Section 7
Appendices

Appendix 1. Historical wells in the Battersea area used by Rodvang *et al.* (1998, 2002).

Site	Well	Well type	Used in current transect study
LB1	LB1-1	Piezometer	
	LB1-2	Piezometer	
	LB1-3	Piezometer	
	LB1-4	Piezometer	
	LB1-5	Water table	
	LB1-6	Piezometer	
LB2	LB2-1	Water table	Yes – original (2009-2010)
	LB2-2	Piezometer	
	LB2-3	Piezometer	
	LB2-4	Piezometer	
	LB2-5	Piezometer	
LB3	LB3-1	Piezometer	
	LB3-2	Water table	
	LB3-3	Piezometer	
	LB3-4	Piezometer	
	LB3-5	Piezometer	
	LB3-6	Piezometer	
LB4	LB4-1	Piezometer	
	LB4-2	Water table	Yes - replaced
	LB4-3	Piezometer	
	LB4-4	Piezometer	Yes – replaced
	LB4-5	Piezometer	Yes – replaced
LB5	LB5-1	Piezometer	
	LB5-2	Water table	
	LB5-3	Piezometer	
	LB5-4	Piezometer	
	LB5-5	Piezometer	
	LB5-6	Piezometer	
LB6	LB6-1	Piezometer	
	LB6-2	Piezometer	
	LB6-3	Piezometer	
	LB6-4	Piezometer	
	LB6-5	Piezometer	
	LB6-6	Water table	Yes - replaced
LB6	LF1-1	Water table	
	LF1-2	Piezometer	
	LF1-3	Piezometer	
LB6	LF2-1	Water table	
	LF2-2	Piezometer	
	LF2-3	Piezometer	
LB6	LF3-1	Water table	
	LF3-2	Piezometer	
	LF3-3	Piezometer	
LB7	LB7-1	Piezometer	
	LB7-2	Water table	Yes - original
	LB7-3	Piezometer	
LB7	LB7-4	Piezometer	
	LB7-5	Piezometer	
	LB7-6	Piezometer	
	LB7-7	Piezometer	
LB8	LB8-1	Water table	
	LB8-2	Piezometer	
	LB8-3	Piezometer	
	LB8-4	Piezometer	
LB9	LB9-1	Piezometer	
	LB9-2	Water table	Yes - original
	LB9-3	Piezometer	
	LB9-4	Piezometer	
	LB9-5	Piezometer	
	LB9-6	Piezometer	
	LB9-7	Piezometer	
LB10	LB10-1	Piezometer	
	LB10-2	Piezometer	
	LB10-3	Piezometer	
	LB10-4	Water table	
LB10	LC1-1	Piezometer	
	LC1-2	Piezometer	
	LC1-3	Water table	
LB10	LC2-1	Water table	
	LC2-2	Piezometer	
	LC2-3	Piezometer	
LB10	LC3-1	Water table	
	LC3-2	Piezometer	
	LC3-3	Piezometer	
LB11	LB11-1	Piezometer	
	LB11-2	Piezometer	
	LB11-3	Piezometer	
	LB11-4	Water table	Yes - original
	LB11-5	Piezometer	
LB12	LB12-1	Piezometer	
	LB12-2	Water table	
	LB12-3	Piezometer	
LB13	LB13-1	Piezometer	Yes - original
	LB13-2	Piezometer	Yes - original
	LB13-3	Piezometer	Yes - original
	LB13-4	Water table	Yes - original
LB14	LB14-1	Piezometer	
	LB14-2	Water table	
	LB14-3	Piezometer	
LB15	LB15-1	Water table	
	LB15-2	Piezometer	
	LB15-3	Piezometer	

Site	Well	Well type	Used in current transect study
LB15	LB15-4	Piezometer	
LB16	LB16-1	Water table	
	LB16-2	Piezometer	
	LB16-3	Piezometer	
	LB16-4	Piezometer	
	LB16-5	Piezometer	
	LB16-6	Piezometer	
	LB16-7	Piezometer	
	LB16-8	Piezometer	
LB18	LB18-1	Water table	Yes - replaced
	LB18-2	Piezometer	
	LB18-3	Piezometer	
LB19	LB19-1	Piezometer	
	LB19-2	Water table	Yes - original
LB20	LB20-1	Piezometer	
	LB20-2	Water table	
LB21	LB21-1	Piezometer	Yes - original
	LB21-2	Water table	Yes - original
LB22	LB22-1	Piezometer	
	LB22-2	Piezometer	
	LB22-3	Water table	Yes - original
LB23	LB23-1	Piezometer	
	LB23-2	Water table	

Appendix 2. Groundwater well instrumentation description.

Groundwater well instrumentation used in the Regional Transect Study in the Battersea area.

Nest name	Well name	Installation date	Total well depth from TOC (m)	Casing height (m)	Screen length (m)	Sand pack length (m)	TOC elevation (m)	Ground elevation (m)	Top of screen elevation (m)	Bottom of screen elevation (m)	Well diameter (cm)
LB2	LB2-1	23-Sep-1993	6	0.28	4.4	5.50	948.07	947.79	946.47	942.07	3.81
LB4	LB4-2x	Feb/Mar 2010	3.08	0.18	2.5	2.60	894.51	894.33	893.93	891.43	5.08
LB4	LB4-4x	Feb/Mar 2010	16.26	0.26	1.0	2.20	894.58	894.31	879.31	878.31	5.08
LB4	LB4-5x	Feb/Mar 2010	8.96	0.36	1.0	1.40	894.60	894.23	886.63	885.63	5.08
LB6	LB6-6x	15-Dec-2010	4.38	0.38	3.0	3.20	870.85	870.47	869.47	866.47	5.08
LB6	LB6-7	15-Dec-2010	20.38	0.38	0.5	0.80	870.85	870.47	850.97	850.47	5.08
LB7	LB7-2	n/a[y]	2.4	0.11	2	2.07	866.37	866.26	865.97	863.97	3.81
LB9	LB9-2	24-Sep-1993	3.6	0.29	3.1	3.16	868.24	867.95	867.74	864.64	3.81
LB9	LB9-8	21-Dec-2010	20.44	0.44	0.5	0.80	868.38	867.94	848.44	847.94	5.08
LB11	LB11-4	Sept 1993	2.1	0.33	1.75	1.75	854.67	854.34	854.32	852.57	3.81
Field B	LB13-1[z]	April 1994	8.7	0.3	1.0	1.00	866.76	866.46	859.06	858.06	3.81
Field B	LB13-2[z]	April 1994	11.3	0.26	0.6	1.60	866.74	866.48	856.04	855.44	3.81
Field B	LB13-3[z]	15-Nov-1994	5	0.42	0.5	2.88	866.80	866.38	862.30	861.80	3.81
Field B	LB13-4[z]	15-Nov-1994	3	0.34	2.0	2.30	866.77	866.43	865.77	863.77	3.81
Field B	LB13-5[z]	Feb/Mar 2010	20.41	0.31	0.5	1.00	866.86	866.55	846.95	846.45	5.08
Field B	LB18-1x[z]	2-May-1994	3.34	0.34	2.5	2.50	867.59	867.25	866.75	864.25	5.08
Field B	LB18-4[z]	20-Dec-2010	10.33	0.33	0.5	0.80	867.52	867.19	857.69	857.19	5.08
Field B	LB18-5[z]	20-Dec-2010	20.40	0.40	0.5	0.80	867.54	867.14	847.64	847.14	5.08
LB19	LB19-2	n/a	7.5	0.25	6	6.70	859.71	859.46	858.21	852.21	5.08
LB19	LB19-3	15-Dec-2010	20.52	0.52	0.5	1.00	859.87	859.35	839.85	839.35	5.08
Field D	LB21-1[z]	n/a	19.2	0.26	1	7.15	862.37	862.11	844.17	843.17	5.08
Field D	LB21-2[z]	n/a	5.8	0.23	4.75	4.75	862.36	862.13	861.31	856.56	5.08
LB22	LB22-3	n/a	4.9	0.30	3.9	3.90	864.60	864.30	863.60	859.70	5.08

[z] Well is used in Regional Transect Study and Field-Scale Manure Spreading Study.
[y] n/a = not available.

Groundwater well instrumentation used in the Field-scale Manure Spreading Study in the Battersea area.

Site name	Well name	Installation date	Total well depth from TOC (m)	Casing height (m)	Screen length (m)	Sand pack length (m)	TOC elevation (m)	Ground elevation (m)	Top of screen elevation (m)	Bottom of screen elevation (m)	Well diameter (cm)
Field A	LB5a-1	Feb/Mar 2010	3.16	0.16	2.5	2.60	880.83	880.67	880.17	877.67	5.08
Field A	LB5a-2	Feb/Mar 2010	2.70	0.20	0.5	0.60	880.83	880.63	878.63	878.13	5.08
Field A	LB5a-3	Feb/Mar 2010	4.18	0.18	0.5	0.90	880.82	880.64	877.14	876.64	5.08
Field A	LB5a-4	Feb/Mar 2010	7.26	0.26	0.5	0.70	880.87	880.61	874.11	873.61	5.08
Field A	LB5a-5	Feb/Mar 2010	10.34	0.34	0.5	0.70	880.92	880.58	871.08	870.58	5.08
Field A	LB5a-6	Feb/Mar 2010	20.33	0.33	0.5	0.80	880.91	880.58	861.08	860.58	5.08
Field A	LB5b-1	28-Feb-2011	4.33	0.33	3.0	3.20	881.93	881.60	880.60	877.60	5.08
Field A	LB5c-1	2-Mar-2011	4.47	0.47	3.0	3.30	883.65	883.18	882.18	879.18	5.08
Field A	LB5c-2	3-Mar-2011	10.35	0.35	0.5	0.80	883.56	883.21	873.71	873.21	5.08
Field A	LB5d-1	3-Mar-2011	4.85	0.35	3.0	3.30	889.80	889.45	887.95	884.95	5.08
Field A	LB5e-1	28-Feb-2011	4.31	0.31	3.0	3.20	893.21	892.90	891.90	888.90	5.08
Field A	LB5e-2	28-Feb-2011	9.18	0.18	0.5	0.80	893.11	892.93	884.43	883.93	5.08
Field A	LB5f-1	28-Feb-2011	4.90	0.40	3.0	3.30	891.09	890.69	889.19	886.19	5.08
Field A	LB5f-2	28-Feb-2011	9.11	0.11	0.5	0.80	890.91	890.80	882.30	881.80	5.08
Field B	LB13-1	April 1994	8.7	0.3	1.0	1.00	866.76	866.46	859.06	858.06	3.81
Field B	LB13-2	April 1994	11.3	0.26	0.6	1.60	866.74	866.48	856.04	855.44	3.81
Field B	LB13-3	15-Nov-1994	5	0.42	0.5	2.88	866.80	866.38	862.30	861.80	3.81
Field B	LB13-4	15-Nov-1994	3	0.34	2.0	2.30	866.77	866.43	865.77	863.77	3.81
Field B	LB13-5	Feb/Mar 2010	20.41	0.31	0.5	1.00	866.86	866.55	846.95	846.45	5.08
Field B	LB13a-1	16-Mar-2011	n/a[z]	n/a	2.5	0.50	n/a	n/a	n/a	n/a	5.08
Field B	LB13b-1	11-Mar-2011	3.34	0.34	2.5	2.50	866.02	865.68	865.18	862.68	5.08
Field B	LB13c-1	11-Mar-2011	3.21	0.31	2.5	2.50	867.27	866.96	866.56	864.06	5.08
Field B	LB13c-2	11-Mar-2011	10.01	0.31	0.5	0.70	867.30	866.99	857.79	857.29	5.08
Field B	LB13d-1	16-Mar-2011	4.14	0.24	2.5	2.90	868.45	868.21	866.81	864.31	5.08
Field B	LB13d-2	16-Mar-2011	9.84	0.34	0.5	0.90	868.49	868.15	859.15	858.65	5.08
Field B	LB13e-1	16-Mar-2011	3.41	0.41	2.5	2.50	867.79	867.38	866.88	864.38	5.08
Field B	LB13f-1	14-Dec-2012	3.32	0.36	n/a	n/a	866.02	865.66	n/a	n/a	5.08
Field B	LB18-1x	2-May-1994	3.34	0.34	2.5	2.50	867.59	867.25	866.75	864.25	5.08
Field B	LB18-4	20-Dec-2010	10.33	0.33	0.5	0.80	867.52	867.19	857.69	857.19	5.08
Field B	LB18-5	20-Dec-2010	20.40	0.40	0.5	0.80	867.54	867.14	847.64	847.14	5.08

Groundwater well instrumentation used in the Field-scale Manure Spreading Study in the Battersea area (continued).

Site name	Well name	Installation date	Total well depth from TOC (m)	Casing height (m)	Screen length (m)	Sand pack length (m)	TOC elevation (m)	Ground elevation (m)	Top of screen elevation (m)	Bottom of screen elevation (m)	Well diameter (cm)
Field C	LB20-3	Dec 2010	6.36	0.36	5.0	5.20	862.89	862.53	861.53	856.53	5.08
Field C	LB20-4	Dec 2010	3.85	0.35	0.5	0.90	862.83	862.48	859.48	858.98	5.08
Field C	LB20-5	Dec 2010	5.78	0.28	0.5	0.90	862.83	862.55	857.55	857.05	5.08
Field C	LB20-6	Dec 2010	8.30	0.30	0.5	0.80	862.90	862.60	855.10	854.60	5.08
Field C	LB20-7	Dec 2010	20.84	0.14	0.5	1.10	862.85	862.71	842.51	842.01	5.08
Field C	LB20a-1	Feb/Mar 2010	6.32	0.32	5.0	5.20	857.33	857.01	856.01	851.01	5.08
Field C	LB20b-1	2-3-Mar-2011	4.87	0.37	3.0	3.30	864.53	864.16	862.66	859.66	5.08
Field C	LB20b-2	2-3-Mar-2011	10.05	0.35	0.5	0.70	864.58	864.23	855.03	854.53	5.08
Field C	LB20c-1	2-3-Mar-2011	5.04	0.44	3.0	2.10	861.11	860.67	859.07	856.07	5.08
Field C	LB20d-1	2-3-Mar-2011	4.89	0.49	3.0	3.20	859.24	858.75	857.35	854.35	5.08
Field C	LB20e-1	2-3-Mar-2011	5.30	0.30	3.0	3.40	858.78	858.48	856.48	853.48	5.08
Field C	LB20e-2	2-3-Mar-2011	9.96	0.26	0.5	0.70	858.8	858.54	849.34	848.84	5.08
Field D	LB21-1	n/a	19.2	0.26	1	7.15	862.37	862.11	844.17	843.17	5.08
Field D	LB21-2	n/a	5.8	0.23	4.75	4.75	862.36	862.13	861.31	856.56	5.08
Field D	LB21a-1	2-3-Mar-2011	5.07	0.27	3.0	3.60	862.13	861.86	860.06	857.06	5.08
Field D	LB21a-2	2-3-Mar-2011	9.80	0.30	0.5	0.70	862.19	861.89	852.89	852.39	5.08
Field D	LB21b-1	2-3-Mar-2011	5.17	0.37	3.0	2.20	863.01	862.64	860.84	857.84	5.08

[z] n/a = not available.

Groundwater well instrumentation used at the confined feeding operations.

Site name	Well name	Installation date	Total well depth from TOC (m)	Casing height (m)	Screen length (m)	Sand pack length (m)	TOC elevation (m)	Ground elevation (m)	Top of screen elevation (m)	Bottom of screen elevation (m)	Well diameter (cm)
CFO-1	D-P10-1[z]	Feb/Mar 2010	18.82	0.22	0.5	n/a[y]	868.06	867.84	849.74	849.24	5.08
CFO-1	D-P10-2	Feb/Mar 2010	8.40	0.40	1.5	1.80	868.27	867.87	861.37	859.87	5.08
CFO-1	D-MW1	Feb/Mar 2010	5.35	0.35	4.0	4.10	870.04	869.69	868.69	864.69	5.08
CFO-1	D-MW2	Feb/Mar 2010	6.35	0.37	4.0	4.50	867.52	867.15	865.17	861.17	5.08
CFO-1	D-MW3	Feb/Mar 2010	3.95	0.25	2.0	3.10	867.75	867.50	865.80	863.80	5.08
CFO-1	D-MW4[x]	Feb/Mar 2010	4.56	0.37	n/a	n/a	865.91	865.54	n/a	n/a	5.08
CFO-1	D-MW5	Feb/Mar 2010	6.89	0.09	4.0	4.30	866.51	866.42	863.62	859.62	5.08
CFO-1	D-MW6[x]	Feb/Mar 2010	7.19	0.46	n/a	n/a	865.41	864.95	n/a	n/a	5.08
CFO-1	D-MW10a	6-Jan-2011	7.60	0.40	3.0	3.70	868.42	868.02	863.82	860.82	5.08
CFO-1	D-P11-10b	6-Jan-2011	20.44	0.44	0.5	0.80	868.51	868.07	848.57	848.07	5.08
CFO-1	D-P11-10c	5-Jan-2011	34.37	0.37	0.5	0.90	868.50	868.13	834.63	834.13	5.08
CFO-1	D-P11-10d	9-Nov-2011	13.34	0.34	0.1	2.30	868.49	868.15	855.25	855.15	5.08
CFO-1	D-MW11a	4-Jan-2011	7.42	0.42	3.0	3.40	865.22	864.80	860.80	857.80	5.08
CFO-1	D-P11-11b	4-Jan-2011	20.45	0.45	0.5	0.80	865.20	864.75	845.25	844.75	5.08
CFO-1	D-MW12a	22-Feb-2011	7.30	0.30	3.0	3.30	867.94	867.64	863.64	860.64	5.08
CFO-1	D-P11-12b	22-Feb-2011	20.45	0.35	1.0	1.40	867.96	867.61	848.51	847.51	5.08
CFO-1	D-MW13a	8-Mar-2011	7.39	0.39	3.0	4.50	867.44	867.05	863.05	860.05	5.08
CFO-1	D-P11-13b	8-Mar-2011	20.46	0.46	0.5	0.80	867.52	867.06	847.56	847.06	5.08
CFO-1	D-P11-13c	9-Feb-2011	34.42	0.42	0.5	0.80	867.34	866.92	833.42	832.92	5.08
CFO-1	D-MW14a	10-Feb-2011	7.43	0.43	3.0	4.40	866.08	865.65	861.65	858.65	5.08
CFO-1	D-P11-14b	10-Feb-2011	20.46	0.46	0.5	0.80	866.11	865.65	846.15	845.65	5.08
CFO-1	D-P11-14c	10-Feb-2011	34.41	0.41	0.5	1.00	866.03	865.62	832.12	831.62	5.08
CFO-1	D-P11-14d	8-Nov-2011	1.70	0.39	0.1	n/a	866.05	865.66	864.45	864.35	5.08
CFO-1	D-P11-14e	8-Nov-2011	9.00	0.49	0.1	n/a	866.13	865.64	857.23	857.13	5.08
CFO-1	D-MW15a	6-Feb-2011	7.35	0.35	3.0	4.00	866.53	866.18	862.18	859.18	5.08
CFO-1	D-P11-15b	6-Feb-2011	20.31	0.31	0.5	0.80	866.42	866.11	846.61	846.11	5.08
CFO-1	D-P11-15c	11-Feb-2011	34.37	0.37	0.5	0.80	866.53	866.16	832.66	832.16	5.08

Groundwater well instrumentation used at the confined feeding operations (continued).

