM
 Checked Date: [Name]
 Approved Date: [Name]

4705101587



Noble Energy SHL-8N-HS Gyro-MWD 0' MD to 12285' MD Survey Report

(Def Survey)

Report Date: April 29, 2013 - 08:31 AM
 Client: Noble Energy
 Field: WV Marshall County (NAD 27)
 Structure / Slot: CNX/Noble Energy SHL-8 Pad / SHL-8N-HS
 Well: SHL-8N-HS
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Noble Energy SHL-8N-HS Gyro-MWD 0' MD to 12285' MD
 Survey Date: April 14, 2013
 Tort / AHD / DDI / ERD Ratio: 216.266° / 6853.249 ft / 6.439 / 1.033
 Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
 Location Lat / Long: N 39° 57' 19.42046", W 80° 32' 7.66423"
 Location Grid N/E Y/X: N 531767.540 ftUS, E 1709724.320 ftUS
 CRS Grid Convergence Angle: -0.6604°
 Grid Scale Factor: 0.99995723

Total Corr Mag North->Grid North: -7.7866°
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Directional Difficulty Index
SHL	0.00	0.00	0.00	0.00	-1150.76	0.00	0.00	0.00	N/A	N/A	N/A	531767.54	1709724.32	N 39 57 19.42	W 80 32 7.66	0.00
	50.00	0.17	275.32	50.00	-1100.76	-0.06	0.01	-0.07	0.34	0.34	0.00	531767.55	1709724.25	N 39 57 19.42	W 80 32 7.67	0.00
	100.00	0.13	300.77	100.00	-1050.76	-0.18	0.04	-0.20	0.15	-0.08	50.90	531767.58	1709724.12	N 39 57 19.42	W 80 32 7.67	0.00
	150.00	0.20	293.32	150.00	-1000.76	-0.32	0.11	-0.33	0.15	0.14	-14.90	531767.65	1709723.99	N 39 57 19.42	W 80 32 7.67	0.00
	200.00	0.18	333.12	200.00	-950.76	-0.47	0.21	-0.44	0.26	-0.04	79.60	531767.75	1709723.88	N 39 57 19.42	W 80 32 7.67	0.00
	250.00	0.11	280.66	250.00	-900.76	-0.59	0.29	-0.52	0.29	-0.14	-104.92	531767.83	1709723.80	N 39 57 19.42	W 80 32 7.67	0.00
	300.00	0.29	276.97	300.00	-850.76	-0.73	0.31	-0.70	0.36	0.36	-7.38	531767.85	1709723.62	N 39 57 19.42	W 80 32 7.67	0.00
	350.00	0.32	284.84	350.00	-800.76	-0.97	0.37	-0.96	0.10	0.06	15.74	531767.91	1709723.36	N 39 57 19.42	W 80 32 7.68	0.00
	400.00	0.29	274.79	400.00	-750.76	-1.20	0.41	-1.22	0.12	-0.06	-20.10	531767.95	1709723.10	N 39 57 19.42	W 80 32 7.68	0.07
	450.00	0.31	254.17	450.00	-700.76	-1.37	0.39	-1.47	0.22	0.04	-41.24	531767.93	1709722.85	N 39 57 19.42	W 80 32 7.68	0.20
	498.00	0.24	273.64	498.00	-652.76	-1.53	0.36	-1.70	0.24	-0.15	40.56	531767.90	1709722.62	N 39 57 19.42	W 80 32 7.69	0.31
	600.00	0.29	264.51	600.00	-550.76	-1.88	0.35	-2.17	0.06	0.05	-8.95	531767.89	1709722.15	N 39 57 19.42	W 80 32 7.69	0.43
	700.00	0.20	264.19	699.99	-450.77	-2.18	0.30	-2.60	0.09	-0.09	-0.32	531767.84	1709721.72	N 39 57 19.42	W 80 32 7.70	0.54
	800.00	0.21	278.65	799.99	-350.77	-2.45	0.31	-2.95	0.05	0.01	14.46	531767.85	1709721.37	N 39 57 19.42	W 80 32 7.70	0.61
	900.00	0.15	278.76	899.99	-250.77	-2.72	0.36	-3.26	0.06	-0.06	0.11	531767.90	1709721.06	N 39 57 19.42	W 80 32 7.71	0.67
	1000.00	0.16	280.61	999.99	-150.77	-2.96	0.41	-3.53	0.01	0.01	1.85	531767.95	1709720.79	N 39 57 19.42	W 80 32 7.71	0.71