Site name	Well name	Installation date	Total well depth from TOC (m)	Casing height (m)	Screen length (m)	Sand pack length (m)	TOC elevation (m)	Ground elevation (m)	Top of screen elevation (m)	Bottom of screen elevation (m)	Well diameter (cm)
CFO-1	D-P11-15d	9-Nov-2011	13.01	0.41	0.1	0.60	866.49	866.08	853.58	853.48	5.08
CFO-1	D-MW16a	7-Jan-2011	6.40	0.40	3.0	3.30	866.43	866.03	863.03	860.03	5.08
CFO-1	D-P11-16b	7-Jan-2011	20.41	0.41	0.5	1.00	866.46	866.05	846.55	846.05	5.08
CFO-2	LB8a-1	Feb/Mar 2010	3.34	0.34	1.5	1.80	868.12	867.78	866.28	864.78	5.08
CFO-2	LB8a-2	Feb/Mar 2010	7.34	0.24	3.0	3.50	868.53	868.29	864.19	861.19	5.08
CFO-2	LB8a-3	Feb/Mar 2010	7.35	0.35	3.0	3.40	868.54	868.19	864.19	861.19	5.08
CFO-2	LB8a-4	Feb/Mar 2010	7.35	0.35	3.0	3.20	868.38	868.03	864.03	861.03	5.08
CFO-2	LB8a-5	8-Dec-2010	20.28	0.28	0.5	0.80	868.28	868.00	848.50	848.00	5.08
CFO-2	LB8a-6	8-Mar-2011	5.10	0.30	3.0	3.30	867.47	867.17	865.37	862.37	5.08
CFO-2	LB8a-7	8-Mar-2011	10.20	0.40	0.5	0.80	867.58	867.18	857.88	857.38	5.08
CFO-2	LB8a-8	7-Mar-2011	6.65	0.15	3.0	3.50	868.80	868.65	865.15	862.15	5.08
CFO-2	LB8a-9	7-Mar-2011	9.88	0.38	0.5	0.80	869.08	868.70	859.70	859.20	5.08
CFO-2	LB8a-10	7-Mar-2011	4.38	0.28	3.0	3.10	868.26	867.98	866.88	863.88	5.08
CFO-2	LB8a-12	7-Mar-2011	5.88	0.28	3.0	3.30	868.80	868.52	865.92	862.92	5.08
CFO-2	LB8a-13	7-Mar-2011	6.05	0.35	3.0	3.20	869.56	869.21	866.51	863.51	5.08
CFO-3	A-C1	18-19-Nov -2008	6.48	0.68	3.0	3.70	878.019	877.34	874.54	871.54	5.08
CFO-3	A-C2	19-Nov-2008	7.56	0.56	3.0	3.50	878.454	877.89	873.89	870.89	5.08
CFO-3	A-C3	19-20-Nov-2008	7.61	0.61	3.0	3.50	885.159	884.55	880.55	877.55	5.08
CFO-3	A-C4	20-Nov-2008	6.65	0.65	3.0	3.70	880.979	880.33	877.33	874.33	5.08
CFO-3	A-MW1	21-Nov-2006	9.65	0.90	3.15	3.75	879.415	878.51	872.91	869.76	5.08
CFO-3	A-MW2	21-Nov-2006	9.76	1.01	3.15	3.75	878.919	877.91	872.31	869.16	5.08
CFO-3	A-MW3	21-Nov-2006	9.66	1.01	3.05	3.65	878.605	877.6	872.00	868.95	5.08
CFO-3	A-P08-16	13-Nov-2008	16.73	0.93	1.5	1.90	879.069	878.14	863.84	862.34	3.81
CFO-3	A-P08-21	10-11-Nov-2008	21.80	1.10	1.5	2.80	879.31	878.21	859.01	857.51	3.81
CFO-4	B-C1	20-Nov-2008	7.57	0.67	3.1	3.40	857.662	856.99	853.19	850.09	5.08
CFO-4	B-C2	3-Dec-2008	7.58	0.63	3.1	3.50	860.031	859.4	855.55	852.45	5.08
CFO-4	B-C3	25-Nov-2008	7.48	0.68	3.1	3.40	859.266	858.59	854.89	851.79	5.08
CFO-4	B-C4	25-26-Nov-2008	6.59	0.69	3.0	3.50	859.499	858.81	855.91	852.91	5.08
CFO-4	B-MW1	20-Aug-2002	7.90	0.85	3.05	4.10	859.45	858.6	854.60	851.55	5.08
CFO-4	B-MW3	20-Aug-2002	6.78	0.78	3.0	4.00	859.35	858.57	855.57	852.57	5.08
CFO-4	B-MW2a	Feb/Mar 2010	7.80	0.30	4.5	5.00	n/a	n/a	n/a	n/a	5.08

Groundwater well instrumentation used at the confined feeding operations (continued).

Site name	Well name	Installation date	Total well depth from TOC (m)	Casing height (m)	Screen length (m)	Sand pack length (m)	TOC elevation (m)	Ground elevation (m)	Top of screen elevation (m)	Bottom of screen elevation (m)	Well diameter (cm)
CFO-4	B-MW4a	Feb/Mar 2010	7.80	0.30	4.50	4.80	n/a	n/a	n/a	n/a	5.08
CFO-4	B-P10-21e	Feb/Mar 2010	20.80	0.30	1.50	1.80	n/a	n/a	n/a	n/a	5.08
CFO-4	B-P10-15e	Feb/Mar 2010	15.15	0.30	1.50	1.50	n/a	n/a	n/a	n/a	5.08
CFO-4	B-P10-20w	Feb/Mar 2010	20.30	0.30	1.50	2.00	n/a	n/a	n/a	n/a	5.08
CFO-4	B-P10-15w	Feb/Mar 2010	15.30	0.30	1.50	2.00	n/a	n/a	n/a	n/a	5.08
CFO-5	C-C1	2-Dec-2008	7.65	0.65	3.05	3.50	921.143	920.49	916.54	913.49	5.08
CFO-5	C-C2	2-Dec-2008	7.66	0.66	3.10	3.50	922.789	922.13	918.23	915.13	5.08
CFO-5	C-C3	2-3-Dec-2008	7.69	0.69	3.10	3.50	927.402	926.71	922.81	919.71	5.08
CFO-5	C-C4	3-Dec-2008	7.63	0.63	3.10	3.50	914.519	913.89	909.99	906.89	5.08
CFO-5	C-MW1	24-May-2007	8.18	0.93	3.15	4.85	924.337	923.41	919.31	916.16	5.08
CFO-5	C-MW2	24-May-2007	8.43	0.93	3.00	5.10	924.274	923.34	918.84	915.84	5.08
CFO-5	C-MW3	24-May-2007	8.24	0.99	3.15	4.85	924.113	923.12	919.02	915.87	5.08
CFO-5	C-P08-14	14-Nov-2008	15.33	0.93	1.50	2.00	924.405	923.47	910.57	909.07	3.81
CFO-5	C-P08-21	14-Nov-2008	22.05	0.95	1.50	2.00	924.40	923.45	903.85	902.35	3.81

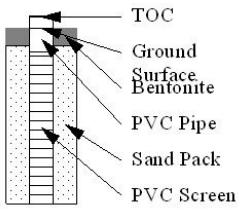
[z] Due to difficulties during drilling and monitoring well installation, the integrity of the bentonite seal and sand pack (slough) may be questionable.
[y] n/a = not available.
[x] Borehole not logged during drilling and instrumentation. The reported total well depth below ground surface was calculated by subtracting the casing height from the total well depth measured from the top of the casing.

Appendix 3. Borehole logs from groundwater instrumentation in 2010 and 2011.

Well	Page number	Well	Page number
LB4-2x	170	LB20-7	217
LB4-4x	171	LB20a-1	218
LB4-5x	172	LB20b-1	219
LB5a-1	173	LB20b-2	220
LB5a-2	174	LB20c-1	221
LB5a-3	175	LB20d-1	222
LB5a-4	176	LB20e-1	223
LB5a-5	177	LB20e-2	224
LB5a-6	178	LB21a-1	225
LB5b-1	179	LB21a-2	226
LB5c-1	180	LB21b-1	227
LB5c-2	181	D-MW1	228
LB5d-1	182	D-MW2	229
LB5e-1	183	D-MW3	230
LB5e-2	184	D-P10-1	231
LB5f-1	185	D-P10-2	232
LB5f-2	186	D-MW5	233
LB6-6x	187	D-MW10a	234
LB6-7	188	D-P11-10b	235
LB8a-1	189	D-P11-10c	236
LB8a-2	190	D-P11-10d	237
LB8a-3	191	D-MW11a	238
LB8a-4	192	D-P11-11b	239
LB8a-5	193	D-MW12a	240
LB8a-6	194	D-P11-12b	241
LB8a-7	195	D-MW13a	242
LB8a-8	196	D-P11-13b	243
LB8a-9	197	D-P11-13c	244
LB8a-10	198	D-MW14a	245
LB8a-11	199	D-P11-14b	246
LB8a-12	200	D-P11-14c	247
LB8a-13	201	D-MW15a	248
LB9-8	202	D-P11-15b	249
LB13-5	203	D-P11-15c	250
LB13b-1	204	D-P11-15d	251
LB13c-1	205	D-MW16a	252
LB13c-2	206	D-P11-16b	253
LB13d-2	207	B-MW2a	254
LB18-1x	208	B-MW4a	255
LB18-4	209	B-P10-15e	256
LB18-5	210	B-P10-21e	257
LB19-3	211	B-P10-15w	258
LB19-4	212	B-P10-20w	259
LB20-3	213		
LB20-4	214		
LB20-5	215		
LB20-6	216		

PROJECT:	**LMIGA**	WELL ID:	**LB4-2x**
TOTAL WELL DEPTH:	**3.08 m**		
TOTAL BOREHOLE DEPTH:	**2.9 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW13-11-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB4**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 22, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		TOPSOIL: clay-silty clay, frozen			
		CLAY TILL: moist			
		CLAY TILL: very moist to saturated, oxidized			
5					
10					



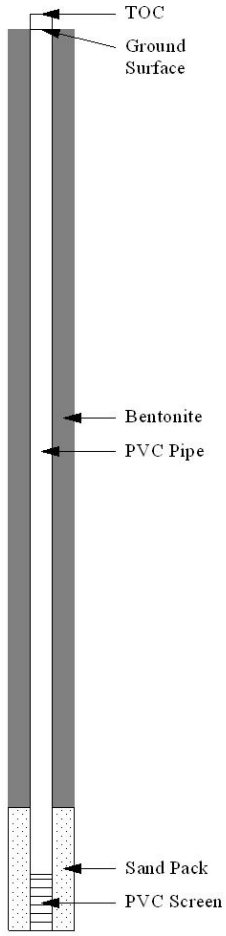
NOTES: Borehole not logged, lithology from LB4-4x

Page 1 of 1

NORTHING (m):	5529429.4	GROUND ELEVATION (masl):	894.25
EASTING (m):	374636.2	TOC ELEVATION (masl):	894.39

PROJECT:	LMIGA	WELL ID:	**LB4-4x**
TOTAL WELL DEPTH:	16.26 m		
TOTAL BOREHOLE DEPTH:	16.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW13-11-21-4	RIG TYPE:	C-72
SITE NAME:	LB4	METHOD OF DRILLING:	solid stem auger
DATES DRILLED:	February 22, 2010	SAMPLING METHODS:	disturbed

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		TOPSOIL: clay-silty clay, frozen			
		CLAY TILL: moist			
		CLAY TILL: very moist to saturated, oxidized	1.2-2.5		
			2.7-3.0		
		CLAY TILL: moist to very moist, oxidized, medium plastic			
		CLAY TILL: moist to very moist, medium to high plastic, oxidized	4.2-4.5		
5		CLAY TILL: moist, medium to high plastic, pebbles, coal chips			
			5.7-6.0		
			7.0-7.5		
			8.5-9.0		
		CLAY TILL: moist, yellow brown, stiff, medium to high plastic, pebbles, coal chips			
10			10.0-10.5		
		@ 10.7 m: saturated sand lenses			
			11.5-12.0		
		@ 12.5 m: high plastic clay layers			
			13.0-13.5		
			14.5-15.0		
15		SANDY CLAY LOAM: to SAND LOAM, very moist to saturated, sand layers			
20					



NOTES:

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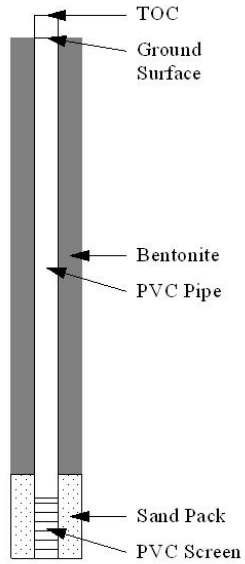
NORTHING (m):	5529435.0	GROUND ELEVATION (masl):	894.31
EASTING (m):	374635.3	TOC ELEVATION (masl):	894.58

PROJECT:	**LMIGA**	WELL ID:	**LB4-5x**
TOTAL WELL DEPTH:	**8.96 m**		
TOTAL BOREHOLE DEPTH:	**8.6 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW13-11-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB4**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 22, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		TOPSOIL: clay-silty clay, frozen			
		CLAY TILL: moist			
		CLAY TILL: very moist to saturated, oxidized			
		CLAY TILL: moist to very moist, oxidized, medium plastic			
		CLAY TILL: moist to very moist, medium to high plastic, oxidized			
5		CLAY TILL: moist, medium to high plastic, pebbles, coal chips			
10					



NOTES: Borehole not logged, lithology from LB4-4x

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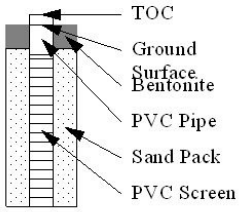
NORTHING (m):	5529432.3	GROUND ELEVATION (masl):	894.19
EASTING (m):	374635.5	TOC ELEVATION (masl):	894.45

PROJECT:	**LMIGA**	WELL ID:	**LB5a-1**
TOTAL WELL DEPTH:	**3.16 m**		
TOTAL BOREHOLE DEPTH:	**3 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-11-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 22, 2010**	SAMPLING METHODS:	**disturbed samples**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		TOPSOIL: clay loam, frozen, fill			
		CLAY LOAM: frozen, fill			
		CLAY LOAM: very moist, fill, soft, medium plastic	1.0-1.5		
		CLAY LOAM: very moist, lacustrine, soft, medium plastic	2.0-3.0		
		CLAY TILL: CLAY LOAM - CLAY, moist, stiff, medium plastic, pebbles, coal chips			
5					
10					



NOTES:

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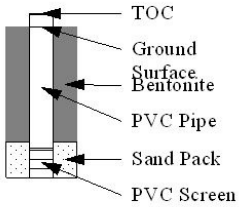
NORTHING (m):	5529193.2	GROUND ELEVATION (masl):	880.67
EASTING (m):	375428.3	TOC ELEVATION (masl):	880.83

PROJECT:	**LMIGA**	WELL ID:	**LB5a-2**
TOTAL WELL DEPTH:	**3.20 m**		
TOTAL BOREHOLE DEPTH:	**3.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-11-21-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 22, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, organics, rootlets			
		SILTY CLAY LOAM: very moist to saturated, lactustrine, yellow brown, firm, low to medium plastic, oxides along fractures, slight mottling			
		CLAY TILL: clay loam, very moist, brown, soft, medium plastic, pebbles, coal chips			
		CLAY TILL: clay loam, brown, firm to stiff, medium plastic, medium grained sand streaks, pebbles, coal chips, trace gravel.			
5					
10					



NOTES: Borehole not logged, lithology from LB5a-6

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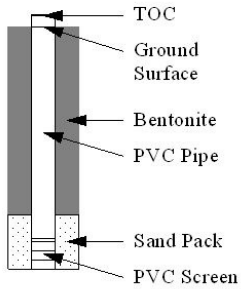
NORTHING (m):	5529191.8	GROUND ELEVATION (masl):	880.63
EASTING (m):	375428.2	TOC ELEVATION (masl):	880.83

PROJECT:	**LMIGA**	WELL ID:	**LB5a-3**
TOTAL WELL DEPTH:	**4.18 m**		
TOTAL BOREHOLE DEPTH:	**4.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-11-21-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 22, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, organics, rootlets			
		SILTY CLAY LOAM: very moist to saturated, lactustrine, yellow brown, firm, low to medium plastic, oxides along fractures, slight mottling			
		CLAY TILL: clay loam, very moist, brown, soft, medium plastic, pebbles, coal chips			
		CLAY TILL: clay loam, brown, firm to stiff, medium plastic, medium grained sand streaks, pebbles, coal chips, trace gravel.			
5		CLAY TILL: clay loam to clay, moist, olive, stiff, medium plastic, oxidized (yellow brown) zones, pebbles, coal chips, fine to medium grained sand streaks			
10					



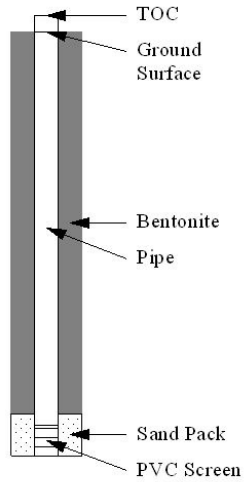
NOTES: Borehole not logged, lithology from LB5a-6

Page 1 of 1

NORTHING (m):	5529190.3	GROUND ELEVATION (masl):	880.64
EASTING (m):	375428.2	TOC ELEVATION (masl):	880.82

PROJECT:	LMIGA	WELL ID:	**LB5a-4**
TOTAL WELL DEPTH:	7.26 m		
TOTAL BOREHOLE DEPTH:	7.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NE-12-11-21-4	RIG TYPE:	C-1150
SITE NAME:	Field A	METHOD OF DRILLING:	solid stem auger
DATES DRILLED:	February 22, 2010	SAMPLING METHODS:	no sampling

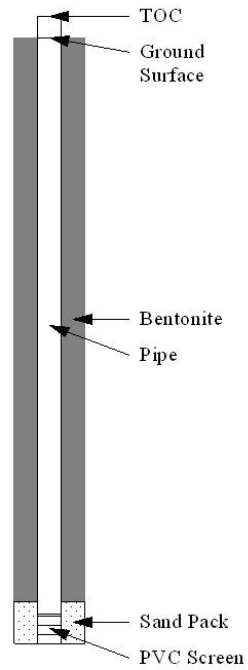
DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, organics, rootlets			
		SILTY CLAY LOAM: very moist to saturated, lactustrine, yellow brown, firm, low to medium plastic, oxides along fractures, slight mottling			
		CLAY TILL: clay loam, very moist, brown, soft, medium plastic, pebbles, coal chips			
		CLAY TILL: clay loam, brown, firm to stiff, medium plastic, medium grained sand streaks, pebbles, coal chips, trace gravel.			
5		CLAY TILL: clay loam to clay, moist, olive, stiff, medium plastic, oxidized (yellow brown) zones, pebbles, coal chips, fine to medium grained sand streaks			
		CLAY TILL: clay, moist, olive, stiff to hard, medium plastic, oxidized, pebbles, trace gravel, coal chips, fractured			
10					



NOTES:	Borehole not logged, lithology from LB5a-6		Page 1 of 1
NORTHING (m):	5529188.7	GROUND ELEVATION (masl):	880.61
EASTING (m):	375428.2	TOC ELEVATION (masl):	880.87

PROJECT:	**LMIGA**	WELL ID:	**LB5a-5**
TOTAL WELL DEPTH:	**10.34 m**		
TOTAL BOREHOLE DEPTH:	**10.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-11-21-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 22, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, organics, rootlets			
		SILTY CLAY LOAM: very moist to saturated, lactustrine, yellow brown, firm, low to medium plastic, oxides along fractures, slight mottling			
		CLAY TILL: clay loam, very moist, brown, soft, medium plastic, pebbles, coal chips			
		CLAY TILL: clay loam, brown, firm to stiff, medium plastic, medium grained sand streaks, pebbles, coal chips, trace gravel.			
5		CLAY TILL: clay loam to clay, moist, olive, stiff, medium plastic, oxidized (yellow brown) zones, pebbles, coal chips, fine to medium grained sand streaks			
		CLAY TILL: clay, moist, olive, stiff to hard, medium plastic, oxidized, pebbles, trace gravel, coal chips, fractured			
10		CLAY TILL: moist, olive brown, stiff to hard, medium plastic, heavily oxidized along fractures, coal chips, trace gravel			



NOTES: Borehole not logged, lithology from LB5a-6

Page 1 of 1

NORTHING (m):	5529187.3	GROUND ELEVATION (masl):	880.58
EASTING (m):	375428.3	TOC ELEVATION (masl):	880.92

PROJECT:	LMIGA	WELL ID:	**LB5a-6**
TOTAL WELL DEPTH:	20.33 m		
TOTAL BOREHOLE DEPTH:	20.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NE12-11-21-4	RIG TYPE:	C-1150
SITE NAME:	Field A	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	February 22, 2010	SAMPLING METHODS:	continuous coring

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, organics, rootlets	0.3-0.6	TOC; Ground Surface	
		SILTY CLAY LOAM: very moist to saturated, lactustrine, yellow brown, firm, low to medium plastic, oxides along fractures, slight mottling	0.9-1.2; 1.5-1.8		
		CLAY TILL: clay loam, very moist, brown, soft, medium plastic, pebbles, coal chips	2.1-2.4; 2.7-3.1		
		CLAY TILL: clay loam, brown, firm to stiff, medium plastic, medium grained sand streaks, pebbles, coal chips, trace gravel.	3.4-3.7; 4.0-4.3		
5		CLAY TILL: clay loam to clay, moist, olive, stiff, medium plastic, oxidized (yellow brown) zones, pebbles, coal chips, fine to medium grained sand streaks	4.6-4.9; 5.2-5.5		
		CLAY TILL: clay, moist, olive, stiff to hard, medium plastic, oxidized, pebbles, trace gravel, coal chips, fractured	5.8-6.1; 6.7-6.7; 7.0-7.3; 7.6-7.9; 8.2-8.5		
		CLAY TILL: moist, olive brown, stiff to hard, medium plastic, heavily oxidized along fractures, coal chips, trace gravel	8.8-9.1; 9.5-9.8	Bentonite; Pipe	
10		CLAY TILL: clay loam, very moist, olive brown, very firm, medium plasticity, some oxidation along fractures, coal chip, clay layers	10.1-10.4; 10.7-11.0		
		CLAY TILL: clay loam, sandy, moist, olive brown, very firm, medium plastic	11.3-11.6; 11.9-12.2		
		CLAY TILL: clay, moist, brown, stiff, medium plastic, trace sand, coal chips	12.5-12.8		
		CLAY TILL: clay loam, moist, brown, very firm, low to medium plasticity, coal ship, friable (fractured), some sand	13.1-13.4; 13.7-14.0		
15		CLAY TILL: clay, moist, olive brown, stiff, medium plasticity, pebbles, coal chips, oxidized along fractures	14.3-14.6; 14.9-15.2		
		CLAY TILL: clay, moist, olive brown, very firm, low to medium plasticity, friable (fractured), coal chips	15.6-15.9; 16.2-16.5		
		CLAY TILL: clay, moist, brown, stiff, low to medium plasticity, some sand, coal chips, fractures	16.8-17.1; 17.4-17.7; 18.0-18.3		
20				Sand Pack; PVC Screen	

NOTES: Borehole lithology missing from 18.6 m to 20.0 m

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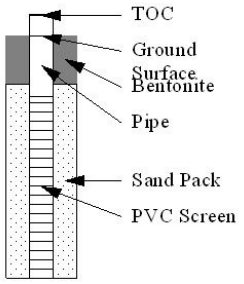
NORTHING (m):	5529185.8	GROUND ELEVATION (masl):	880.58
EASTING (m):	375428.3	TOC ELEVATION (masl):	880.91

PROJECT:	**LMIGA**	WELL ID:	**LB5b-1**
TOTAL WELL DEPTH:	**4.33 m**		
TOTAL BOREHOLE DEPTH:	**4.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY TILL: frozen, topsoil			
		CLAY TILL: moist, yellow brown, very firm, medium plasticity, pebbles, coal	1.0-1.5		
		CLAY TILL: very moist, yellow brown, soft, medium plasticity, pebbles, coal, saturated sand lenses	2.5-3.0		
		CLAY TILL: moist, yellow brown, very firm, medium plasticity, pebbles, coal	3.5-4.0		
5					
10					



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NORTHING (m):	5528797.00	GROUND ELEVATION (masl):	881.60
EASTING (m):	375427.70	TOC ELEVATION (masl):	881.93

PROJECT:	**LMIGA**	WELL ID:	**LB5c-1**
TOTAL WELL DEPTH:	**4.47 m**		
TOTAL BOREHOLE DEPTH:	**4.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, red shale inclusions		TOC, Ground Surface, Bentonite, Pipe	
		CLAY TILL: frozen			
		CLAY TILL: moist			
		CLAY TILL: very moist, yellow brown, very firm, low to medium plasticity, saturated, sand streaks, pebbles, coal		Sand Pack, PVC Screen	
		CLAY TILL: moist to very moist, yellow brown, very firm, medium plasticity, saturated, sand streaks between 3.0 and 4.5 m, pebbles, coal			
5					
10					

NOTES:	Borehole not logged, lithology from LB5c-2		Page 1 of 1
NORTHING (m):	5528421.9	GROUND ELEVATION (masl):	883.18
EASTING (m):	375412.4	TOC ELEVATION (masl):	883.65

PROJECT:	**LMIGA**	WELL ID:	**LB5c-2**
TOTAL WELL DEPTH:	**10.35 m**		
TOTAL BOREHOLE DEPTH:	**10.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill, red shale inclusions		TOC	
		CLAY TILL: frozen	0.5-0.9	Ground Surface	
		CLAY TILL: moist	1.0-1.5		
		CLAY TILL: very moist, yellow brown, very firm, low to medium plasticity, saturated, sand streaks, pebbles, coal	1.5-1.9		
			2.5-3.0		
		CLAY TILL: moist to very moist, yellow brown, very firm, medium plasticity, saturated, sand streaks between 3.0 and 4.5 m, pebbles, coal	4.0-4.5		
			4.5-4.9	Bentonite	
5				Pipe	
			5.5-6.0		
			7.0-7.5		
			8.5-9.0		
				Sand Pack	
10				PVC Screen	

NOTES:

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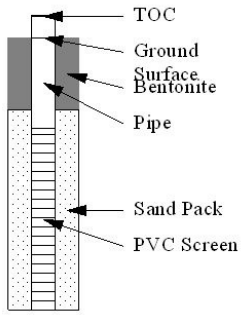
NORTHING (m):	5528420.8	GROUND ELEVATION (masl):	883.21
EASTING (m):	375412.5	TOC ELEVATION (masl):	883.56

PROJECT:	**LMIGA**	WELL ID:	**LB5d-1**
TOTAL WELL DEPTH:	**4.85 m**		
TOTAL BOREHOLE DEPTH:	**4.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SILTY CLAY: frozen, topsoil, lacustrine			
		SILTY CLAY: moist, lacustrine, olive brown, firm	1.0-1.5		
		SILTY CLAY: moist, lacustrine, olive brown, soft, medium plasticity			
		CLAY TILL: very moist, brown, firm, medium plasticity, pebbles, coal	2.5-3.0		
			4.0-4.5		
5					
10					



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NORTHING (m):	5528416.6	GROUND ELEVATION (masl):	889.45
EASTING (m):	375019.4	TOC ELEVATION (masl):	889.80

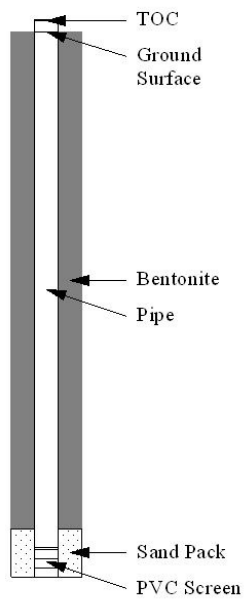
PROJECT:	**LMIGA**	WELL ID:	**LB5e-1**
TOTAL WELL DEPTH:	**4.31 m**		
TOTAL BOREHOLE DEPTH:	**4.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, topsoil		TOC; Ground Surface; Bentonite; Pipe; Sand Pack; PVC Screen	
		CLAY TILL: moist to very moist, yellow brown, firm, medium plasticity, pebbles, coal			
		SILTY CLAY LOAM: very moist to saturated, varved, soft, medium plasticity, yellow brown (appears to be lacustrine)			
		CLAY TILL: moist, stiff, medium plasticity, yellow brown, oxidized, pebbles, coal			
5					
10					

NOTES:	Borehole not logged, lithology from LB5e-2		Page 1 of 1
NORTHING (m):	5528427.1	GROUND ELEVATION (masl):	892.90
EASTING (m):	374642.0	TOC ELEVATION (masl):	893.21

PROJECT:	**LMIGA**	WELL ID:	**LB5e-2**
TOTAL WELL DEPTH:	**9.18 m**		
TOTAL BOREHOLE DEPTH:	**9.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**disturbed and Shelby tubes**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, topsoil			
		CLAY TILL: moist to very moist, yellow brown, firm, medium plasticity, pebbles, coal	0.5-0.9 1.0-1.5 1.5-1.9		
		SILTY CLAY LOAM: very moist to saturated, varved, soft, medium plasticity, yellow brown (appears to be lacustrine)	2.5-3.0		
		CLAY TILL: moist, stiff, medium plasticity, yellow brown, oxidized, pebbles, coal	4.0-4.5 4.5-4.9		
5			5.5-6.0		
		CLAY TILL: moist, stiff, medium plasticity, brown	7.0-7.5		
			8.5-9.0		
10					



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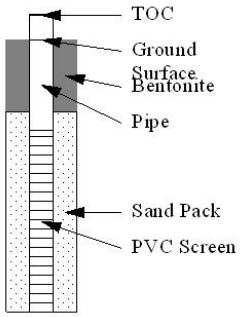
NORTHING (m):	5528426.9	GROUND ELEVATION (masl):	892.93
EASTING (m):	374640.6	TOC ELEVATION (masl):	893.11

PROJECT:	**LMIGA**	WELL ID:	**LB5f-1**
TOTAL WELL DEPTH:	**4.90 m**		
TOTAL BOREHOLE DEPTH:	**4.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, topsoil, till			
		CLAY TILL: moist to very moist, soft, medium plasticity			
		CLAY TILL: moist to very moist, till, soft to firm, medium plasticity			
		CLAY TILL: saturated, soft, sand lenses, low plasticity			
5					
10					



NOTES: Borehole not logged, lithology from LB5f-2

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NORTHING (m):	5529210.4	GROUND ELEVATION (masl):	890.69
EASTING (m):	374851.0	TOC ELEVATION (masl):	891.09

PROJECT:	**LMIGA**	WELL ID:	**LB5f-2**
TOTAL WELL DEPTH:	**9.11 m**		
TOTAL BOREHOLE DEPTH:	**9.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-12-011-21-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field A**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 28, 2011**	SAMPLING METHODS:	**Shelby tube**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, topsoil, till		TOC	
		CLAY TILL: moist to very moist, soft, medium plasticity	0.5-0.9	Ground Surface	
		CLAY TILL: moist to very moist, till, soft to firm, medium plasticity	1.5-1.9		
		CLAY TILL: saturated, soft, sand lenses, low plasticity	4.5-4.9	Bentonite Pipe	
5		CLAY TILL: moist, stiff, medium plasticity, yellow brown, pebbles, coal			
				Sand Pack PVC Screen	
10					

NOTES:

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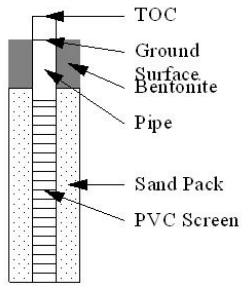
NORTHING (m):	5529210.4	GROUND ELEVATION (masl):	890.80
EASTING (m):	374849.3	TOC ELEVATION (masl):	890.91

PROJECT:	**LMIGA**	WELL ID:	**LB6-6x**
TOTAL WELL DEPTH:	**4.38 m**		
TOTAL BOREHOLE DEPTH:	**4.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-7-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB6**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**December 15, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, lacustrine, dark brown, topsoil		TOC, Ground Surface, Bentonite, Pipe, Sand Pack, PVC Screen	
		SANDY LOAM: fine grained, moist, lacustrine, yellow brown			
		SANDY LOAM: moist, lacustrine, yellow brown to olive brown			
		SAND: fine grained, moist, lacustrine, yellow brown			
		SAND: fine grained, saturated, lacustrine, yellow brown			
5		SILTY CLAY LOAM: very moist, lacustrine, yellow brown, soft, medium plasticity, some very fine grained sand			
		SILTY CLAY LOAM: moist to very moist, yellow brown, soft, medium plastic, some very fine grained sand, lacustrine, high plasticity clay layers			
10					



NOTES: Borehole not logged, lithology from LB6-7

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NORTHING (m):	5528689.7	GROUND ELEVATION (masl):	870.47
EASTING (m):	377062.3	TOC ELEVATION (masl):	870.85

PROJECT:	LMIGA	WELL ID:	**LB6-7**
TOTAL WELL DEPTH:	20.38 m		
TOTAL BOREHOLE DEPTH:	20.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NE-7-11-20-4	RIG TYPE:	C-72
SITE NAME:	LB6	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	December 15, 2010	SAMPLING METHODS:	continuous sampling

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, lacustrine, dark brown, topsoil	0.6	TOC; Ground Surface	
		SANDY LOAM: fine grained, moist, lacustrine, yellow brown	1.2, 1.8		
		SANDY LOAM: moist, lacustrine, yellow brown to olive brown	2.4		
		SAND: fine grained, moist, lacustrine, yellow brown	3.0, 3.7		
		SAND: fine grained, saturated, lacustrine, yellow brown	4.3		
5		SILTY CLAY LOAM: very moist, lacustrine, yellow brown, soft, medium plasticity, some very fine grained sand	4.9, 5.5		
		SILTY CLAY LOAM: moist to very moist, yellow brown, soft, medium plastic, some very fine grained sand, lacustrine, high plasticity clay layers	6.1, 6.7, 7.3		
		CLAY: moist, lacustrine, brown, stiff, medium to high plasticity, silt lensing, iron staining	7.9, 8.5		
		CLAY TILL: moist, brown, stiff, medium plasticity, fine grained sand lenses, coal, pebbles, iron staining along fractures	9.1	Bentonite	
10		CLAY TILL: moist, brown, stiff, medium plasticity, fine grained sand lenses, coal, pebbles, iron stains @ 10.7m saturated sand lens	9.8, 10.4, 11.0	Pipe	
		CLAY TILL: moist, brown to dark brown, stiff, medium plasticity, sand lenses, coal pebbles	11.6		
		CLAY TILL: moist, brown to dark brown, stiff, medium plasticity, coal pebbles, some medium grained sand	12.2, 12.8, 13.4		
15		CLAY TILL: moist, dark brown, stiff, medium plasticity, coal chips, pebbles	14.0, 14.6, 15.2, 15.9, 16.5, 17.1		
		CLAY TILL: moist, grey, stiff, medium to high plasticiy, pebbles	17.7, 18.3, 18.9, 19.5	Peltonite; Sand Pack; PVC Screen	
20					

NOTES:

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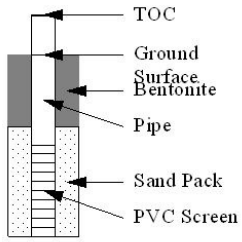
NORTHING (m):	5528687.9	GROUND ELEVATION (masl):	870.47
EASTING (m):	377062.3	TOC ELEVATION (masl):	870.85

PROJECT:	**LMIGA**	WELL ID:	**LB8a-1**
TOTAL WELL DEPTH:	**6.34 m**		
TOTAL BOREHOLE DEPTH:	**6.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW-10-11-20-4**	RIG TYPE:	**C-1150**
SITE NAME:	**CFO Facility 2**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 23, 2010**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		TOPSOIL: clay loam, frozen, lacustrine			
		CLAY LOAM: very moist, lacustrine, soft	1-1.5		
		LOAM: to CLAY LOAM, saturated, lacustrine, soft			
		CLAY: to SILTY CLAY, moist, lacustrine, stiff, medium to high plasticity, gypsum salts	2.5-3		
			4-4.5		
5			5.5-6		
10					



NOTES:	Well installed to 3.0 m		
NORTHING (m):	5527537.0	GROUND ELEVATION (masl):	867.78
EASTING (m):	380396.6	TOC ELEVATION (masl):	868.12

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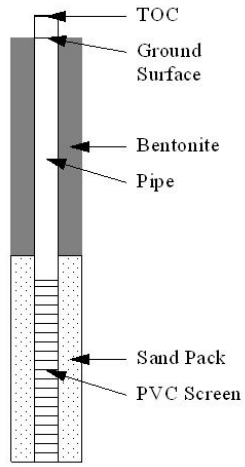
PROJECT:	LMIGA	WELL ID:	**LB8a-2**
TOTAL WELL DEPTH:	7.34		
TOTAL BOREHOLE DEPTH:	7.1 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-1150
SITE NAME:	CFO Facility 2	METHOD OF DRILLING:	solid stem auger
DATES DRILLED:	February 23, 2010	SAMPLING METHODS:	no sampling

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill		TOC	
		LOAM: to CLAY LOAM, moist, topsoil		Ground Surface	
		CLAY LOAM: moist, lacustrine		Bentonite	
		CLAY LOAM: very moist, lacustrine, soft, some very fine grained sand		Pipe	
		CLAY LOAM: to CLAY, moist, lacustrine			
		SANDY CLAY LOAM: very fine grained sand, very moist to saturated, lacustrine, silty, soft			
5		SILTY CLAY LOAM: very moist to saturated, lacustrine, soft, some very fine grained sand		Sand Pack	
				PVC Screen	
		CLAY: moist, lacustrine, stiff, high plasticity, grey			
10					

NOTES:	Borehole not logged		Page 1 of 1
NORTHING (m):	5527498.7	GROUND ELEVATION (masl):	868.29
EASTING (m):	380414.9	TOC ELEVATION (masl):	868.53

PROJECT:	**LMIGA**	WELL ID:	**LB8a-3**
TOTAL WELL DEPTH:	**7.35 m**		
TOTAL BOREHOLE DEPTH:	**7.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW-10-11-20-4**	RIG TYPE:	**C-1150**
SITE NAME:	**CFO Facility 2**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 23, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0					
5					
10					



NOTES: Borehole not logged

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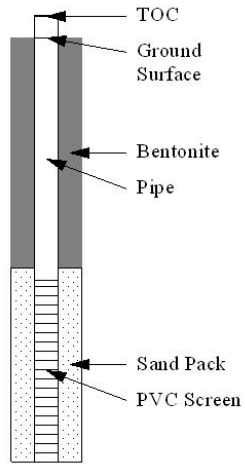
NORTHING (m):	5527498.8	GROUND ELEVATION (masl):	868.19
EASTING (m):	380427.8	TOC ELEVATION (masl):	868.54

PROJECT:	LMIGA	WELL ID:	**LB8a-4**
TOTAL WELL DEPTH:	7.35 m		
TOTAL BOREHOLE DEPTH:	7.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-1150
SITE NAME:	CFO Facility 2	METHOD OF DRILLING:	solid stem auger
DATES DRILLED:	February 23, 2010	SAMPLING METHODS:	disturbed

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill			
		LOAM: to CLAY LOAM, moist, topsoil			
		CLAY LOAM: moist, lacustrine	1.2-1.5 1.5-1.8		
		CLAY LOAM: very moist, lacustrine, soft, some very fine grained sand			
		CLAY LOAM: to CLAY, moist, lacustrine	2.5-3.0		
		SANDY CLAY LOAM: very fine grained sand, very moist to saturated, lacustrine, silty, soft	4.0-4.5		
5		SILTY CLAY LOAM: very moist to saturated, lacustrine, soft, some very fine grained sand	4.5-6.0		
		CLAY: moist, lacustrine, stiff, high plasticity, grey	6.6-7.0		
10					



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NORTHING (m):	5527499.0	GROUND ELEVATION (masl):	868.03
EASTING (m):	380476.8	TOC ELEVATION (masl):	868.38

PROJECT:	LMIGA	WELL ID:	**LB8a-5**
TOTAL WELL DEPTH:	20.28 m		
TOTAL BOREHOLE DEPTH:	20.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 2	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	December 8, 2010	SAMPLING METHODS:	continuous sampling