	1100.00	0.11	282.29	1099.99	-50.77	-3.16	0.45	-3.76	0.15	-0.05	1.68	531767.99	1709720.56	N 39 57 19.42	W 80 32 7.71	0.75
	1200.00	0.22	338.38	1199.99	49.23	-3.42	0.65	-3.92	0.18	0.11	56.09	531768.19	1709720.40	N 39 57 19.43	W 80 32 7.71	0.83
	1300.00	0.23	16.46	1299.99	149.23	-3.67	1.02	-3.94	0.15	0.01	38.08	531768.56	1709720.38	N 39 57 19.43	W 80 32 7.71	0.90
	1400.00	0.12	73.23	1399.99	249.23	-3.69	1.24	-3.78	0.19	-0.11	56.77	531768.78	1709720.54	N 39 57 19.43	W 80 32 7.71	0.98
	1500.00	0.16	351.07	1499.99	349.23	-3.74	1.41	-3.70	0.19	0.04	-82.16	531768.95	1709720.62	N 39 57 19.43	W 80 32 7.71	1.03
	1600.00	0.17	129.49	1599.99	449.23	-3.70	1.46	-3.61	0.31	0.01	138.42	531769.00	1709720.71	N 39 57 19.43	W 80 32 7.71	1.11
	1700.00	0.15	46.68	1699.99	549.23	-3.53	1.45	-3.40	0.21	-0.02	-82.81	531768.99	1709720.92	N 39 57 19.43	W 80 32 7.71	1.16
	1800.00	0.22	148.60	1799.99	649.23	-3.34	1.38	-3.20	0.29	0.07	101.92	531768.92	1709721.12	N 39 57 19.43	W 80 32 7.71	1.23

03/07/2014

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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)	Eastings (ftUS)	Latitude (NIS ° ' ")	Longitude (EWS ° ' ")	Directional Difficulty Index
	1900.00	0.34	134.39	1899.99	749.23	-2.86	1.01	-2.89	0.14	0.12	-14.21	531768.55	1709721.43	N 39 57 19.43 W	80 32 7.70	1.28
	1930.00	0.30	136.27	1929.99	779.23	-2.69	0.89	-2.77	0.14	-0.13	6.27	531768.43	1709721.55	N 39 57 19.43 W	80 32 7.70	1.30
	1957.00	0.31	161.01	1956.99	806.23	-2.56	0.77	-2.70	0.49	0.04	91.63	531768.31	1709721.62	N 39 57 19.43 W	80 32 7.70	1.33
	2047.00	0.79	132.53	2046.98	896.22	-1.73	0.12	-0.38	0.60	0.53	-31.64	531767.66	1709722.16	N 39 57 19.42 W	80 32 7.69	1.45
	2136.00	2.11	125.32	2135.95	985.19	0.52	-1.24	-0.36	1.49	1.48	-8.10	531766.30	1709723.95	N 39 57 19.41 W	80 32 7.67	1.69
	2226.00	3.38	129.32	2225.85	1075.09	4.82	-3.88	3.03	1.43	1.41	4.44	531763.66	1709727.35	N 39 57 19.38 W	80 32 7.62	1.95
	2316.00	4.61	126.51	2315.63	1164.87	11.08	-7.72	7.99	1.38	1.37	-3.12	531759.82	1709732.31	N 39 57 19.35 W	80 32 7.56	2.19
	2405.00	5.58	132.53	2404.28	1253.52	18.98	-12.77	14.05	1.24	1.09	6.76	531754.77	1709738.37	N 39 57 19.30 W	80 32 7.48	2.39
	2495.00	5.71	126.33	2493.84	1343.08	27.81	-18.38	20.88	0.69	0.14	-6.89	531749.16	1709745.20	N 39 57 19.24 W	80 32 7.39	2.54
	2584.00	4.92	123.83	2582.46	1431.70	36.03	-23.13	27.62	0.92	-0.89	-2.81	531744.41	1709751.94	N 39 57 19.20 W	80 32 7.31	2.66
	2674.00	4.09	124.53	2672.18	1521.42	43.05	-27.10	33.47	0.92	-0.92	0.78	531740.45	1709757.79	N 39 57 19.16 W	80 32 7.23	2.76
	2763.00	3.60	122.82	2760.98	1610.22	48.98	-30.41	38.43	0.57	-0.55	-1.92	531737.13	1709762.75	N 39 57 19.12 W	80 32 7.17	2.83
	2853.00	2.20	122.99	2850.86	1700.10	53.50	-32.88	42.26	1.56	-1.56	0.19	531734.66	1709766.58	N 39 57 19.10 W	80 32 7.12	2.91
	2942.00	0.22	177.31	2939.84	1789.08	55.31	-33.98	43.70	2.34	-2.22	61.03	531733.56	1709768.02	N 39 57 19.09 W	80 32 7.10	2.99
	2988.00	0.40	220.73	2985.84	1835.08	55.37	-34.19	43.60	0.62	0.39	94.39	531733.35	1709767.92	N 39 57 19.09 W	80 32 7.10	3.00
	3105.00	0.62	216.51	3102.83	1952.07	55.41	-35.01	42.96	0.19	0.19	-3.61	531732.53	1709767.27	N 39 57 19.08 W	80 32 7.11	3.01
	3194.00	0.62	222.53	3191.83	2041.07	55.42	-35.75	42.34	0.07	0.00	6.76	531731.79	1709766.66	N 39 57 19.07 W	80 32 7.12	3.02
	3284.00	0.62	229.30	3281.82	2131.06	55.32	-36.43	41.65	0.08	0.00	7.52	531731.11	1709765.96	N 39 57 19.05 W	80 32 7.12	3.03
	3373.00	0.40	239.71	3370.82	2220.06	55.14	-36.90	41.01	0.27	-0.25	11.70	531730.64	1709765.33	N 39 57 19.06 W	80 32 7.13	3.04
	3463.00	0.48	246.83	3460.81	2310.05	54.87	-37.21	40.39	0.11	0.09	7.91	531730.34	1709764.71	N 39 57 19.06 W	80 32 7.14	3.05
	3552.00	0.31	254.13	3549.81	2399.05	54.57	-37.42	39.82	0.20	-0.19	8.20	531730.12	1709764.14	N 39 57 19.06 W	80 32 7.15	3.05
	3642.00	0.31	249.60	3639.81	2489.05	54.31	-37.57	39.36	0.03	0.00	-5.03	531729.97	1709763.68	N 39 57 19.05 W	80 32 7.15	3.06
	3732.00	0.31	3729.81	3729.81	2579.05	54.08	-37.74	38.90	0.01	0.00	-1.22	531729.80	1709763.22	N 39 57 19.05 W	80 32 7.16	3.06
	4268.00	14.81	30.20	4262.42	2668.05	53.78	-37.91	38.38	0.11	0.10	11.70	531729.63	1709762.70	N 39 57 19.05 W	80 32 7.17	3.07
	4388.00	20.08	36.63	4348.25	2758.05	53.41	-37.98	37.83	0.15	-0.10	19.00	531729.57	1709762.15	N 39 57 19.05 W	80 32 7.17	3.07
	4447.00	23.29	58.22	4430.95	2847.02	53.82	-36.94	39.24	3.10	2.46	163.48	531730.60	1709763.56	N 39 57 19.06 W	80 32 7.15	3.15
	4090.00	6.02	50.31	4087.52	2936.76	55.25	-32.89	44.54	3.96	3.91	-8.79	531734.65	1709768.86	N 39 57 19.10 W	80 32 7.09	3.26
	4268.00	14.81	30.20	4262.42	2668.05	53.78	-37.91	38.38	0.11	0.10	11.70	531729.63	1709762.70	N 39 57 19.05 W	80 32 7.17	3.07
	4388.00	20.08	36.63	4348.25	2758.05	53.41	-37.98	37.83	0.15	-0.10	19.00	531729.57	1709762.15	N 39 57 19.05 W	80 32 7.17	3.07
	4447.00	23.29	58.22	4430.95	2847.02	53.82	-36.94	39.24	3.10	2.46	163.48	531730.60	1709763.56	N 39 57 19.06 W	80 32 7.15	3.15
	4537.00	27.91	47.80	4512.11	3361.35	56.31	66.05	129.58	5.72	5.13	5.86	531833.58	1709853.89	N 39 57 20.09 W	80 32 6.01	3.99
	4626.00	31.99	47.72	4589.21	3438.45	62.14	95.91	162.46	4.58	4.58	-0.09	531863.45	1709886.78	N 39 57 20.39 W	80 32 5.89	4.11
	4716.00	31.82	44.33	4665.61	3514.85	66.96	128.92	196.68	2.00	-3.77	531896.46	1709920.99	N 39 57 20.72 W	80 32 5.16	4.20	
	4805.00	30.01	43.01	4741.97	3591.21	69.73	161.99	228.26	2.17	-2.03	-1.48	531929.52	1709952.57	N 39 57 21.05 W	80 32 4.76	4.28
	4895.00	30.28	42.93	4819.80	3669.04	71.90	195.06	259.07	0.30	0.30	-0.09	531962.59	1709983.38	N 39 57 21.38 W	80 32 4.37	4.34
	4984.00	29.31	42.22	4897.03	3746.27	73.73	227.62	288.99	1.16	-1.09	-0.80	531995.15	1710013.30	N 39 57 21.70 W	80 32 3.99	4.39