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, fill	0.6	TOC; Ground Surface	
		LOAM: moist, lacustrine, topsoil, black organics	1.2		
		SANDY CLAY LOAM: fine grained, moist, lacustrine, olive brown, firm	1.8		
		SANDY LOAM: to SANDY CLAY LOAM, very moist to saturated, lacustrine, olive brown, soft	2.4		
		SILTY CLAY LOAM: to CLAY LOAM, very moist, lacustrine, yellow brown, firm, some fine grained sand, clay lenses	3.0		
		CLAY LOAM: to SANDY CLAY LOAM, very moist, lacustrine, yellow brown, firm, clay lensing	3.7		
5		SILTY CLAY LOAM: moist, lacustrine, yellow brown, firm	4.3		
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, very moist, lacustrine, yellow brown, firm	4.9		
		SILTY LOAM: to SANDY LOAM, saturated, lacustrine, yellow brown, very soft, free water	5.5		
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, very firm, fine grained sand layering	6.1		
		CLAY LOAM: to SANDY CLAY LOAM, moist, lacustrine, olive brown, very firm, very fine sand lensing, CLAY layers	6.7		
		CLAY LOAM: moist, lacustrine, grey, very firm to stiff, some very fine grained sand	7.3		
		CLAY: moist, lacustrine, grey, stiff, medium to high plasticity	7.9		
		SILTY CLAY: moist, lacustrined, grey, stiff, medium plasticity	8.5		
		CLAY: to CLAY LOAM, moist, till, grey, stiff, medium plasticity, pebbles	9.1		
		CLAY TILL: very moist, grey, very firm, medium plasticity, pebbles	9.8	Bentonite; Pipe	
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles	10.4		
		CLAY TILL: very stiff, high plasticity, grey, saturated medium grained sand lenses	11.0		
			11.6		
			12.2		
			12.8		
			13.4		
			14.0		
			14.6		
			15.2		
			15.9		
			16.5		
			17.1		
			17.7		
			18.3		
			18.9		
			19.5	Sand Pack; PVC Screen	
20					

NOTES:

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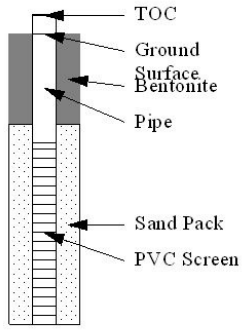
NORTHING (m):	5527498.0	GROUND ELEVATION (masl):	868.00
EASTING (m):	380485.5	TOC ELEVATION (masl):	868.28

PROJECT:	LMIGA	WELL ID:	**LB8a-6**
TOTAL WELL DEPTH:	5.10 m		
TOTAL BOREHOLE DEPTH:	4.8 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 2	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	March 8, 2011	SAMPLING METHODS:	no sampling

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY CLAY LOAM: fine grained, lacustrine, frozen, topsoil		TOC, Ground Surface, Bentonite, Pipe	
		SANDY CLAY LOAM: lacustrine, frozen, yellow brown			
		SILTY CLAY LOAM: lacustrine, saturated, yellow brown, very soft			
		SANDY LOAM: fine grained, lacustrine, yellow brown,		Sand Pack, PVC Screen	
		SILTY CLAY: lacustrine, moist, yellow brown, stiff, medium plasticity, layered with high plasticity CLAY and SILTY CLAY			
5		SILTY CLAY LOAM: very moist to saturated, lacustrine, olive brown, medium plasticity, very soft, oxidized along fractures			
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, saturated, lacustrine, light brown, low plasticity, very soft			
10					



NOTES: Borehole not logged, lithology from LB8a-7

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NORTHING (m):	5528047.8	GROUND ELEVATION (masl):	867.17
EASTING (m):	380352.3	TOC ELEVATION (masl):	867.47

PROJECT:	**LMIGA**	WELL ID:	**LB8a-7**
TOTAL WELL DEPTH:	**10.20 m**		
TOTAL BOREHOLE DEPTH:	**9.8 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW-10-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 2**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 8, 2011**	SAMPLING METHODS:	**disturbed and Shelby tube**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY CLAY LOAM: fine grained, lacustrine, frozen, topsoil		TOC; Ground Surface; Bentonite	
		SANDY CLAY LOAM: lacustrine, frozen, yellow brown	1.0-1.5; 1.5-1.9		
		SILTY CLAY LOAM: lacustrine, saturated, yellow brown, very soft	2.5-3.0		
		SANDY LOAM: fine grained, lacustrine, yellow brown,			
		SILTY CLAY: lacustrine, moist, yellow brown, stiff, medium plasticity, layered with high plasticity CLAY and SILTY CLAY	4.0-4.5	Slough; Pipe	
5		SILTY CLAY LOAM: very moist to saturated, lacustrine, olive brown, medium plasticity, very soft, oxidized along fractures	5.5-6.0		
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, saturated, lacustrine, light brown, low plasticity, very soft	7.0-7.5		
		CLAY LOAM: to SILTY CLAY LOAM, very moist, lacustrine, grey, medium plasticity, soft		Bentonite	
		@ 8.5 m: 200 mm high plasticity clay layer	8.5-9.0		
10				Sand Pack; PVC Screen	

NOTES:

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NORTHING (m):	5528049.8	GROUND ELEVATION (masl):	867.18
EASTING (m):	380352.3	TOC ELEVATION (masl):	867.58

PROJECT:	LMIGA	WELL ID:	**LB8a-8**
TOTAL WELL DEPTH:	6.65 m		
TOTAL BOREHOLE DEPTH:	6.5 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 2	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	March 7, 2011	SAMPLING METHODS:	no sampling

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, lacustrine, topsoil		TOC, Ground Surface	
		CLAY LOAM: frozen, lacustrine, brown			
		CLAY LOAM: to SILTY CLAY LOAM, moist, lacustrine, yellow brown, firm		Bentonite, Pipe	
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, firm, medium plasticity			
5				Sand Pack, PVC Screen	
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown			
10					

NOTES: Borehole not logged, lithology from LB8a-9

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NORTHING (m):	5527655.2	GROUND ELEVATION (masl):	868.65
EASTING (m):	380915.6	TOC ELEVATION (masl):	868.80

PROJECT:	LMIGA	WELL ID:	**LB8a-9**
TOTAL WELL DEPTH:	9.88 m		
TOTAL BOREHOLE DEPTH:	9.5 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 2	METHOD OF DRILLING:	solid stem auger
DATES DRILLED:	March 7, 2011	SAMPLING METHODS:	no sampling

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, lacustrine, topsoil		TOC	
		CLAY LOAM: frozen, lacustrine, brown		Ground Surface	
		CLAY LOAM: to SILTY CLAY LOAM, moist, lacustrine, yellow brown, firm			
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, firm, medium plasticity		Bentonite	
5				Pipe	
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown		Slough	
		SILTY CLAY LOAM: very moist, lacustrine, yellow brown, firm, low to medium plasticity, some sand, layered, varved		Bentonite	
		SILTY CLAY LOAM: layered with fine grained SANDY LOAM, saturated, yellow brown, firm, low plasticity		Sand Pack	
10				PVC Screen	

NOTES:

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NORTHING (m):	5527656.8	GROUND ELEVATION (masl):	868.70
EASTING (m):	380915.5	TOC ELEVATION (masl):	869.08

PROJECT:	**LMIGA**	WELL ID:	**LB8a-10**
TOTAL WELL DEPTH:	**4.38 m**		
TOTAL BOREHOLE DEPTH:	**4.1 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW-10-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 2**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 7, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: to SANDY CLAY LOAM, fine grained, lacustrine, topsoil		TOC; Ground Surface; Bentonite; Pipe	
		CLAY LOAM: to SANDY CLAY LOAM, fine grained, moist, lacustrine			
		SAND: fine grained, moist, lacustrine, yellow brown		Sand Pack	
		SAND: fine grained, saturated, lacustrine, yellow brown		PVC Screen	
5					
10					

NOTES: Borehole not logged, lithology from LB8a-11

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NORTHING (m):	5527709.9	GROUND ELEVATION (masl):	867.98
EASTING (m):	381123.4	TOC ELEVATION (masl):	868.26

PROJECT:	**LMIGA**	WELL ID:	**LB8a-11**
TOTAL WELL DEPTH:	**N/A**		
TOTAL BOREHOLE DEPTH:	**10.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW-10-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 2**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 7, 2011**	SAMPLING METHODS:	**disturbed and Shelby tube**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: to SANDY CLAY LOAM, fine grained, lacustrine, topsoil			
		CLAY LOAM: to SANDY CLAY LOAM, fine grained, moist, lacustrine	1.0-1.5		
			1.5-1.9		
		SAND: fine grained, moist, lacustrine, yellow brown			
			2.5-3.0		
		SAND: fine grained, saturated, lacustrine, yellow brown			
			4.0-4.5		
		SILTY CLAY: saturated, lacustrine, yellow brown, very soft, medium plasticity			
5		LOAMY SAND: fine grained, saturated, lacustrine, yellow brown			
			5.5-6.0		
			7.0-7.5		
			8.5-9.0		
		SILTY CLAY LOAM: moist, lacustrine, grey, medium plasticity, firm			
10		LOAMY SAND: fine grained, saturated, lacustrine, grey	10.0-10.5		

NOTES: No well installed, borehole only

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NORTHING (m): GROUND ELEVATION (masl):

EASTING (m): TOC ELEVATION (masl):

PROJECT:	LMIGA	WELL ID:	**LB8a-12**
TOTAL WELL DEPTH:	5.88 m		
TOTAL BOREHOLE DEPTH:	5.6 m	DRILLING CO.:	Chilako
SITE LOCATION:	SW-10-11-20-4	RIG TYPE:	C-72
SITE NAME:	LB8	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	March 7, 2011	SAMPLING METHODS:	disturbed

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen, lacustrine, topsoil		TOC, Ground Surface, Bentonite, Pipe, Sand Pack, PVC Screen	
		SANDY LOAM: fine grained, frozen, lacustrine, brown	1.0-1.5		
		SAND: fine grained, moist, lacustrine, reddish brown, oxidized	2.5-3.0		
		LOAMY SAND: saturated, lacustrine, light brownish grey, silt lenses			
		SILTY LOAM: saturated, lacustrine, light brownish grey, very soft, low plasticity, some fine grained sand	4.0-4.5		
5		LOAMY SAND: fine grained, saturated, lacustrine, light brownish grey, very soft, low plasticity	5.5-6.0		
		@ 5.0 m: 100 mm silty clay layer			
10					

NOTES:

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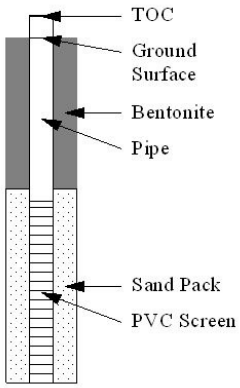
NORTHING (m):	5527561.6	GROUND ELEVATION (masl):	868.52
EASTING (m):	381119.8	TOC ELEVATION (masl):	868.80

PROJECT:	**LMIGA**	WELL ID:	**LB8a-13**
TOTAL WELL DEPTH:	**6.05 m**		
TOTAL BOREHOLE DEPTH:	**5.07 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW-10-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 2**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 7, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, lacustrine, topsoil			
		CLAY LOAM: frozen, lacustrine, brown	1.0-1.5		
		SILTY CLAY LOAM: moist, lacustrine, olive brown, firm, medium plasticity	2.5-3.0		
			4.0-4.5		
5		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown	5.5-6.0		
10					



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NORTHING (m):	5527496.4	GROUND ELEVATION (masl):	869.21
EASTING (m):	380913.4	TOC ELEVATION (masl):	869.56

PROJECT:	LMIGA	WELL ID:	**LB9-8**
TOTAL WELL DEPTH:	20.44 m		
TOTAL BOREHOLE DEPTH:	20.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NW-2-11-20-4	RIG TYPE:	C-72
SITE NAME:	LB9	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	December 21, 2010	SAMPLING METHODS:	continuous coring

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, dry, brown		TOC; Ground Surface	
		SANDY LOAM: fine grained, dry, dark brown, topsoil			
		LOAMY SAND: medium grained, moist, lacustrine, light brown			
		LOAMY SAND: medium grained, saturated, lacustrine, light brown			
		LOAMY SAND: fine grained, saturated, lacustrine, light brown		Bentonite	
5		SANDY LOAM: very fine grained, lacustrine, reddish brown, oxidized, layered, soft			
		LOAMY SAND: medium grained, saturated, lacustrine, reddish brown, oxidized			
		@ 7.2 m: coal seam			
		SANDY LOAM: very fine grained, saturated, lacustrine, light grey, silty and clay lenses, soft			
		LOAMY SAND: medium grained, lacustrine, grey, silty, soft			
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, very moist, lacustrine, grey, soft			
10		LOAMY SAND: fine grained, saturated, lacustrine, grey, 4.5 m water in hole		Pipe	
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, lacustrine, saturated, soft, silty, grey	11.0; 11.6		
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, lacustrine, moist to very moist, soft, silty, grey	12.2; 12.8	Slough	
		SANDY CLAY LOAM: to SILTY CLAY LOAM, very fine grained, lacustrine, moist, grey, soft, low plasticity	13.4; 14.0		
		@ 14.5 m to 15.0 m: medium to high plasticity clay layers	14.6		
15		SILTY CLAY LOAM: lacustrine, moist, grey, stiff, low plasticity	15.2		
		SILTY CLAY: lacustrine, moist, grey, stiff, medium plasticity, layered	15.9		
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles	16.5; 17.1; 17.7; 18.3; 18.9; 19.5	Bentonite; Peltonite; Sand Pack; PVC Screen	
20					

NOTES:

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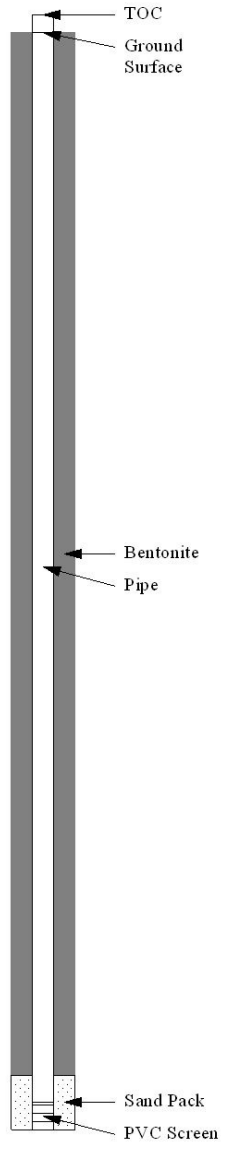
NORTHING (m):	5527467.5	GROUND ELEVATION (masl):	867.94
EASTING (m):	381963.5	TOC ELEVATION (masl):	868.38

PROJECT:	LMIGA	WELL ID:	**LB13-5**
TOTAL WELL DEPTH:	**20.41 m**		
TOTAL BOREHOLE DEPTH:	**20.1 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-2-11-20-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field B**	METHOD OF DRILLING:	**hollow stem**
DATES DRILLED:	**February 24, 2010**	SAMPLING METHODS:	**continuous core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE
0		SAND: fine grained, frozen, topsoil	0.3-0.6
		SAND: fine grained, slightly moist	0.9-1.2
		SAND: fine to medium grained, slightly moist	1.5-1.8
		SAND LOAM: very fine grained, saturated, lacustrine	2.2-2.5
		LOAMY SAND: very fine grained, saturated, lacustrine	2.8-3.1
			3.4-3.7
		LOAMY SAND: to SAND, fine grained	4.0-4.3
5		SILTY CLAY LOAM: to SILTY CLAY, moist, lacustrine, olive brown, stiff, medium to high plasticity, trace sand, oxidized along fractures	4.6-4.9
			5.2-5.5
		SILTY CLAY: moist, lacustrine, grey, stiff, medium plasticity, some very fine sand layers	5.9-6.2
			6.5-6.8
		SANDY CLAY LOAM: fine grained, moist to very moist, lacustrine, grey, stiff, medium plasticity	7.1-7.4
			7.7-8.0
		SILTY CLAY: to CLAY, moist to very moist, lacustrine, grey, stiff, high plasticity	8.3-8.6
		SANDY CLAY LOAM: very fine grained, moist to very moist, lacustrine, grey, stiff, medium plasticity	8.9-9.2
			9.5-9.8
10		SILTY CLAY: moist to very moist, lacustrine, grey, stiff, high plasticity	10.2-10.5
			10.8-11.1
		SANDY CLAY LOAM: moist to very moist, lacustrine, grey, stiff, medium to high plasticity	11.4-11.7
		SILTY CLAY: moist to very moist, lacustrine, grey, stiff, high plasticity	12.0-12.3
			12.6-12.9
		SILTY CLAY: saturated, lacustrine, grey, stiff, high plasticity	13.2-13.5
		SILTY CLAY: very moist, lacustrine, grey, very firm to stiff, high plasticity,	13.9-14.2
			14.5-14.8
15		SANDY CLAY LOAM: saturated, lacustrine, olive gray, very firm, medium to high plasticity	15.1-15.4
		SILTY CLAY: very moist, lacustrine, olive grey, stiff, medium to high plasticity,	15.7-16.0
			16.3-16.6
		SANDY CLAY LOAM: very moist, lacustrine, olive grey, very firm, medium plasticity,	16.9-17.2
			17.5-18.8
		SANDY CLAY LOAM: very fine grained, lacustrine, grey-olive grey, very firm to stiff, medium to high plasticity, a few pebbles, strong varving lenses	18.2-18.5
			18.8-19.1
20		CLAY TILL: moist, grey (basal till), stiff, medium to high plasticity, pebbles, sand lens at till contact (1 cm)	19.4-19.7



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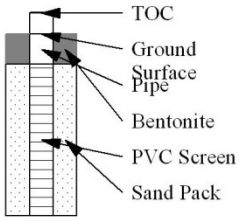
NORTHING (m):	5526722.0	GROUND ELEVATION (masl):	866.55
EASTING (m):	383554.4	TOC ELEVATION (masl):	866.86

PROJECT:	**LMIGA**	WELL ID:	**LB13b-1**
TOTAL WELL DEPTH:	**3.34 m**		
TOTAL BOREHOLE DEPTH:	**3.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field B**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 11, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen @ 0.4 m: topsoil layer			
		SANDY LOAM: fine grained, moist, lacustrine			
		SANDY LOAM: fine grained, saturated, lacustrine, light brownish grey	1.5-2.0		
		SANDY LOAM: fine grained, saturated, light grey, oxidized	2.5-3.0		
		SILTY CLAY LOAM: saturated, lacustrine, light grey, very soft			
5					
10					



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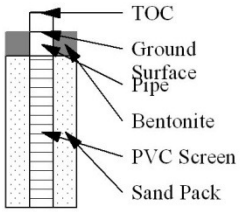
NORTHING (m):	5527048.8	GROUND ELEVATION (masl):	865.68
EASTING (m):	382756.5	TOC ELEVATION (masl):	866.02

PROJECT:	**LMIGA**	WELL ID:	**LB13c-1**
TOTAL WELL DEPTH:	**3.21 m**		
TOTAL BOREHOLE DEPTH:	**2.9 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field B**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 11, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained			
		SANDY LOAM: fine grained, dry			
		SANDY LOAM: fine grained, moist, lacustrine, yellow brown			
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, firm			
5					
10					



NOTES: Borehole not logged, lithology from LB13c-2

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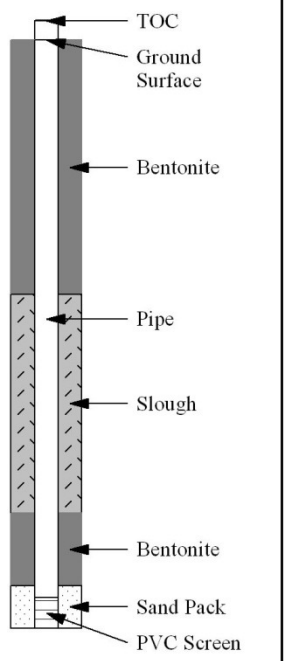
NORTHING (m):	5527421.3	GROUND ELEVATION (masl):	866.96
EASTING (m):	382763.9	TOC ELEVATION (masl):	867.27