	5074.00	28.78	43.41	4975.71	3824.95	75.71	259.67	318.69	0.87	-0.59	1.32	532027.20	1710042.99	N 39 57 22.02 W	80 32 3.61	4.44
	5163.00	28.52	43.41	5053.82	3903.06	78.09	290.67	348.01	0.29	-0.29	0.00	532058.20	1710072.31	N 39 57 22.33 W	80 32 3.24	4.48
	5253.00	28.61	44.42	5132.86	3982.10	80.87	321.67	377.86	0.55	0.10	1.12	532089.20	1710102.16	N 39 57 22.64 W	80 32 2.86	4.52
	5343.00	28.21	43.81	5212.02	4061.26	83.79	352.41	407.66	0.55	-0.44	-0.68	532119.94	1710131.97	N 39 57 22.95 W	80 32 2.48	4.56
	5432.00	27.82	43.23	5290.59	4139.83	86.20	382.72	436.45	0.53	-0.44	-0.65	532150.25	1710160.75	N 39 57 23.25 W	80 32 2.12	4.59
	5522.00	27.69	43.01	5370.24	4219.48	88.32	413.32	465.10	0.18	-0.14	-0.24	532180.84	1710189.40	N 39 57 23.56 W	80 32 1.75	4.62
	5611.00	28.39	43.72	5448.79	4298.03	90.63	443.73	493.83	0.87	0.79	0.80	532211.25	1710218.13	N 39 57 23.86 W	80 32 1.39	4.65
	5700.00	28.52	42.40	5527.92	4377.16	92.76	475.06	523.11	0.71	0.14	-1.47	532242.58	1710247.40	N 39 57 24.17 W	80 32 1.02	4.68
	5790.00	28.52	42.79	5606.12	4455.36	94.52	506.34	551.87	0.21	0.00	0.44	532273.86	1710276.16	N 39 57 24.49 W	80 32 0.65	4.71
	5880.00	29.31	43.63	5684.90	4534.14	96.80	538.05	581.66	0.99	0.88	0.93	532305.57	1710305.96	N 39 57 24.80 W	80 32 0.28	4.73
	5969.00	28.78	41.52	5762.71	4611.95	98.59	569.86	610.90	1.30	-0.60	-2.37	532337.38	1710335.19	N 39 57 25.12 W	80 31 59.90	4.76

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVSS (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
	6076.00	27.02	39.66	5857.27	4706.51	98.94	607.86	643.49	1.83	-1.64	-1.74	532375.38	1710367.78	N 39 57 25.50 W	80 31 59.49	4.80
	6120.00	26.53	45.62	5896.56	4745.80	99.77	622.43	656.89	6.20	-1.11	13.55	532389.95	1710381.18	N 39 57 25.65 W	80 31 59.32	4.83
	6164.00	26.99	54.00	5935.86	4785.10	103.08	635.18	672.00	8.63	1.05	19.05	532402.69	1710396.29	N 39 57 25.77 W	80 31 59.13	4.86
	6209.00	27.86	61.60	5975.82	4825.06	109.35	646.19	689.51	8.01	1.93	16.89	532413.70	1710413.80	N 39 57 25.88 W	80 31 58.91	4.89
	6254.00	27.55	68.47	6015.67	4864.91	118.11	655.01	708.45	7.13	-0.69	15.27	532422.52	1710432.74	N 39 57 25.97 W	80 31 58.66	4.92
	6299.00	28.14	75.55	6055.47	4904.71	129.18	661.48	728.41	7.46	1.31	15.73	532428.99	1710452.70	N 39 57 26.04 W	80 31 58.41	4.95
	6343.00	31.01	81.10	6093.74	4942.98	142.60	665.82	749.66	9.01	6.52	12.61	532433.33	1710473.95	N 39 57 26.09 W	80 31 58.14	4.98
	6388.00	33.69	86.22	6131.76	4981.00	159.18	668.44	773.58	8.51	5.96	11.38	532435.95	1710497.86	N 39 57 26.11 W	80 31 57.83	5.01
	6433.00	36.39	89.90	6168.60	5017.84	178.34	669.29	799.39	7.62	6.00	8.18	532436.80	1710523.67	N 39 57 26.13 W	80 31 57.50	5.03
	6478.00	39.29	93.93	6204.14	5053.38	200.01	668.33	826.96	8.47	6.44	8.96	532435.84	1710551.24	N 39 57 26.12 W	80 31 57.14	5.06