PROJECT:	**LMIGA**	WELL ID:	**LB13c-2**
TOTAL WELL DEPTH:	**10.01 m**		
TOTAL BOREHOLE DEPTH:	**9.7 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field B**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 11, 2011**	SAMPLING METHODS:	**Shelby tube and disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained			
		SANDY LOAM: fine grained, dry	1.0-1.5		
		SANDY LOAM: fine grained, moist, lacustrine, yellow brown	1.5-1.9		
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, firm	2.5-3.0		
		SANDY CLAY LOAM: fine grained, saturated, olive brown	4.0-4.5		
5			4.5-4.9		
			5.5-6.0		
			6.0-6.4		
			7.0-7.5		
		SILTY CLAY LOAM: to SILTY CLAY, very moist, grey, medium to high plasticity, very firm	8.5-9.0		
10					



NOTES:

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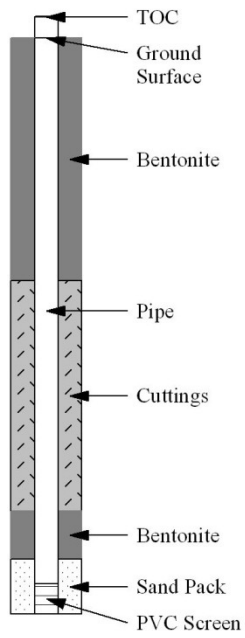
NORTHING (m):	5527422.8	GROUND ELEVATION (masl):	866.99
EASTING (m):	382764.0	TOC ELEVATION (masl):	867.30

PROJECT:	**LMIGA**	WELL ID:	**LB13d-2**
TOTAL WELL DEPTH:	**9.84 m**		
TOTAL BOREHOLE DEPTH:	**9.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field B**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 16, 2011**	SAMPLING METHODS:	**Shelby tube and disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, dry, topsoil			
		LOAMY SAND: dry, yellow brown	1.0-1.5		
		LOAMY SAND: medium grained, slightly moist, lacustrine, yellow brown	1.5-1.9		
			2.5-3.0		
		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown	4.0-4.5		
5		LOAMY SAND: fine grained, saturated, lacustrine, yellow brown	4.5-4.9		
			5.5-6.0		
		LOAMY SAND: saturated, lacustrine, yellow brown	7.0-7.5		
		SILTY CLAY LOAM: very moist, lacustrine, grey, firm, medium plasticity	8.5-9.0		
		SILTY CLAY: moist, lacustrine, grey, stiff, high plasticity			
10		SANDY LOAM: saturated, lacustrine, grey	10.0-10.5		



NOTES: Well installed to 9.5 m

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NORTHING (m):	5527425.5	GROUND ELEVATION (masl):	868.15
EASTING (m):	383567.0	TOC ELEVATION (masl):	868.49

PROJECT:	**LMIGA**	WELL ID:	**LB18-1x**
TOTAL WELL DEPTH:	**3.34 m**		
TOTAL BOREHOLE DEPTH:	**3.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB18 (Field B)**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**December 20, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: dry, brown		TOC, Ground Surface, Pipe, Bentonite, PVC Screen, Sand Pack	
		SANDY LOAM: dry, lacustrine, brown			
		SANDY LOAM: saturated, lacustrine, brown			
5					
10					

NOTES: Borehole not logged, lithology from LB18-5

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NORTHING (m):	5526816.9	GROUND ELEVATION (masl):	867.25
EASTING (m):	382755.4	TOC ELEVATION (masl):	867.59

PROJECT:	**LMIGA**	WELL ID:	**LB18-4**
TOTAL WELL DEPTH:	**10.33 m**		
TOTAL BOREHOLE DEPTH:	**10.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB18 (Field B)**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**December 20, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: dry, brown		TOC; Ground Surface	
		SANDY LOAM: dry, lacustrine, brown			
		SANDY LOAM: saturated, lacustrine, brown			
		SILTY CLAY LOAM: to SILTY CLAY, moist, lacustrine, yellow brown, stiff, medium plasticity		Bentonite	
		SANDY LOAM: to SANDY CLAY LOAM, fine grained, very moist, lacustrine, olive brown, firm, fine grained sand lenses (layered)		Pipe	
5		SILTY CLAY: moist, lacustrine, olive, stiff, medium plasticity, layered			
		SANDY CLAY LOAM: to SILTY CLAY LOAM, moist to very moist, lacustrine, firm, low plasticity, grey, layered			
		SANDY CLAY LOAM: to SILTY CLAY LOAM, very fine grained, lacustrine, grey, firm, low plasticity, layered, fine saturated SANDY LOAM layers		Peltonite	
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles		Sand Pack	
10		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles, sand and silt lenses throughout		PVC Screen	

NOTES: Borehole not logged, lithology from LB18-5

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NORTHING (m):	5526815.5	GROUND ELEVATION (masl):	867.19
EASTING (m):	382755.6	TOC ELEVATION (masl):	867.52

PROJECT:	**LMIGA**	WELL ID:	**LB18-5**
TOTAL WELL DEPTH:	**20.4 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-2-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB18 (Field B)**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**December 20, 2010**	SAMPLING METHODS:	**continuous core/Shelby tubes**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: dry, brown		TOC; Ground Surface	
		SANDY LOAM: dry, lacustrine, brown	1.5-1.9		
		SANDY LOAM: saturated, lacustrine, brown			
		SILTY CLAY LOAM: to SILTY CLAY, moist, lacustrine, yellow brown, stiff, medium plasticity			
		@ 3.3 m: CLAYEY SAND lenses			
		SANDY LOAM: to SANDY CLAY LOAM, fine grained, very moist, lacustrine, olive brown, firm, fine grained sand lenses (layered)	4.5-4.9		
5		SILTY CLAY: moist, lacustrine, olive, stiff, medium plasticity, layered			
		SANDY CLAY LOAM: to SILTY CLAY LOAM, moist to very moist, lacustrine, firm, low plasticity, grey, layered			
		SANDY CLAY LOAM: to SILTY CLAY LOAM, very fine grained, lacustrine, grey, firm, low plasticity, layered, fine saturated SANDY LOAM layers	7.5-7.9		
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles		Bentonite; Pipe	
10		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles, sand and silt lenses throughout			
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles			
		@ 11.8 m: free water in auger			
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles, saturated sand streaks			
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles			
15				Peltonite	
				Sand Pack	
20				PVC Screen	

NOTES:

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NORTHING (m): 5526814.2 GROUND ELEVATION (masl): 867.14

EASTING (m): 382755.7 TOC ELEVATION (masl): 867.54

PROJECT:	**LMIGA**	WELL ID:	**LB19-3**
TOTAL WELL DEPTH:	**20.52 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW 5-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB19**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**December 15, 2010**	SAMPLING METHODS:	**Continuous Sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		TOPSOIL: fine sandy loam, moist, brown		TOC; Ground Surface	
		SANDY LOAM: fine grained, slightly moist, brown			
		LOAMY SAND: fine grained, slightly moist, lacustrine, yellow brown			
		SAND: fine graned, slightly moist, lacustrine, yellow brown			
5		SAND: fine grained, slightly moist, lacustrine, gray brown			
		SAND: medium grained, saturated, lacustrine, gray brown, free water			
		SILTY CLAY: very moist, lacustrine, yellow brown, firm, low-medium plastic			
		SANDY LOAM: very fine to fine grained, saturated, lacustrine, olive, 60 cm water in auger			
		SANDY LOAM: very fine grained, saturated, lacustrine, gray, compact		Bentonite; PVC Pipe	
10		SANDY LOAM: very fine grained, silty, saturated, lacustrine, gray, compact			
		SILTY CLAY: very moist, lacustrine, gray, soft, low plastic			
		SANDY LOAM: very fine grained, saturated, lacustrine, gray, 40 cm water in auger			
15		CLAY TILL: moist, olive gray, stiff, medium-high plastic			
20				Sand Pack; PVC Screen	

NOTES:

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NORTHING (m): 5526185.59 GROUND ELEVATION (masl): 859.35

EASTING (m): 387147.33 TOC ELEVATION (masl): 859.87

PROJECT:	**LMIGA**	WELL ID:	**LB19-4**
TOTAL WELL DEPTH:	**9.8 m**		
TOTAL BOREHOLE DEPTH:	**9.2 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SW 5-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**LB19**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**November 7, 2011**	SAMPLING METHODS:	**continuous sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SAND LOAM: fine grained, moist, brown		TOC; Ground Surface	
		LOAMY SAND: to SANDY LOAM, fine grained, moist, brown			
		SANDY LOAM: fine grained, moist, yellow-brown		Bentonite; PVC Pipe	
5		LOAMY SAND: medium grained, moist, yellow-brown		Slough	
		SILTY CLAY LOAM: moist to very moist, lacustrine, yellow-brown, very firm		Bentonite	
		SANDY LOAM: very fine grained, saturated, lacustrine, olive brown-grey		Sand/Slough; PVC Screen	
10					

NOTES: 0.15 m sample collected every 0.3 m

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NORTHING (m): 5526184.3 GROUND ELEVATION (masl): 859.32

EASTING (m): 387146.3 TOC ELEVATION (masl): 859.92

PROJECT:	**LMIGA**	WELL ID:	**LB20-3**
TOTAL WELL DEPTH:	**6.36 m**		
TOTAL BOREHOLE DEPTH:	**6.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**solid stem**
DATES DRILLED:	**February 25, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: frozen, topsoil		TOC, Ground Surface, Bentonite, Pipe	
		SANDY LOAM: slightly moist			
		SANDY LOAM: moist, yellow brown			
		SANDY LOAM: moist		Sand Pack	
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown		PVC Screen	
5		SANDY LOAM: fine grained, saturated, lacustrine, olive brown, few pebbles			
		LOAMY SAND: fine grained, saturated, lacustrine, olive brown			
10					

NOTES:

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NORTHING (m):	5527361.0	GROUND ELEVATION (masl):	862.53
EASTING (m):	386815.7	TOC ELEVATION (masl):	862.89

PROJECT:	**LMIGA**	WELL ID:	**LB20-4**
TOTAL WELL DEPTH:	**3.85 m**		
TOTAL BOREHOLE DEPTH:	**3.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**solid stem**
DATES DRILLED:	**February 25, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, lacustrine		TOC; Ground Surface	
		SAND: and GRAVEL, dry, lacustrine/fluvial		Bentonite	
		SAND: medium grained, dry, lacustrine, brown		Pipe	
		SAND: medium to fine grained, slightly moist, lacustrine, brown			
		LOAMY SAND: very fine grained, saturated, lacustrine, brown		Sand Pack; PVC Screen	
		SILTY CLAY: moist, lacustrine, brown, stiff, medium plasticity			
5		SILTY CLAY: moist, lacustrine, grey, stiff, medium to high plasticity, silt lenses			
		CLAY: moist, lacustrine, grey, stiff, medium to high plasticity			
10					

NOTES: Borehole not logged, lithology from LB20-7

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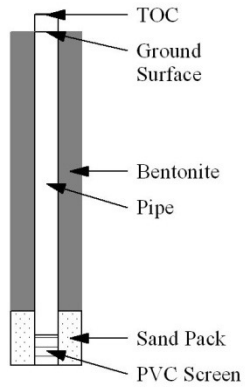
NORTHING (m):	5527361.0	GROUND ELEVATION (masl):	862.48
EASTING (m):	386809.7	TOC ELEVATION (masl):	862.83

PROJECT:	**LMIGA**	WELL ID:	**LB20-5**
TOTAL WELL DEPTH:	**5.78 m**		
TOTAL BOREHOLE DEPTH:	**5.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**solid stem**
DATES DRILLED:	**February 25, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, lacustrine			
		SAND: and GRAVEL, dry, lacustrine/fluvial			
		SAND: medium grained, dry, lacustrine, brown			
		SAND: medium to fine grained, slightly moist, lacustrine, brown			
		LOAMY SAND: very fine grained, saturated, lacustrine, brown			
		SILTY CLAY: moist, lacustrine, brown, stiff, medium plasticity			
5		SILTY CLAY: moist, lacustrine, grey, stiff, medium to high plasticity, silt lenses			
		CLAY: moist, lacustrine, grey, stiff, medium to high plasticity			
10					



NOTES: Borehole not logged, lithology from LB20-7

Page 1 of 1

NORTHING (m): 5527361.0 GROUND ELEVATION (masl): 862.55

EASTING (m): 386812.9 TOC ELEVATION (masl): 862.83

PROJECT:	**LMIGA**	WELL ID:	**LB20-6**
TOTAL WELL DEPTH:	**8.3 m**		
TOTAL BOREHOLE DEPTH:	**8.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**solid stem**
DATES DRILLED:	**February 25, 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, lacustrine		TOC; Ground Surface	
		SAND: and GRAVEL, dry, lacustrine/fluvial			
		SAND: medium grained, dry, lacustrine, brown			
		SAND: medium to fine grained, slightly moist, lacustrine, brown			
		LOAMY SAND: very fine grained, saturated, lacustrine, brown		Bentonite; Pipe	
		SILTY CLAY: moist, lacustrine, brown, stiff, medium plasticity			
5		SILTY CLAY: moist, lacustrine, grey, stiff, medium to high plasticity, silt lenses			
		CLAY: moist, lacustrine, grey, stiff, medium to high plasticity		Sand Pack; PVC Screen	
10					

NOTES: Borehole not logged, lithology from LB20-7

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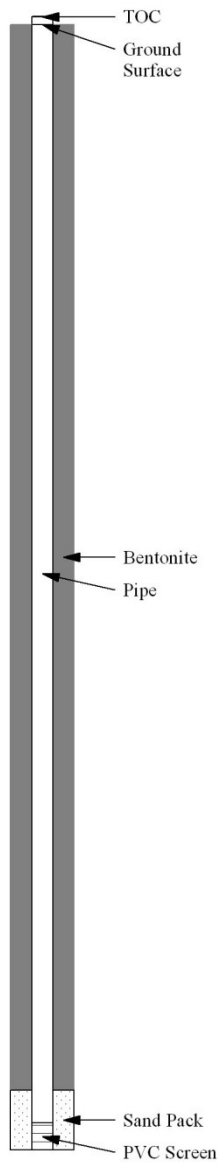
NORTHING (m):	5527361.0	GROUND ELEVATION (masl):	862.60
EASTING (m):	386818.3	TOC ELEVATION (masl):	862.90

PROJECT:	**LMIGA**	WELL ID:	**LB20-7**
TOTAL WELL DEPTH:	**20.84 m**		
TOTAL BOREHOLE DEPTH:	**20.7 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-1150**
SITE NAME:	**LB20**	METHOD OF DRILLING:	**hollow stem**
DATES DRILLED:	**February 25, 2010**	SAMPLING METHODS:	**continuous sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE
0		SANDY LOAM: fine grained, moist, lacustrine	0.9-1.2
		SAND: and GRAVEL, dry, lacustrine/fluvial	1.5-1.8
		SAND: medium grained, dry, lacustrine, brown	2.2-2.5
		SAND: medium to fine grained, slightly moist, lacustrine, brown	2.8-3.1
		LOAMY SAND: very fine grained, saturated, lacustrine, brown	3.4-3.7
		SILTY CLAY: moist, lacustrine, brown, stiff, medium plasticity	4.0-4.3
		SILTY CLAY: moist, lacustrine, grey, stiff, medium to high plasticity, silt lenses	4.6-4.9
5		CLAY: moist, lacustrine, grey, stiff, medium to high plasticity	5.2-5.5
			5.9-6.2
			6.5-6.8
			7.1-7.4
			7.7-8.0
			8.3-8.6
			8.9-9.2
			9.5-9.8
10			10.2-10.5
			10.8-11.1
			11.4-11.7
			12.0-12.3
			12.6-12.9
			13.2-13.5
		SILTY CLAY: moist to very moist, lacustrine, grey, stiff, medium to high plasticity, sand lenses	13.9-14.2
			14.5-14.8
15		SANDY CLAY LOAM: very fine grained, very moist, lacustrine, grey, low plasticity, firm to stiff	15.1-15.4
		SANDY CLAY LOAM: very fine grained, very moist, lacustine, grey, stiff, medium plasticity, sand lensing	15.7-16.0
			16.3-16.6
		SANDY CLAY LOAM: very fine grained, saturated, lacustrine, grey, firm to stiff, low plasticity, sand lenses	16.9-17.2
			17.5-18.8
		SILTY CLAY: moist, lacustrine, grey, very firm to stiff, medium to high plasticity	18.2-18.5
			18.8-19.1
			19.4-19.7
20		CLAY TILL: silty clay, moist, grey, medium plasiticity, pebbles	

WELL COMPLETION / WELL DESCRIPTION



NOTES:

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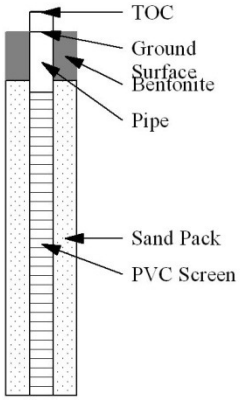
NORTHING (m): 5527361.0 GROUND ELEVATION (masl): 862.71

EASTING (m): 386820.5 TOC ELEVATION (masl): 862.85

PROJECT:	**LMIGA**	WELL ID:	**LB20a-1**
TOTAL WELL DEPTH:	**6.32 m**		
TOTAL BOREHOLE DEPTH:	**6.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-7-11-19-4**	RIG TYPE:	**C-1150**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**solid stem**
DATES DRILLED:	**February 25, 2010**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill			
		SILTY CLAY LOAM: moist, lacustrine	1.0-1.5		
		SILTY CLAY LOAM: to CLAY LOAM, very moist to saturated, lacustrine			
		SILTY CLAY: very moist, lacustrine, brown, stiff, medium to high plasticity	2.5-3.0		
		CLAY TILL: clay loam, moist, brown, stiff, medium plasticity, pebbles			
		CLAY TILL: moist, grey, stiff, medium to high plasticity, pebbles	4.0-4.5		
5		CLAY TILL: some silt, firm, high plasticity, no pebbles or coal chips	5.5-6.0		
10					



NOTES:

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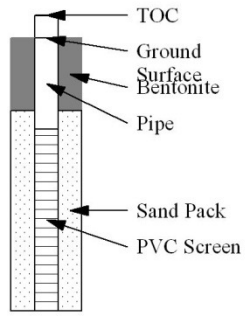
NORTHING (m):	5528214.7	GROUND ELEVATION (masl):	857.01
EASTING (m):	386055.7	TOC ELEVATION (masl):	857.33

PROJECT:	**LMIGA**	WELL ID:	**LB20b-1**
TOTAL WELL DEPTH:	**4.87 m**		
TOTAL BOREHOLE DEPTH:	**4.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: dry, yellow brown			
		SILTY LOAM: dry, lacustrine, yellow brown, firm, low plasticity			
		SANDY LOAM: very fine grained, moist, lacustrine, yellow brown			
		SANDY LOAM: very fine grained, moist, lacustrine, brown			
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown			
5					
10					



NOTES: Borehole not logged, lithology from LB20b-2

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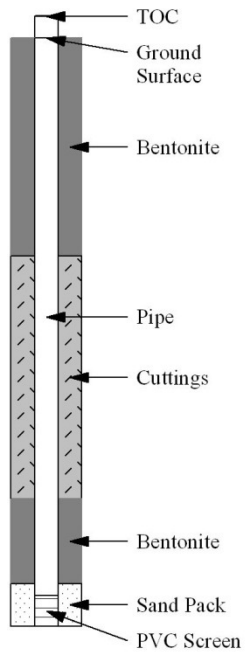
NORTHING (m):	5528148.2	GROUND ELEVATION (masl):	864.16
EASTING (m):	386877.5	TOC ELEVATION (masl):	864.53

PROJECT:	**LMIGA**	WELL ID:	**LB20b-2**
TOTAL WELL DEPTH:	**10.05 m**		
TOTAL BOREHOLE DEPTH:	**9.7 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: dry, yellow brown			
		SILTY LOAM: dry, lacustrine, yellow brown, firm, low plasticity	1.0-1.5		
		SANDY LOAM: very fine grained, moist, lacustrine, yellow brown			
		SANDY LOAM: very fine grained, moist, lacustrine, brown	2.5-3.0		
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown	4.0-4.5		
5		SILTY CLAY: to SILTY LOAM, very moist, lacustrine, olive, stiff, medium plasticity	5.5-6.0		
		SAND: and GRAVEL, saturated, lacustrine, reddish brown, oxidized			
		SANDY LOAM: very fine grained, very moist, lacustrine, grey, soft, low plasticity	7.0-7.5		
		SANDY LOAM: very moist to saturated, lacustrine, grey, soft			
		CLAY: very moist, lacustrine, grey, stiff, high plasticity, very fine grained saturated sand lenses	8.5-9.0		
10					



NOTES:

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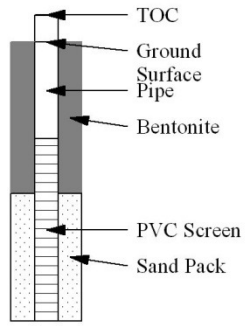
NORTHING (m): 5528146.1 GROUND ELEVATION (masl): 864.23

EASTING (m): 386877.7 TOC ELEVATION (masl): 864.58

PROJECT:	**LMIGA**	WELL ID:	**LB20c-1**
TOTAL WELL DEPTH:	**5.04 m**		
TOTAL BOREHOLE DEPTH:	**4.6 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen			
		SANDY LOAM: fine grained, moist, lacustrine, yellow brown	1.0-1.5		
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown			
		SILTY CLAY: very moist, lacustrine, yellow brown, stiff, medium to high plasticity	2.5-3.0		
		CLAY: moist, lacustrine, grey, stiff, high plasticity	4.0-4.5		
5					
10					



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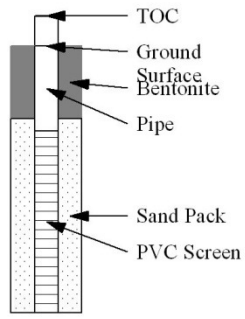
NORTHING (m):	5527745.8	GROUND ELEVATION (masl):	860.67
EASTING (m):	386869.6	TOC ELEVATION (masl):	861.11

PROJECT:	**LMIGA**	WELL ID:	**LB20d-1**
TOTAL WELL DEPTH:	**4.89 m**		
TOTAL BOREHOLE DEPTH:	**4.4 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: frozen, lacustrine			
		LOAMY SAND: medium grained, lacustrine, yellow brown	1.0-1.5		
		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown			
			2.5-3.0		
		@ 3.3 m: 100 mm coarse sand layer			
			4.0-4.5		
5					
10					



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NORTHING (m):	5527373.5	GROUND ELEVATION (masl):	858.75
EASTING (m):	386471.6	TOC ELEVATION (masl):	859.24

PROJECT:	**LMIGA**	WELL ID:	**LB20e-1**
TOTAL WELL DEPTH:	**5.3 m**		
TOTAL BOREHOLE DEPTH:	**5.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen, brownish yellow, topsoil		TOC, Ground Surface, Bentonite, Pipe	
		SANDY LOAM: fine grained, moist, brownish yellow			
		SANDY LOAM: fine grained, saturated, brownish yellow			
		CLAY TILL: moist, brown, stiff, medium plasticity, pebbles, coal chips, gravel layer at clay till contact		Sand Pack, PVC Screen	
5		CLAY TILL : moist, brown, stiff, medium plasticity, pebbles, coal chips			
10					

NOTES: Borehole not logged, lithology from LB20e-2

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NORTHING (m):	5527389.9	GROUND ELEVATION (masl):	858.48
EASTING (m):	386057.6	TOC ELEVATION (masl):	858.78

PROJECT:	**LMIGA**	WELL ID:	**LB20e-2**
TOTAL WELL DEPTH:	**9.96 m**		
TOTAL BOREHOLE DEPTH:	**9.7 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field C**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**Shelby tubes & disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen, brownish yellow, topsoil		TOC, Ground Surface	
		SANDY LOAM: fine grained, moist, brownish yellow	1.0-1.5, 1.5-1.9		
		SANDY LOAM: fine grained, saturated, brownish yellow	2.5-3.0		
		CLAY TILL: moist, brown, stiff, medium plasticity, pebbles, coal chips, gravel layer at clay till contact	4.0-4.5	Bentonite, Pipe	
5		CLAY TILL: moist, brown, stiff, medium plasticity, pebbles, coal chips	5.5-6.0		
		CLAY TILL: moist, grey, stiff, medium to high plasticity	7.0-7.5, 7.5-7.9, 8.5-9.0	Sand Pack, PVC Screen	
10					

NOTES:

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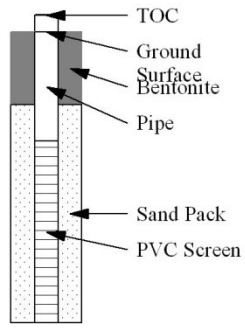
NORTHING (m): 5527389.6 GROUND ELEVATION (masl): 858.54

EASTING (m): 386056.2 TOC ELEVATION (masl): 858.80

PROJECT:	**LMIGA**	WELL ID:	**LB21a-1**
TOTAL WELL DEPTH:	**5.07 m**		
TOTAL BOREHOLE DEPTH:	**4.8 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field D**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SILTY CLAY LOAM: froze, lacustrine, yellow brown, topsoil			
		SILTY CLAY LOAM: froze, lacustrine, yellow brown			
		CLAY LOAM: moist, rafted till, brown, very firm, medium plasticity			
		LOAMY SAND: medium grained, saturated, lacustrine, brown			
		SANDY LOAM: fine grained, saturated, lacustrine, brown			
5		SANDY LOAM: fine grained, saturated, lacustrine, brown			
10					



NOTES: Borehole not logged, lithology from LB21a-2

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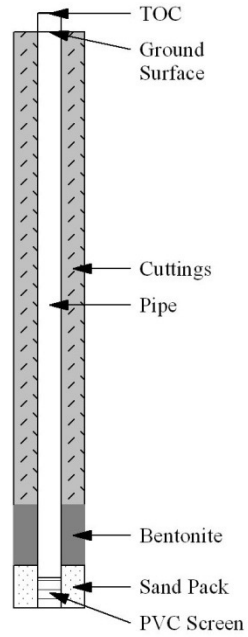
NORTHING (m):	5528989.4	GROUND ELEVATION (masl):	861.86
EASTING (m):	386086.2	TOC ELEVATION (masl):	862.13

PROJECT:	**LMIGA**	WELL ID:	**LB21a-2**
TOTAL WELL DEPTH:	**9.8 m**		
TOTAL BOREHOLE DEPTH:	**9.5 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field D**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**Shelby tubes and disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SILTY CLAY LOAM: froze, lacustrine, yellow brown, topsoil			
		SILTY CLAY LOAM: froze, lacustrine, yellow brown	1.0-1.5		
		CLAY LOAM: moist, rafted till, brown, very firm, medium plasticity	2.5-3.0		
		LOAMY SAND: medium grained, saturated, lacustrine, brown			
		SANDY LOAM: fine grained, saturated, lacustrine, brown	4.0-4.5		
5		SANDY LOAM: fine grained, saturated, lacustrine, brown			
		CLAY: very moist, lacustrine, greyish brown, stiff, medium plasticity	5.5-6.0 6.0-6.4		
		SANDY LOAM: to SANDY CLAY LOAM, fine grained, very moist to saturated, lacustrine, firm, low plasticity	7.0-7.5		
		CLAY TILL: moist, stiff, medium plasticity, grey	8.5-9.0		
10					



NOTES:

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NORTHING (m): 5528989.6 GROUND ELEVATION (masl): 861.89

EASTING (m): 386088.1 TOC ELEVATION (masl): 862.19

PROJECT:	**LMIGA**	WELL ID:	**LB21b-1**
TOTAL WELL DEPTH:	**5.17 m**		
TOTAL BOREHOLE DEPTH:	**4.8 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NE-7-11-19-4**	RIG TYPE:	**C-72**
SITE NAME:	**Field D**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**March 2 and 3, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen @ 0.6 m: Topsoil Layer		TOC, Ground Surface, Pipe, Bentonite	
		SANDY LOAM: moist, lacustrine			
		SANDY LOAM: very fine grained, saturated, lacustrine, yellow brown		PVC Screen, Sand Pack	
5					
10					

NOTES:

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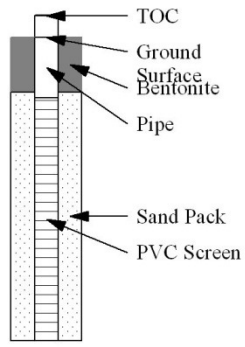
NORTHING (m):	5528557.8	GROUND ELEVATION (masl):	862.64
EASTING (m):	386886.1	TOC ELEVATION (masl):	863.01

PROJECT:	**LMIGA**	WELL ID:	**D-MW1**
TOTAL WELL DEPTH:	**5.35 m**		
TOTAL BOREHOLE DEPTH:	**5.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 2010**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, lacustrine, topsoil			
		SANDY LOAM: fine grained, moist, lacustrine	1.0-1.5		
		LOAMY SAND: fine grained, dry, lacustrine			
		LOAMY SAND: fine grained, dry, lacustrine, orange brown, oxidation	2.5-3.0		
		LOAMY SAND: medium grained, saturated, lacustrine, brown, oxidation	4.0-4.5		
5		LOAMY SAND: coarse grained, saturated, lacustrine, brown	5.5-6.0		
10					



NOTES: Well installed to 5.0 m

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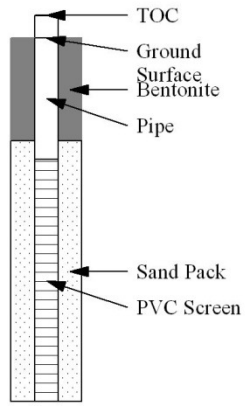
NORTHING (m): 5528724.8 GROUND ELEVATION (masl): 869.69

EASTING (m): 383651.2 TOC ELEVATION (masl): 870.04

PROJECT:	**LMIGA**	WELL ID:	**D-MW2**
TOTAL WELL DEPTH:	**6.35 m**		
TOTAL BOREHOLE DEPTH:	**5.98 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0					
5					
10					



NOTES: no lithological information recorded in field log

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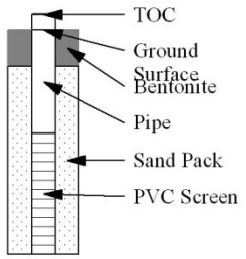
NORTHING (m):	5528641.4	GROUND ELEVATION (masl):	867.14
EASTING (m):	383693.3	TOC ELEVATION (masl):	867.56

PROJECT:	**LMIGA**	WELL ID:	**D-MW3**
TOTAL WELL DEPTH:	**3.95 m**		
TOTAL BOREHOLE DEPTH:	**18.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 2010**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, topsoil			
		SANDY LOAM: moist, lacustrine			
		SANDY LOAM: to LOAMY SAND, fine grained, saturated, lacustrine			
5		SILTY CLAY LOAM: very moist, lacustrine, soft			
		LOAMY SAND: fine grained, saturated, lacustrine			
10					



NOTES: Well installed to 3.7 m

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NORTHING (m):	5528651.4	GROUND ELEVATION (masl):	867.50
EASTING (m):	383732.4	TOC ELEVATION (masl):	867.75

PROJECT:	**LMIGA**	WELL ID:	**D-P10-1**
TOTAL WELL DEPTH:	**18.82 m**		
TOTAL BOREHOLE DEPTH:	**18.6 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 2010**	SAMPLING METHODS:	**continuous coring**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, moist, fill	0.2-0.3, 0.5-0.6, 0.8-0.9, 1.1-1.2, 1.4-1.5, 1.7-1.8, 2.0-2.1, 2.3-2.4, 2.6-2.7, 2.9-3.0, 3.2-3.3, 3.5-3.7, 3.8-4.0, 4.1-4.3, 4.4-4.6, 4.7-4.9, 5.0-5.2	TOC; Ground Surface	
		SANDY LOAM: fine grained, moist, lacustrine			
		SANDY CLAY LOAM: fine grained, moist, lacustrine, brown			
		SANDY CLAY LOAM: fine grained, moist, lacustrine, brown			
		SAND LOAM: fine grained, saturated, lacustrine, brown			
5		CLAY: to SILTY CLAY, moist, lacustrine, medium plasticity, oxidized along fractures, gray mottles, olive brown, stiff, coal flecks		Bentonite	
		SILTY CLAY: moist, lacustrine, medium plasticity, stiff, brown to olive brown, some very fine grained sand			
		SILTY CLAY: moist, lacustrine, medium plasticity,			
10		LOAMY SAND: fine grained, saturated, lacustrine, yellow brown		Pipe	
15		SANDY CLAY LOAM: very fine grained, very moist, lacustrine, very soft, grey, silty, clay lenses		Sand Pack	
20		SANDY CLAY LOAM: very fine grained, very moist to saturated, lacustrine, very soft, grey		PVC Screen	

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NORTHING (m):	5528671.6	GROUND ELEVATION (masl):	867.84
EASTING (m):	383734.8	TOC ELEVATION (masl):	868.06

PROJECT:	**LMIGA**	WELL ID:	**D-P10-2**
TOTAL WELL DEPTH:	**8.40 m**		
TOTAL BOREHOLE DEPTH:	**8.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 2010**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY CLAY LOAM: fine grained, dry, fill		TOC	Ground Surface
		SANDY CLAY LOAM: fine grained, slightly moist, lacustrine	1.0-1.5		
		LOAMY SAND: moist, lacustrine			
		LOAMY SAND: saturated, lacustrine	2.5-3.0		Bentonite
		CLAY: to SILTY CLAY, very moist, lacustrine, stiff, medium plasticity			Pipe
			4.0-4.5		
5			5.5-6.0		Peltonite
			7.0-7.5		Sand Pack
					PVC Screen
10					

NOTES:

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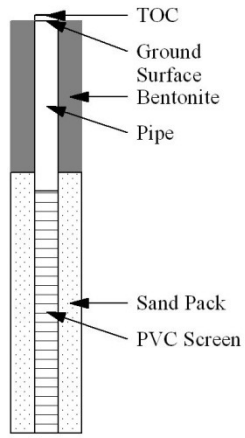
NORTHING (m):	5528667.0	GROUND ELEVATION (masl):	867.87
EASTING (m):	383734.3	TOC ELEVATION (masl):	868.27

PROJECT:	**LMIGA**	WELL ID:	**D-MW5**
TOTAL WELL DEPTH:	**6.89 m**		
TOTAL BOREHOLE DEPTH:	**6.8 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**solid stem auger**
DATES DRILLED:	**February 2010**	SAMPLING METHODS:	**disturbed**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: moist, lacustrine, topsoil			
		SILTY CLAY LOAM: dry, lacustrine	1.0-1.5		
		LOAMY CLAY SAND: dry, lacustrine, reddish brown			
		CLAY LOAM: moist, lacustrine, stiff, medium plasticity, grey	2.0-3.0		
		LOAMY CLAYEY SAND: saturated, lacustrine, oxidized, greyish brown			
		LOAMY CLAYEY SAND: saturated, lacustrine, greyish brown	4.0-4.5		
5			5.5-6.0		
		SILTY CLAY: very moist, lacustrine, stiff, greyish brown			
10					



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NORTHING (m):	5528572.2	GROUND ELEVATION (masl):	866.42
EASTING (m):	383990.6	TOC ELEVATION (masl):	866.51

PROJECT:	**LMIGA**	WELL ID:	**D-MW10a**
TOTAL WELL DEPTH:	**7.6 m**		
TOTAL BOREHOLE DEPTH:	**7.2 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**January 6, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, lacustrine, topsoil		TOC; Ground Surface	
		CLAY LOAM: slightly moist, lacustrine, stiff, brown			
		SILTY CLAY LOAM: moist, lacustrine, stiff, medium plasticity, olive brown, layered, varved		Bentonite; Pipe	
		CLAY: moist, lacustrine, stiff, medium to high plasticity, olive brown layered, with SILTY CLAY LOAM			
5		SANDY CLAY LOAM: very fine grained, moist, lacustrine, very firm, low to medium plasticity, yellow brown, saturated, sand lenses		Sand Pack; PVC Screen	
		SILTY CLAY LOAM: moist to very moist, lacustrine, very firm, low to medium plasticity, yellow brown, saturated, sand lenses			
10					

NOTES: Borehole not logged, lithology from D-P11-10c

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NORTHING (m):	5529006.5	GROUND ELEVATION (masl):	868.02
EASTING (m):	383653.1	TOC ELEVATION (masl):	868.42

PROJECT:	**LMIGA**	WELL ID:	**D-P11-10b**
TOTAL WELL DEPTH:	**20.44 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**January 6, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, lacustrine, topsoil		TOC	Ground Surface
		CLAY LOAM: slightly moist, lacustrine, stiff, brown			
		SILTY CLAY LOAM: moist, lacustrine, stiff, medium plasticity, olive brown, layered, varved			
		CLAY: moist, lacustrine, stiff, medium to high plasticity, olive brown layered, with SILTY CLAY LOAM			
5		SANDY CLAY LOAM: very fine grained, moist, lacustrine, very firm, low to medium plasticity, yellow brown, saturated, sand lenses		Bentonite	
		SILTY CLAY LOAM: moist to very moist, lacustrine, very firm, low to medium plasticity, yellow brown, saturated, sand lenses			
		CLAY: moist, lacustrine, stiff, medium plasticity, brown			
		CLAY LOAM: moist, lacustrine, very firm, medium plasticity, brown			
10		LOAMY SAND: fine grained, saturated, lacustrine, very soft, yellow brown		Pipe	
				Cuttings	
15		SANDY LOAM: to SANDY CLAY LOAM, fine grained, saturated, lacustrine, very soft, yellow brown			
		SILTY CLAY LOAM: moist, lacustrine, stiff, medium to high plasticity, grey		Bentonite	
				Sand Pack	
20				PVC Screen	

NOTES: Borehole not logged, lithology from D-P11-10c

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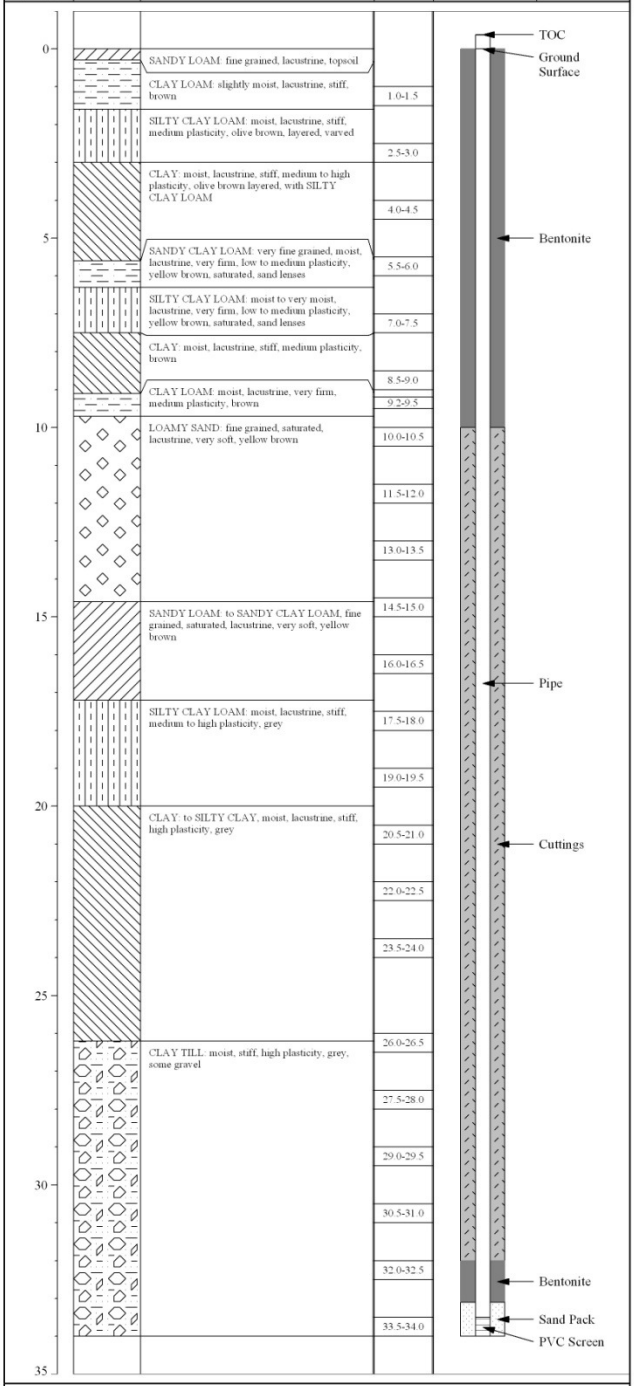
NORTHING (m):	5529004.9	GROUND ELEVATION (masl):	868.07
EASTING (m):	383653.6	TOC ELEVATION (masl):	868.51