	6522.00	41.88	98.16	6237.56	5086.80	223.70	665.29	855.41	8.59	5.89	9.61	532432.80	1710579.69	N 39 57 26.09 W	80 31 56.78	5.09
	6567.00	44.80	102.97	6270.29	5119.53	250.54	659.60	885.74	9.79	6.49	10.69	532427.11	1710610.02	N 39 57 26.04 W	80 31 56.39	5.12
	6612.00	46.27	107.57	6301.82	5151.06	279.65	651.13	916.70	7.99	3.27	10.22	532418.64	1710640.98	N 39 57 25.96 W	80 31 55.99	5.15
	6657.00	48.51	112.24	6332.30	5181.54	310.70	639.84	947.82	9.11	4.98	10.38	532407.35	1710672.09	N 39 57 25.85 W	80 31 55.59	5.18
	6701.00	51.54	115.31	6360.56	5209.80	343.03	626.23	978.65	8.72	6.89	6.98	532393.74	1710702.93	N 39 57 25.72 W	80 31 55.19	5.20
	6746.00	54.33	118.86	6387.69	5236.93	377.99	609.87	1010.60	8.83	6.20	7.89	532377.38	1710734.88	N 39 57 25.56 W	80 31 54.78	5.23
	6791.00	55.73	123.31	6413.49	5262.73	414.39	590.83	1042.16	8.68	3.11	9.89	532358.34	1710766.44	N 39 57 25.38 W	80 31 54.37	5.26
	6836.00	57.03	128.37	6438.42	5287.66	451.73	568.89	1072.52	9.80	2.89	11.24	532336.40	1710796.79	N 39 57 25.16 W	80 31 53.98	5.29
	6880.00	60.65	130.78	6461.18	5310.42	489.37	544.90	1101.52	9.47	8.23	5.48	532312.41	1710825.79	N 39 57 24.93 W	80 31 53.60	5.31
	6925.00	64.69	132.04	6481.84	5331.08	529.33	518.45	1131.49	9.32	8.98	2.80	532285.97	1710855.76	N 39 57 24.67 W	80 31 53.21	5.34
	6970.00	67.92	133.29	6499.92	5349.16	570.49	490.53	1161.78	7.61	7.18	2.78	532258.05	1710886.05	N 39 57 24.40 W	80 31 52.82	5.36
	7014.00	70.55	135.61	6515.52	5364.76	611.51	461.72	1191.14	7.75	5.98	5.27	532229.24	1710915.41	N 39 57 24.12 W	80 31 52.44	5.39
	7059.00	73.44	137.06	6529.43	5378.67	654.06	430.76	1220.68	7.12	6.42	3.22	532198.28	1710944.95	N 39 57 23.82 W	80 31 52.05	5.41
	7104.00	77.25	138.29	6540.81	5390.05	697.22	398.58	1249.99	8.87	8.47	2.73	532166.10	1710974.25	N 39 57 23.50 W	80 31 51.67	5.44
	7149.00	80.95	139.07	6549.32	5398.56	740.92	365.39	1279.16	8.40	8.22	1.73	532132.92	1711003.42	N 39 57 23.18 W	80 31 51.29	5.46
	7193.00	84.25	139.58	6554.99	5404.23	783.99	332.31	1307.59	7.59	7.50	1.16	532099.83	1711031.85	N 39 57 22.85 W	80 31 50.92	5.48
	7238.00	87.08	140.19	6558.38	5407.63	828.22	297.99	1336.50	6.43	6.29	1.36	532065.52	1711060.76	N 39 57 22.52 W	80 31 50.55	5.50
	7282.00	88.28	142.25	6562.03	5411.27	916.49	227.90	1392.82	2.65	1.33	2.29	531995.43	1711117.08	N 39 57 22.83 W	80 31 49.81	5.54
	7327.00	88.87	142.12	6563.13	5412.37	959.52	193.15	1419.79	1.37	1.34	-0.30	531960.68	1711144.04	N 39 57 21.49 W	80 31 49.46	5.55
	7419.00	89.51	141.26	6563.79	5413.03	1005.57	156.27	1448.92	2.28	1.36	-1.83	531923.81	1711173.17	N 39 57 21.13 W	80 31 49.08	5.57
	7509.00	88.74	140.10	6565.16	5414.40	1094.06	86.66	1505.94	1.55	-0.86	-1.29	531854.19	1711230.19	N 39 57 20.45 W	80 31 48.34	5.59
	7599.00	88.34	141.03	6567.46	5416.70	1182.57	17.17	1563.09	1.12	-0.44	1.03	531784.71	1711287.34	N 39 57 19.77 W	80 31 47.60	5.62
	7688.00	87.97	141.63	6570.32	5419.56	1269.85	-52.28	1618.67	0.79	-0.42	0.67	531715.26	1711342.92	N 39 57 19.09 W	80 31 46.87	5.64
	7778.00	88.17	142.20	6573.35	5422.59	1357.93	-123.08	1674.15	0.67	0.22	0.63	531644.47	1711398.40	N 39 57 18.39 W	80 31 46.15	5.67
	7867.00	88.20	143.09	6576.17	5425.41	1444.80	-193.79	1728.13	1.00	0.03	1.00	531573.76	1711452.37	N 39 57 17.70 W	80 31 45.45	5.69
	7957.00	88.45	144.69	6578.80	5428.04	1532.21	-266.47	1781.14	1.80	0.28	1.78	531501.09	1711505.38	N 39 57 16.99 W	80 31 44.75	5.72
	8046.00	88.48	145.40	6581.19	5430.43	1618.21	-339.38	1832.11	0.80	0.03	0.80	531428.17	1711556.35	N 39 57 16.27 W	80 31 44.09	5.74
	8136.00	89.20	146.58	6583.01	5432.25	1704.80	-413.97	1882.44	1.54	0.80	1.31	531353.59	1711606.68	N 39 57 15.54 W	80 31 43.43	5.76
	8225.00	89.48	146.70	6584.03	5433.27	1790.16	-488.30	1931.38	0.34	0.31	0.13	531279.26	1711655.61	N 39 57 14.81 W	80 31 42.79	5.78
	8315.00	89.60	146.60	6584.76	5434.02	1876.48	-563.48	1980.86	0.17	0.13	-0.11	531204.09	1711705.09	N 39 57 14.08 W	80 31 42.15	5.80
	8404.00	89.86	145.47	6585.18	5434.42	1962.11	-637.29	2030.58	1.30	0.29	-1.27	531130.28	1711754.81	N 39 57 13.35 W	80 31 41.50	5.82
	8494.00	89.91	143.65	6585.36	5434.60	2049.29	-710.61	2082.76	2.02	0.06	-2.02	531056.96	1711806.99	N 39 57 12.63 W	80 31 40.82	5.84
	8583.00	89.80	141.73	6585.58	5434.82	2136.19	-781.40	2136.71	2.16	-0.12	-2.16	530986.18	1711860.93	N 39 57 11.94 W	80 31 40.11	5.86
	8673.00	89.26	141.30	6586.32	5435.56	2224.44	-851.84	2192.71	0.77	-0.60	-0.48	530915.73	1711916.93	N 39 57 11.25 W	80 31 39.38	5.88
	8763.00	88.97	141.34	6587.71	5436.95	2312.74	-922.09	2248.95	0.33	-0.32	0.04	530845.49	1711973.17	N 39 57 10.56 W	80 31 38.65	5.90
	8853.00	89.06	140.99	6589.24	5438.48	2400.11	-991.41	2304.75	0.41	0.10	-0.39	530776.17	1712028.97	N 39 57 9.88 W	80 31 37.93	5.92
	8943.00	88.88	140.78	6590.86	5440.10	2488.54	-1061.23	2361.52	0.31	-0.20	-0.23	530706.36	1712085.74	N 39 57 9.20 W	80 31 37.19	5.93
	9034.00	88.91	141.57	6592.58	5441.82	2575.90	-1130.55	2417.31	0.89	0.03	0.89	530637.04	1712141.52	N 39 57 8.52 W	80 31 36.46	5.95

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Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	TVSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °'")	Longitude (E/W °'")	Directional Difficulty Index	
	9121.00	88.97	142.30	6594.24	5443.48	2664.00	-1201.40	2472.79	0.81	0.07	0.81	530566.20	1712197.00	N 39 57 7.83 W	80 31 35.74	5.97	
	9210.00	89.00	142.61	6595.82	5445.06	2750.97	-1271.95	2527.02	0.35	0.03	0.35	530495.64	1712251.22	N 39 57 7.14 W	80 31 35.03	5.98	
	9300.00	89.20	143.17	6597.23	5446.47	2838.76	-1343.72	2581.31	0.66	0.22	0.62	530423.88	1712305.52	N 39 57 6.43 W	80 31 34.32	6.00	
	9389.00	89.43	143.75	6598.29	5447.53	2925.39	-1415.22	2634.30	0.70	0.26	0.65	530352.39	1712358.50	N 39 57 5.73 W	80 31 33.63	6.01	