PROJECT:	LMIGA	WELL ID:	**D-P11-10c**
TOTAL WELL DEPTH:	34.37 m		
TOTAL BOREHOLE DEPTH:	34.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NW-12-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 1	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	January 5, 2011	SAMPLING METHODS:	core

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE
		SANDY LOAM: fine grained, lacustrine, topsoil	
		CLAY LOAM: slightly moist, lacustrine, stiff, brown	1.0-1.5
		SILTY CLAY LOAM: moist, lacustrine, stiff, medium plasticity, olive brown, layered, varved	2.5-3.0
		CLAY: moist, lacustrine, stiff, medium to high plasticity, olive brown layered, with SILTY CLAY LOAM	4.0-4.5
		SANDY CLAY LOAM: very fine grained, moist, lacustrine, very firm, low to medium plasticity, yellow brown, saturated, sand lenses	5.5-6.0
		SILTY CLAY LOAM: moist to very moist, lacustrine, very firm, low to medium plasticity, yellow brown, saturated, sand lenses	7.0-7.5
		CLAY: moist, lacustrine, stiff, medium plasticity, brown	8.5-9.0
		CLAY LOAM: moist, lacustrine, very firm, medium plasticity, brown	9.2-9.5
		LOAMY SAND: fine grained, saturated, lacustrine, very soft, yellow brown	10.0-10.5
			11.5-12.0
			13.0-13.5
		SANDY LOAM: to SANDY CLAY LOAM, fine grained, saturated, lacustrine, very soft, yellow brown	14.5-15.0
			16.0-16.5
		SILTY CLAY LOAM: moist, lacustrine, stiff, medium to high plasticity, grey	17.5-18.0
			19.0-19.5
		CLAY: to SILTY CLAY, moist, lacustrine, stiff, high plasticity, grey	20.5-21.0
			22.0-22.5
			23.5-24.0
		CLAY TILL: moist, stiff, high plasticity, grey, some gravel	26.0-26.5
			27.5-28.0
			29.0-29.5
			30.5-31.0
			32.0-32.5
			33.5-34.0



NOTES:

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NORTHING (m): 5529003.5 GROUND ELEVATION (masl): 868.13

EASTING (m): 383653.7 TOC ELEVATION (masl): 868.50

PROJECT:	**LMIGA**	WELL ID:	**D-P11-10d**
TOTAL WELL DEPTH:	**13.34 m**		
TOTAL BOREHOLE DEPTH	**13.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**November 9, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: moist, lacustrine		TOC; Ground Surface	
		CLAY LOAM: moist, lacustrine, yellow brown, firm			
		SILTY CLAY LOAM: moist, yellow brown, stiff, varved			
		SILTY CLAY LOAM: moist, yellow brown, stiff, varved, medium plasticity with high plasticity SILTY CLAY layers			
5		SILTY CLAY: moist, yellow brown, stiff, varved, medium to high plasticity, saturated sand layers from 5.5 to 6.0 m		Bentonite; Pipe	
		CLAY: to SILTY CLAY, moist, dark brown, very stiff, high plasticity			
		CLAY: to SILTY CLAY, moist, dark brown, very stiff, high plasticity			
10		LOAMY SAND: saturated, olive brown		Sand/Slough; PVC Screen	

NOTES: sampled bottom 0.15 m of every 0.3 m interval

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NORTHING (m):	5529002.0	GROUND ELEVATION (masl):	868.15
EASTING (m):	383653.7	TOC ELEVATION (masl):	868.49

PROJECT:	**LMIGA**	WELL ID:	**D-MW11a**
TOTAL WELL DEPTH:	**7.42 m**		
TOTAL BOREHOLE DEPTH:	**7.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**January 4, 2011**	SAMPLING METHODS:	**not sampled**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SILTY CLAY LOAM: dry, lacustrine, topsoil		TOC	
		SILTY CLAY LOAM: moist, lacustrine		Ground Surface	
		SILTY CLAY: to CLAY, moist, lacustrine, stiff, medium plastic, olive brown		Bentonite	
		SAND: fine to medium grained, lacustrine, oxidized, brown		Pipe	
		LOAMY SAND: fine grained, saturated, lacustrine, brown			
5				Sand Pack	
		SILTY CLAY: moist, lacustrine, stiff, medium to high plasticity, olive brown, layered		PVC Screen	
10					

NOTES: Borehole not logged, lithology from D-P11-11b

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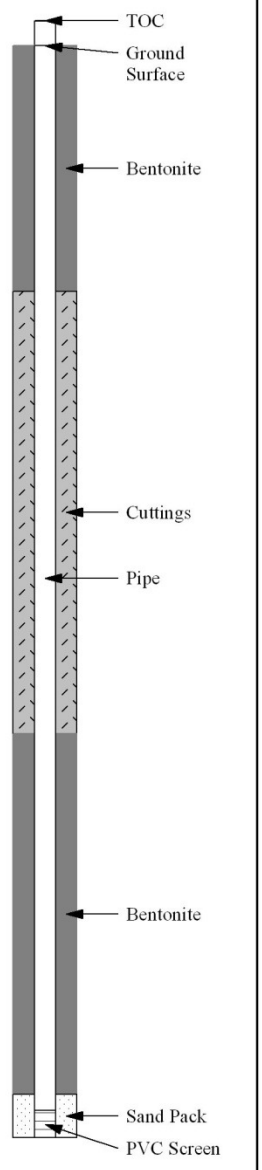
NORTHING (m):	5529014.0	GROUND ELEVATION (masl):	864.80
EASTING (m):	384043.4	TOC ELEVATION (masl):	865.22

PROJECT:	**LMIGA**	WELL ID:	**D-P11-11b**
TOTAL WELL DEPTH:	**20.45 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**January 4, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SILTY CLAY LOAM: dry, lacustrine, topsoil			
		SILTY CLAY LOAM: moist, lacustrine	1.0-1.5		
		SILTY CLAY: to CLAY, moist, lacustrine, stiff, medium plastic, olive brown			
		SAND: fine to medium grained, lacustrine, oxidized, brown	2.5-2.7 2.7-3.0		
		LOAMY SAND: fine grained, saturated, lacustrine, brown	4.2-4.5		
5			5.5-6.0		
		SILTY CLAY: moist, lacustrine, stiff, medium to high plasticity, olive brown, layered	6.8-7.1		
		LOAMY SAND: fine grained, saturated, lacustrine, olive brown	7.1-7.5		
		LOAMY SAND: saturated, lacustrine, olive brown, layers of very fine grained SANDY LOAM and SANDY CLAY LOAM	8.5-9.0		
10			10.0-10.5		
		SANDY CLAY LOAM: saturated, lacustrine, soft, low plasticity, olive brown	11.5-12.0		
		SILTY CLAY: moist, lacustrine, stiff, high plasticity, grey	13.0-13.5		
15			14.5-15.0		
			16.0-16.5		
			17.5-18.0		
20					



NOTES:

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NORTHING (m): 5529016.3 GROUND ELEVATION (masl): 864.75

EASTING (m): 384043.4 TOC ELEVATION (masl): 865.20

PROJECT:	**LMIGA**	WELL ID:	**D-MW12a**
TOTAL WELL DEPTH:	**7.3 m**		
TOTAL BOREHOLE DEPTH:	**7.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 22, 2011**	SAMPLING METHODS:	**not sampled**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY CLAY LOAM: fine grained, frozen, lacustrine		TOC; Ground Surface	
		CLAY LOAM: moist, lacustrine			
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, sand lenses		Bentonite; Pipe	
		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown			
		SILTY CLAY LOAM: very moist, lacustrine, yellow brown, very firm, medium plasticity, varved, sand lenses			
5		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown		Sand Pack; PVC Screen	
		SILTY CLAY LOAM: very moist, lacustrine, olive, firm, medium plastic layers of SITLY CLAY and very fine grained SAND			
10					

NOTES: Borehole not logged, lithology from D-P11-12b

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NORTHING (m):	5528610.4	GROUND ELEVATION (masl):	867.64
EASTING (m):	383671.2	TOC ELEVATION (masl):	867.94

PROJECT:	**LMIGA**	WELL ID:	**D-P11-12b**
TOTAL WELL DEPTH:	**20.45 m**		
TOTAL BOREHOLE DEPTH:	**20.1 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 22, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY CLAY LOAM: fine grained, frozen, lacustrine			TOC; Ground Surface
		CLAY LOAM: moist, lacustrine	1.0-1.5		
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, sand lenses			Bentonite
		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown	2.5-3.0		
		SILTY CLAY LOAM: very moist, lacustrine, yellow brown, very firm, medium plasticity, varved, sand lenses	4.0-4.5		
5		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown			
		SILTY CLAY LOAM: very moist, lacustrine, olive, firm, medium plastic layers of SITLY CLAY and very fine grained SAND	5.5-6.0		
			7.0-7.5		
		SILTY CLAY: moist, lacustrine, olive grey, medium plasticity	8.5-9.0		
		SILTY CLAY: moist, lacustrine, olive grey, medium to high plasiticy, stiff			Pipe
10			10.0-10.5		Cuttings
		SILTY CLAY: moist to very moist, lacustrine, olive grey, very firm, medium plasticity	11.5-12.0		
		SILTY CLAY: moist to very moist, lacustrine, olive grey, stiff, medium to high plasiticity			
		SILTY CLAY LOAM: to SILTY CLAY, moist, very moist, lacustrine, grey, stiff, medium to high plasticity	13.0-13.5		
			14.5-15.0		
15		SANDY CLAY LOAM: to SANDY LOAM, saturated, lacustrine, grery, soft, low plasticity, sand lensing			
			16.0-16.5		
		SANDY CLAY: very fine grained, very moist, lacustrine, grey, firm, low plasticity, sand lensing, silty			
			17.5-18.0		Bentonite
		SILTY CLAY: lacustrine, very moist, lacustrine, grey, stiff, high plasticity.	19.0-19.5		Sand Pack; PVC Screen
20					

NOTES:

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NORTHING (m): 5528610.0 GROUND ELEVATION (masl): 867.61

EASTING (m): 383669.8 TOC ELEVATION (masl): 867.96

PROJECT:	**LMIGA**	WELL ID:	**D-MW13a**
TOTAL WELL DEPTH:	**7.39 m**		
TOTAL BOREHOLE DEPTH:	**7.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 9, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		LOAMY SAND: fine grained, frozen, lacustrine		TOC; Ground Surface	
		LOAMY SAND: fine grained, moist, lacustrine, yellow brown		Bentonite	
		LOAMY SAND: medium grained, saturated, lacustrine, reddish brown		Pipe	
5				Sand Pack; PVC Screen	
10					

NOTES: Borehole not logged, lithology from D-P11-13b

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NORTHING (m):	5528672.8	GROUND ELEVATION (masl):	867.05
EASTING (m):	383769.5	TOC ELEVATION (masl):	867.44

PROJECT:	**LMIGA**	WELL ID:	**D-P11-13b**
TOTAL WELL DEPTH:	**20.46 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 9, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		LOAMY SAND: fine grained, frozen, lacustrine	0-0.15	TOC	Ground Surface
		LOAMY SAND: fine grained, moist, lacustrine, yellow brown	0.6-0.75		Bentonite
		LOAMY SAND: medium grained, saturated, lacustrine, reddish brown	1.8-2.0		
5			3.7-3.8		
			4.3-4.4		
			4.9-5.0		
			5.5-5.6		
			6.1-6.3		
			6.7-6.9		Slough
			7.3-7.5		
			7.9-8.1		
			8.5-8.7		
			9.2-9.3		
10		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown			Pipe
		CLAY: moist, lacustrine, grey, stiff, high plasticity			
15					Bentonite
		CLAY: to SILTY CLAY, moist, lacustrine, grey, stiff, medium to high plasticity			
20					Sand Pack
					PVC Screen

NOTES:

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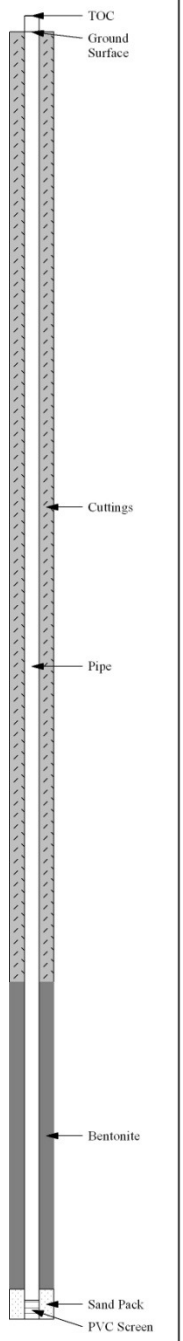
NORTHING (m): 5528673.1 GROUND ELEVATION (masl): 867.06

EASTING (m): 383768.0 TOC ELEVATION (masl): 867.52

PROJECT:	LMIGA	WELL ID:	**D-P11-13c**
TOTAL WELL DEPTH:	34.42 m		
TOTAL BOREHOLE DEPTH:	34.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NW-12-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 1	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	February 9, 2011	SAMPLING METHODS:	core

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		LOAMY SAND: fine grained, frozen, lacustrine			
		SANDY LOAM: fine grained, lacustrine, yellow brown	1.0-1.5		
		SANDY LOAM: saturated, lacustrine, yellow brown			
		LOAMY SAND: fine grained, saturataed, lacustrine, dark grey, organic	2.5-3.0		
		LOAMY SAND: fine grained, saturated, lacustrine, yellow brown	4.0-4.5		
5		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown, clay lenses	5.5-6.0		
			7.0-7.5		
			8.5-9.0		
10		LOAMY SAND: medium grained, saturated, lacustrine, yellow brown	10.0-10.5		
			11.5-12.0		
			13.0-13.5		
15			14.5-15.0		
			16.0-16.5		
		CLAY: moist, lacustrine, grey, stiff, high plasticity	17.5-18.0		
20			20.5-21.0		
			22.0-22.5		
			23.5-24.0		
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles			
25		CLAY TILL: moist, grey, stiff, high plasticity, pebbles	25.0-25.5		
			26.5-27.0		
			28.0-28.5		
		CLAY TILL: moist, grey, stiff, medium plasticity, pebbles, coal chips			
30			29.5-30.0		
			31.0-31.5		
			32.5-33.0		
35					



NOTES:

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NORTHING (m): 5528672.5 GROUND ELEVATION (masl): 866.92

EASTING (m): 383771.5 TOC ELEVATION (masl): 867.34

PROJECT:	**LMIGA**	WELL ID:	**D-MW14a**
TOTAL WELL DEPTH:	**7.43 m**		
TOTAL BOREHOLE DEPTH:	**7.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 10, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen, topsoil, lacustrine		TOC; Ground Surface	
		LOAMY SAND: fine grained, moist, lacustrine, olive grey		Bentonite	
		LOAMY SAND: fine grained, saturated, lacustrine, olive grey		Pipe	
		LOAMY SAND: saturated, lacustrine, yellow brown			
		CLAY: very moist, lacustrine, yellow brown, stiff, medium plasticity			
5		LOAMY SAND: saturated, lacustrine, yellow brown		Sand Pack; PVC Screen	
		CLAY: moist, lacustrine, yellow brown, stiff, medium plasticity			
		CLAY: moist, lacustrine, grey, stiff, high plasticity			
10					

NOTES: Borehole not logged, lithology from D-P11-14c

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NORTHING (m):	5528656.7	GROUND ELEVATION (masl):	865.65
EASTING (m):	383840.3	TOC ELEVATION (masl):	866.08

PROJECT:	**LMIGA**	WELL ID:	**D-P11-14b**
TOTAL WELL DEPTH:	**20.46 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 10, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, frozen, topsoil, lacustrine	0-0.15	TOC	Ground Surface
			0.6-0.75		
		LOAMY SAND: fine grained, moist, lacustrine, olive grey	1.2-1.4		
			1.8-2.0		
		LOAMY SAND: fine grained, saturated, lacustrine, olive grey	2.4-2.6		Bentonite
		LOAMY SAND: saturated, lacustrine, yellow brown			
		CLAY: very moist, lacustrine, yellow brown, stiff, medium plasticity	3.7-3.8		
			4.3-4.4		
5		LOAMY SAND: saturated, lacustrine, yellow brown	4.9-5.0		
			5.5-5.6		
		CLAY: moist, lacustrine, yellow brown, stiff, medium plasticity	6.1-6.3		
		CLAY: moist, lacustrine, grey, stiff, high plasticity	6.7-6.9		
			7.3-7.5		
		LOAMY SAND: fine grained, saturated, lacustrine, yellow brown	7.9-8.1		
			8.5-8.7		
			9.2-9.3		
10					Pipe
					Cuttings
		SILTY CLAY : moist, lacustrine, grey, very firm, medium plasticity			
		SANDY LOAM: to SANDY CLAY LOAM, fine grained, saturated, lacustrine, grey, firm, layers of medium to high plasticity clay			
15					
		CLAY LOAM: to CLAY, moist, lacustrine, grey, very firm, medium to high plasticity			
		SANDY LOAM: to SANDY CLAY LOAM, very fine grained, very moist to saturated, lacustrine, grey, low plasticity, high plasticity clay layers			Bentonite
					Sand Pack
20					PVC Screen

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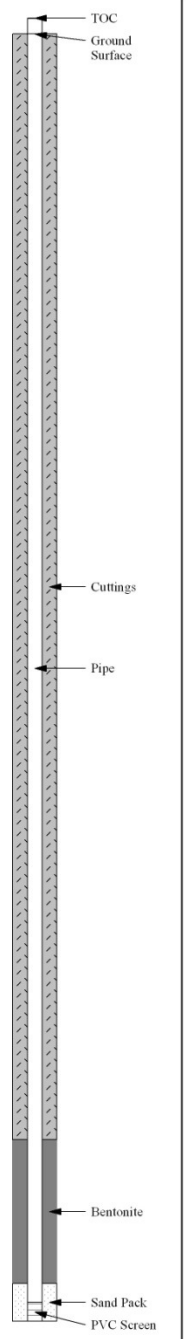
NORTHING (m):	5528656.4	GROUND ELEVATION (masl):	865.65
EASTING (m):	383838.9	TOC ELEVATION (masl):	866.11

PROJECT:	LMIGA	WELL ID:	**D-P11-14c**
TOTAL WELL DEPTH:	34.41 m		
TOTAL BOREHOLE DEPTH:	34.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	NW-12-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 1	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	February 10, 2011	SAMPLING METHODS:	core