	9479.00	89.69	143.08	6598.99	5448.23	3013.01	-1487.48	2687.94	0.80	0.29	-0.74	530280.12	1712412.14	N 39 57 5.03 W	80 31 32.93	6.03	
	9568.00	89.60	141.92	6599.54	5448.78	3099.96	-1558.09	2742.11	1.31	-0.10	-1.30	530209.52	1712466.31	N 39 57 4.33 W	80 31 32.23	6.04	
	9658.00	89.00	140.61	6600.64	5449.88	3188.29	-1628.29	2798.42	1.60	-0.67	-1.46	530139.33	1712522.62	N 39 57 3.65 W	80 31 31.49	6.06	
	9747.00	88.86	141.05	6602.30	5451.54	3275.75	-1697.27	2854.63	0.52	-0.16	0.49	530070.34	1712578.82	N 39 57 2.97 W	80 31 30.76	6.07	
	9837.00	88.97	141.22	6604.00	5453.24	3364.10	-1767.34	2911.09	0.22	0.12	0.19	530000.28	1712635.28	N 39 57 2.29 W	80 31 30.03	6.09	
	9927.00	88.88	142.38	6605.69	5454.93	3452.25	-1838.05	2966.74	1.29	-0.10	1.29	529929.57	1712690.92	N 39 57 1.59 W	80 31 29.30	6.10	
	10016.00	88.65	143.02	6607.61	5456.85	3539.12	-1908.83	3020.66	0.76	-0.26	0.72	529858.80	1712744.84	N 39 57 0.90 W	80 31 28.60	6.12	
	10106.00	88.71	144.53	6609.68	5458.92	3626.59	-1981.41	3073.83	1.68	0.07	1.68	529786.22	1712798.01	N 39 57 0.19 W	80 31 27.91	6.13	
	10196.00	88.97	145.17	6611.51	5460.75	3713.65	-2054.98	3125.63	0.77	0.29	0.71	529712.65	1712849.81	N 39 56 59.47 W	80 31 27.23	6.15	
	10285.00	88.83	145.14	6613.21	5462.45	3799.62	-2128.01	3176.47	0.16	-0.16	-0.03	529639.62	1712900.65	N 39 56 58.75 W	80 31 26.57	6.16	
	10375.00	89.11	145.88	6614.83	5464.07	3886.42	-2202.18	3227.43	0.88	0.31	0.82	529565.46	1712951.60	N 39 56 58.02 W	80 31 25.90	6.17	
	10464.00	89.28	145.69	6616.08	5465.32	3972.14	-2275.77	3277.47	0.29	0.19	-0.21	529491.87	1713001.64	N 39 56 57.30 W	80 31 25.25	6.18	
	10554.00	89.60	144.72	6616.96	5466.20	4059.08	-2349.67	3328.82	1.13	0.36	-1.08	529417.97	1713052.99	N 39 56 56.58 W	80 31 24.58	6.20	
	10644.00	89.77	143.87	6617.46	5466.70	4146.37	-2422.76	3381.35	0.96	0.19	-0.94	529344.89	1713105.51	N 39 56 55.86 W	80 31 23.89	6.21	
	10733.00	89.91	143.50	6617.70	5466.94	4232.92	-2494.47	3434.05	0.44	0.16	-0.42	529273.18	1713158.22	N 39 56 55.16 W	80 31 23.21	6.22	
	10823.00	89.86	143.26	6617.89	5467.13	4320.55	-2566.70	3487.74	0.27	-0.06	-0.27	529200.95	1713211.90	N 39 56 54.45 W	80 31 22.51	6.23	
	10912.00	89.77	141.44	6618.17	5467.41	4407.56	-2637.17	3542.10	2.05	-0.10	-2.04	529130.49	1713266.26	N 39 56 53.76 W	80 31 21.80	6.25	
	11002.00	89.97	139.62	6618.38	5467.62	4496.10	-2706.64	3599.31	2.03	0.22	-2.02	529061.02	1713323.47	N 39 56 53.08 W	80 31 21.05	6.26	
	11091.00	89.26	137.92	6618.98	5468.22	4584.10	-2773.57	3657.96	2.07	-0.80	-1.91	528994.09	1713382.12	N 39 56 52.43 W	80 31 20.29	6.28	
	11181.00	88.28	138.05	6620.91	5470.15	4673.26	-2840.42	3718.19	1.10	-1.09	0.14	528927.25	1713442.34	N 39 56 51.77 W	80 31 19.51	6.29	
	11270.00	87.68	141.03	6624.04	5473.28	4761.01	-2908.09	3775.90	3.41	-0.67	3.35	528859.58	1713500.05	N 39 56 51.11 W	80 31 18.76	6.31	
	11360.00	87.25	143.30	6628.03	5477.27	4848.97	-2979.09	3831.05	2.56	-0.48	2.52	528788.58	1713555.19	N 39 56 50.41 W	80 31 18.04	6.32	
	11450.00	88.00	144.61	6631.76	5481.00	4936.32	-3051.80	3883.96	1.68	0.83	1.46	528715.88	1713608.10	N 39 56 49.70 W	80 31 17.35	6.33	
	11539.00	89.94	145.43	6633.36	5482.60	5022.34	-3124.70	3934.97	2.37	2.18	0.92	528642.98	1713659.11	N 39 56 48.99 W	80 31 16.68	6.35	
	11629.00	91.06	145.88	6632.57	5481.81	5109.09	-3199.01	3985.74	1.34	1.24	0.50	528568.67	1713709.88	N 39 56 48.26 W	80 31 16.02	6.36	
	11719.00	90.49	145.48	6631.35	5480.59	5195.82	-3273.33	4036.48	0.77	-0.63	-0.44	528494.35	1713760.62	N 39 56 47.53 W	80 31 15.36	6.37	
	11808.00	91.26	145.40	6629.99	5479.23	5281.69	-3346.62	4086.96	0.87	0.87	-0.09	528421.07	1713811.10	N 39 56 46.81 W	80 31 14.70	6.38	
	11897.00	91.23	144.50	6628.04	5477.28	5367.74	-3419.46	4138.06	1.01	0.00	-1.01	528348.23	1713862.19	N 39 56 46.10 W	80 31 14.03	6.39	
	11987.00	91.23	144.31	6626.08	5475.32	5454.97	-3492.63	4190.43	0.21	-0.03	-0.21	528275.07	1713914.56	N 39 56 45.38 W	80 31 13.35	6.40	
	12077.00	90.23	143.86	6624.93	5474.17	5542.34	-3565.51	4243.22	1.22	-1.11	-0.50	528202.19	1713967.35	N 39 56 44.67 W	80 31 12.66	6.41	
	12166.00	89.80	142.71	6624.91	5474.15	5629.03	-3636.85	4296.43	1.38	-0.48	-1.29	528130.85	1714020.55	N 39 56 43.97 W	80 31 11.97	6.43	
Final Survey	12223.00	89.57	142.10	6625.22	5474.46	5684.74	-3682.01	4331.20	1.14	-0.40	-1.07	528085.69	1714055.33	N 39 56 43.52 W	80 31 11.51	6.43	
28Apr13	12285.00	89.57	142.10	6625.69	5474.93	5745.41	-3730.94	4369.28	0.00	0.00	0.00	528036.77	1714093.41	N 39 56 43.05 W	80 31 11.02	6.44	
Projection to Bit																	
Survey Type:																	
Def Survey																	
Survey Error Model:																	
Survey Program:																	
ISCSWA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma																	
Description		MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Borehole / Survey										

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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
		0.000	19.290		Act Sins	30.000	30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / Noble Energy 12285' MD	SHL-8N-HS Gyro+MWD 0' MD to 12285' MD						
		19.290	1930.000		Act Sins	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Noble Energy	SHL-8N-HS Gyro+MWD 0' MD to						
		1930.000	5969.000		Act Sins	30.000	30.000	SLB_MWD-POOR	Original Borehole / Noble Energy	SHL-8N-HS Gyro+MWD 0' MD to						
		5969.000	12223.000		Act Sins	30.000	30.000	SLB_MWD-STD	Original Borehole / Noble Energy	SHL-8N-HS Gyro+MWD 0' MD to						
		12223.000	12285.000		Act Sins	30.000	30.000	SLB_BLIND+TREND	Original Borehole / Noble Energy	SHL-8N-HS Gyro+MWD 0' MD to						

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