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE
0		SANDY LOAM: fine grained, frozen, topsoil, lacustrine	
		LOAMY SAND: fine grained, moist, lacustrine, olive grey	1.0-1.5
		LOAMY SAND: fine grained, saturated, lacustrine, olive grey	
		LOAMY SAND: saturated, lacustrine, yellow brown	2.5-3.0
		CLAY: very moist, lacustrine, yellow brown, stiff, medium plasticity	4.0-4.5
5		LOAMY SAND: saturated, lacustrine, yellow brown	
		CLAY: moist, lacustrine, yellow brown, stiff, medium plasticity	5.5-6.0
		CLAY: moist, lacustrine, grey, stiff, high plasticity	7.0-7.5
			8.5-9.0
10		SILTY CLAY: moist, lacustrine, grey, very firm, medium plasticity	10.0-10.5
			11.5-12.0
		CLAY: moist, lacustrine, grey, stiff, high plasticity, trace sand	13.0-13.5
15			14.5-15.0
			16.0-16.5
		SILTY CLAY: to SILTY CLAY LOAM, moist, lacustrine, grey, very firm, medium plasticity, some sand	17.5-18.0
			19.0-19.5
20			20.5-21.0
		SILTY CLAY: to SILTY CLAY LOAM, very moist to saturated, lacustrine, grey, very firm, medium plasticity , some sand	22.0-22.5
		CLAY TILL: moist, grey, stiff, medium to high plasticity, pebbles	23.5-24.0
25			25.0-25.5
			26.5-27.0
			28.0-28.5
30			29.5-30.0
			31.0-31.5
			32.5-33.0
35		CLAY TILL: moist, grey, stiff, medium to high plasticity, gravelly	



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NORTHING (m):	5528656.9	GROUND ELEVATION (masl):	865.62
EASTING (m):	383841.7	TOC ELEVATION (masl):	866.03

PROJECT:	**LMIGA**	WELL ID:	**D-MW15a**
TOTAL WELL DEPTH:	**7.35 m**		
TOTAL BOREHOLE DEPTH:	**7.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 11, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: frozen, lacustrine, topsoil		TOC; Ground Surface	
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, stiff, varved		Bentonite	
		SILTY CLAY LOAM: moist, lacustrine, olive brown, stiff, varved		Pipe	
		LOAMY SAND: fine grained, saturated, lacustrine, olive brown, free water			
		SILTY CLAY: moist, lacustrine, olive brown, stiff, medium plastic, some very fine grained sand			
5				Sand Pack	
				PVC Screen	
10					

NOTES: Borehole not logged, lithology from D-P11-15c

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NORTHING (m):	5528526.3	GROUND ELEVATION (masl):	866.18
EASTING (m):	383872.8	TOC ELEVATION (masl):	866.53

PROJECT:	**LMIGA**	WELL ID:	**D-P11-15b**
TOTAL WELL DEPTH:	**20.31 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**February 11, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: frozen, lacustrine, topsoil	0-0.15	TOC	Ground Surface
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, stiff, varved	0.6-0.75		
		SILTY CLAY LOAM: moist, lacustrine, olive brown, stiff, varved	1.8-2.0		
		LOAMY SAND: fine grained, saturated, lacustrine, olive brown, free water	2.4-2.6		
		SILTY CLAY: moist, lacustrine, olive brown, stiff, medium plastic, some very fine grained sand	3.7-3.8		
5			4.9-5.0		
			5.5-5.6		
			6.1-6.3		
			6.7-6.9		
			7.3-7.5	Cuttings	
			7.9-8.1		
			8.5-8.7		
			9.2-9.3		
10				Pipe	
		SILTY CLAY: very moist, lacustrine, grey, stiff, high plasticity			
15				Bentonite	
20				Sand Pack PVC Screen	

NOTES: Borehole not logged, lithology from D-P11-15c

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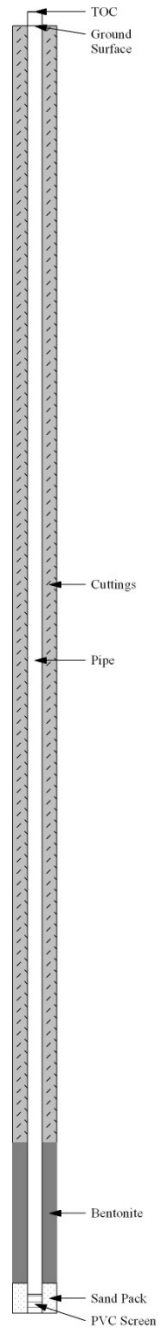
NORTHING (m): 5528524.4 GROUND ELEVATION (masl): 866.11

EASTING (m): 383871.0 TOC ELEVATION (masl): 866.42

PROJECT:	LMIGA	WELL ID:	**D-P11-15c**
TOTAL WELL DEPTH:	34.0 m		
TOTAL BOREHOLE DEPTH:	34.37 m	DRILLING CO.:	Chilako
SITE LOCATION:	NW-12-11-20-4	RIG TYPE:	C-72
SITE NAME:	CFO Facility 1	METHOD OF DRILLING:	hollow stem auger
DATES DRILLED:	February 11, 2011	SAMPLING METHODS:	core

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: frozen, lacustrine, topsoil			
		SILTY CLAY LOAM: moist, lacustrine, yellow brown, stiff, varved	1.0-1.5		
		SILTY CLAY LOAM: moist, lacustrine, olive brown, stiff, varved			
		LOAMY SAND: fine grained, saturated, lacustrine, olive brown, free water	2.5-3.0		
		SILTY CLAY: moist, lacustrine, olive brown, stiff, medium plastic, some very fine grained sand	4.0-4.5		
5			5.5-6.0		
			7.0-7.5		
			8.5-9.0		
10			10.0-10.5		
		SILTY CLAY: very moist, lacustrine, grey, stiff, high plasticity	11.5-12.0		
			13.0-13.5		
15			14.5-15.0		
			16.0-16.5		
			17.5-18.0		
			19.0-19.5		
20		SILTY CLAY: very moist to saturated, lacustrine, grey, very firm, medium to high plasticity, trace sand	20.5-21.0		
		CLAY TILL: moist, grey, stiff, high plasticity, pebbles	22.0-22.5		
			23.5-24.0		
25			25.0-25.5		
			26.5-27.0		
			28.0-28.5		
			29.5-30.0		
30			31.0-31.5		
		CLAY TILL: moist, grey, stiff, high plasticity, some gravel	32.5-33.0		
35					



NOTES:

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NORTHING (m): 5528523.7 GROUND ELEVATION (masl): 866.16

EASTING (m): 383873.7 TOC ELEVATION (masl): 866.53

PROJECT:	**LMIGA**	WELL ID:	**D-P11-15d**
TOTAL WELL DEPTH:	**13.01 m**		
TOTAL BOREHOLE DEPTH	**12.6 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**November 9, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: very fine grained, moist, topsoil		TOC	
		SANDY CLAY LOAM: to SILTY CLAY LOAM, moist, lacustrine, yellow brown		Ground Surface	
		LOAMY SAND: fine to medium grained, saturated, lacustrine, olive brown, free water		Bentonite	
		SANDY LOAM: very fine grained, saturated, lacustrine, olive brown, free water			
5		SILTY CLAY LOAM: saturated, lacustrine, olive brown, medium plasticity, firm			
		SILTY CLAY: moist, lacustrine, olive brown, medium plasticity, stiff, varved		Pipe	
		SILTY CLAY: moist, lacustrine, olive grey, medium to high plasticity, stiff, varved		Slough	
10				Bentonite	
				Sand Pack	
				PVC Screen	

NOTES: sampled bottom 0.15 m of every 0.3 m interval

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NORTHING (m):	5528522.7	GROUND ELEVATION (masl):	866.08
EASTING (m):	383870.7	TOC ELEVATION (masl):	866.49

PROJECT:	**LMIGA**	WELL ID:	**D-MW16a**
TOTAL WELL DEPTH:	**6.40 m**		
TOTAL BOREHOLE DEPTH:	**6.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**January 7, 2011**	SAMPLING METHODS:	**no sampling**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, dry, topsoil		TOC, Ground Surface	
		SANDY LOAM: moist, lacustrine			
		SILTY CLAY LOAM: moist, lacustrine, firm, some sand		Bentonite, Pipe	
		SILTY CLAY LOAM: to SILTY CLAY, moist, lacustrine, yllow brown, low to medium plasticity			
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown			
		SILTY CLAY: moist, lacustrine, yellow brown, stiff, medium plasiticity		Sand Pack, PVC Screen	
5		CLAY: moist, lacustrine, grey, stiff, high plasticity			
10					

NOTES:	Borehole not logged, lithology from D-P11-16b		Page 1 of 1
NORTHING (m):	5528339.9	GROUND ELEVATION (masl):	866.03
EASTING (m):	383653.7	TOC ELEVATION (masl):	866.43

PROJECT:	**LMIGA**	WELL ID:	**D-P11-16b**
TOTAL WELL DEPTH:	**20.41 m**		
TOTAL BOREHOLE DEPTH:	**20.0 m**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**NW-12-11-20-4**	RIG TYPE:	**C-72**
SITE NAME:	**CFO Facility 1**	METHOD OF DRILLING:	**hollow stem auger**
DATES DRILLED:	**January 7, 2011**	SAMPLING METHODS:	**core**

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		SANDY LOAM: fine grained, dry, topsoil		TOC	Ground Surface
		SANDY LOAM: moist, lacustrine	1.0-1.5		
		SILTY CLAY LOAM: moist, lacustrine, firm, some sand			
		SILTY CLAY LOAM: to SILTY CLAY, moist, lacustrine, yllow brown, low to medium plasticity	2.5-3.0		
			3.0-3.5		
		SANDY LOAM: fine grained, saturated, lacustrine, yellow brown			
		SILTY CLAY: moist, lacustrine, yellow brown, stiff, medium plasiticity	4.0-4.5		
5		CLAY: moist, lacustrine, grey, stiff, high plasticity	5.5-6.0		
			7.0-7.5		
		CLAY LOAM: moist, lacustrine, grey, very firm, medium plasticity			
		CLAY LOAM: to SANDY CLAY LOAM, very moist, lacustrine, very firm, low to medium plasticity, grey	8.5-9.0	Bentonite	
10		CLAY LOAM: moist, lacustrine, very firm, medium plasticity, grey, sand streaks, some silt	10.0-10.5	Pipe	
			11.5-12.0		
		SILTY CLAY: moist, lacustrine, grey, very firm, stiff, medium plasticity, silty and sandy lenses			
			13.0-13.5		
15			14.5-15.0		
			16.0-16.5		
			17.5-18.0		
			19.0-19.5	Sand Pack	
20				PVC Screen	

NOTES:

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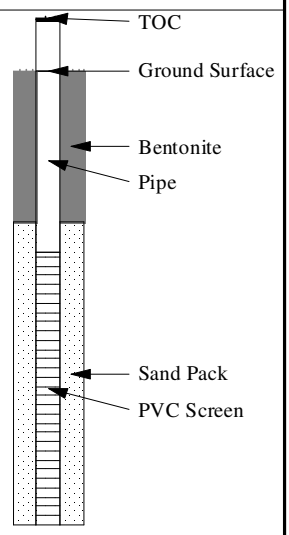
NORTHING (m):	5528340.7	GROUND ELEVATION (masl):	866.05
EASTING (m):	383652.0	TOC ELEVATION (masl):	866.46

PROJECT:	**LMIGA**	WELL ID:	**B-MW2a**
TOTAL WELL DEPTH:	**8.35**		
TOTAL BOREHOLE DEPTH:	**7.5**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-25-41-27-4**	RIG TYPE:	
SITE NAME:	**CFO-4**	METHOD OF DRILLING:	
DATES DRILLED:	**February/March 2010**	SAMPLING METHODS:	

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill			
		CLAY LOAM: moist, fill	1.0-1.5		
		CLAY: to SILTY CLAY, moist, lacustrine	2.5-3.0		
		CLAY TILL: clay loam, moist, pebbles, coal chips	4.0-4.5		
5		CLAY TILL: clay loam, moist to very moist, sand streaks			
		SANDSTONE: moist, yellow-brown, soft	5.5-6.0		
		SANDSTONE: fine grained, dry, olive	7.0-7.5		
10					



NOTES:

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NORTHING (m):	5825970.3	GROUND ELEVATION (masl):	857.89
EASTING (m):	313575.5	TOC ELEVATION (masl):	858.74

PROJECT:	**LMIGA**	WELL ID:	**B-MW4a**
TOTAL WELL DEPTH:	**8.35**		
TOTAL BOREHOLE DEPTH:	**7.5**	DRILLING CO.:	**Chilako**
SITE LOCATION:	**SE-25-41-27-4**	RIG TYPE:	
SITE NAME:	**CFO-4**	METHOD OF DRILLING:	
DATES DRILLED:	**February/March 2010**	SAMPLING METHODS:	

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: frozen, fill			TOC; Ground Surface
		LOAM: to CLAY LOAM, dry, topsoil	1.5-1.8		Bentonite; Pipe
		CLAY: to SILTY CLAY, moist, laustrine, stiff, medium to high plasticity	2.5-3.0		
		CLAY TILL: clay loam, moist, pebbles, coal,			
		CLAY TILL: sandy clay loam, very moist, some gravel, saturated sand lenses	4.0-4.5		
5		CLAY TILL: moist, cemented layers, oxidized, soft bedrock	5.5-6.0		Sand Pack; PVC Screen
		hard cemented layer			
10					

NOTES:

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NORTHING (m):	5826016.3	GROUND ELEVATION (masl):	858.04
EASTING (m):	313528.2	TOC ELEVATION (masl):	858.89

PROJECT:	LMIGA	WELL ID:	**B-P10-15e**
TOTAL WELL DEPTH:	15.70	DRILLING CO.:	Chilako
TOTAL BOREHOLE DEPTH:	14.85	RIG TYPE:	
SITE LOCATION:	SE-25-41-27-4	METHOD OF DRILLING:	
SITE NAME:	CFO-4	SAMPLING METHODS:	
DATES DRILLED:	February/March 2010		

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: moist, fill		TOC	
		CLAY LOAM: moist to very moist, fill		Ground Surface	
		CLAY: to SILTY CLAY, moist lacustrine			
		CLAY TILL: clay loam, moist, pebbles, coal chips, sand streaks			
5		CLAY TILL: clay loam, very moist, pebbles, coal chips, sand streaks			
		SANDSTONE: fine grained, dry, olive		Bentonite	
		SANDSTONE: saturated, soft bedrock, olive brown, free water		Pipe	
		SANDSTONE: moist, olive with orange brown layers, soft bedrock			
10		SANDSTONE: dry, olive brown, very hard, cemented layers throughout, hard layers were light grey, fine grained			
		SANDSTONE: soft bedrock, olive brown with orange brown layers, free water			
		SANDSTONE: yellow brown, very hard, borehole produing constant water flow		PVC Screen	
15				Sand Pack	
20					

NOTES:	Borehole not logged, lithology from B-P10-21e		Page 1 of 1
NORTHING (m):	5825958.4	GROUND ELEVATION (masl):	858.16
EASTING (m):	313575.0	TOC ELEVATION (masl):	859.00

PROJECT:	LMIGA	WELL ID:	**B-P10-21e**
TOTAL WELL DEPTH:	21.35 m		
TOTAL BOREHOLE DEPTH:	20.5 m	DRILLING CO.:	Chilako
SITE LOCATION:	SE-25-41-27-4	RIG TYPE:	
SITE NAME:	CFO-4	METHOD OF DRILLING:	
DATES DRILLED:	February/March 2010	SAMPLING METHODS:	

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: moist, fill			TOC
		CLAY LOAM: moist to very moist, fill			Ground Surface
		CLAY: to SILTY CLAY, moist lacustrine			
		CLAY TILL: clay loam, moist, pebbles, coal chips, sand streaks			
5		CLAY TILL: clay loam, very moist, pebbles, coal chips, sand streaks			
		SANDSTONE: fine grained, dry, olive			
		SANDSTONE: saturated, soft bedrock, olive brown, free water	7.5-8.0		
		SANDSTONE: moist, olive with orange brown layers, soft bedrock	9.0-9.5		Bentonite
10					Pipe
		SANDSTONE: dry, olive brown, very hard, cemented layers throughout, hard layers were light grey, fine grained	10.5-11.0		
			12.0-12.5		
		SANDSTONE: soft bedrock, olive brown with orange brown layers, free water			
		SANDSTONE: yellow brown, very hard, borehole produing constant water flow	13.5-14.0		
15		SANDSTONE: brey to brown to olive, medium hardness	15.0-15.5		
			16.5-17.0		
			18.0-18.5		
		SANDSTONE: medium grained, grey, soft bedrock	19.5-20.0		Sand Pack
20					PVC Screen

NOTES:

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NORTHING (m):	5825946.3	GROUND ELEVATION (masl):	858.15
EASTING (m):	313574.6	TOC ELEVATION (masl):	859.00

PROJECT:	LMIGA	WELL ID:	**B-P10-15w**
TOTAL WELL DEPTH:	15.85 m		
TOTAL BOREHOLE DEPTH:	15.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	SE-25-41-27-4	RIG TYPE:	
SITE NAME:	CFO-4	METHOD OF DRILLING:	
DATES DRILLED:	February/March 2010	SAMPLING METHODS:	

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: slightly moist, fill		TOC	
				Ground Surface	
		CLAY LOAM: to CLAY, slightly moist, lacustrine,			
		CLAY LOAM: to CLAY, moist, lacustrine, high plastic clay layers			
		CLAY TILL: sandy clay loam, moist			
		SANDY LOAM: very moist, some gravel, sand layers mixed with sandstone chunks			
5		SANDY LOAM: moist, some gravel, sand layers			
		SANDY LOAM: moist, sandstone chunks, oxidized			
		SANDSTONE: moist, weathered, soft bedrock, saturated @ bedrock contact and along fractures		Bentonite	
		water		Pipe	
		SANDSTONE: moist, very hard, yellow brown			
		SANDSTONE: slightly moist, olive grey, medium hardness			
10		SANDSTONE: moist, yellow brown			
		water			
		SANDSTONE: dry, very hard			
		SANDSTONE: moist, grey, medium hardness			
				Sand Pack	
				PVC Screen	
15					
20					

NOTES: Borehole not logged above 7.5 m, lithology from B-P10-20w

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NORTHING (m):	5826004.6	GROUND ELEVATION (masl):	857.99
EASTING (m):	313528.2	TOC ELEVATION (masl):	858.85

PROJECT:	LMIGA	WELL ID:	**B-P10-20w**
TOTAL WELL DEPTH:	20.85 m		
TOTAL BOREHOLE DEPTH:	20.0 m	DRILLING CO.:	Chilako
SITE LOCATION:	SE-25-41-27-4	RIG TYPE:	
SITE NAME:	CFO-4	METHOD OF DRILLING:	
DATES DRILLED:	February/March 2010	SAMPLING METHODS:	

DEPTH (mbgs)	SOIL SYMBOLS	SOIL DESCRIPTION	SAMPLE	WELL COMPLETION	WELL DESCRIPTION
0		CLAY LOAM: slightly moist, fill			TOC; Ground Surface
		CLAY LOAM: to CLAY, slightly moist, lacustrine,	1.2-1.5		
		CLAY LOAM: to CLAY, moist, lacustrine, high plasticity	2.7-3.0		
		CLAY TILL: sandy clay loam, moist			
		SANDY LOAM: very moist, some gravel, sand layers mixed with sandstone chunks	4.2-4.5		
5		SANDY LOAM: moist, some gravel, sand layers			
		SANDY LOAM: moist, sandstone chunks, oxidized	5.6-6.0		
		SANDSTONE: moist, weathered, soft bedrock, saturated @ bedrock contact and along fractures	7.2-7.5		
		SANDSTONE: moist, very hard, oxidized			
		SANDSTONE: slightly moist, oxidized	8.6-9.0		
		SANDSTONE: slightly moist, yellow brown, less oxidation, more cemented			Bentonite; Pipe
10		SANDSTONE: dry, olive grey, medium hardness	10.0-10.5		
		SANDSTONE: dry, yellow brown, medium hardness	11.7-12.0		
		SANDSTONE: dry, grey, very hard, auger refusal, water in borehole	13.3-13.5		
		SANDSTONE: water bearing, olive, soft bedrock	14.5-15.0		
15			17.0-18.0		
		SANDSTONE: moist, grey, medium hardness	19.5-20.0		Sand Pack; PVC Screen
20					

NOTES:

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NORTHING (m):	5825993.4	GROUND ELEVATION (masl):	857.99
EASTING (m):	313527.9	TOC ELEVATION (masl):	858.84