SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Tuesday, March 15, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 09 March 2011
LR Report: **CA10059-MAR11**
Reference: Wk#7

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 7
Sample Date & Time			09-Mar-11
Hum Cell Leachate Volume [mL]	---	---	934
pH [units]	11-Mar-11	09:29	7.05
Conductivity [µS/cm]	11-Mar-11	09:29	20
Acidity [mg/L as CaCO3]	11-Mar-11	09:29	< 2
Alkalinity [mg/L as CaCO3]	11-Mar-11	09:29	9
Sulphate [mg/L]	15-Mar-11	13:19	1.6

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Friday, February 18, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 15 February 2011
LR Report: **CA10239-FEB11**
Reference: Wk#7

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: F33 Comb Tls Wk#7
Sample Date & Time			Date:N/A
Conductivity [uS/cm]	17-Feb-11	14:50	160

Dianne Griffin
Project Specialist

OnLine LIMS

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Wednesday, February 16, 2011

Date Rec. : 09 February 2011
LR Report: **CA10054-FEB11**
Reference: Wk#8

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 8	6: Master TIsF33 Wk# 8	7: Comb TIsF36 Wk# 8	8: Comb TIsF37 Wk# 8	9: Comb TIs Wk# 8	10: XPS PP Comp 1 Conc Wk# 8	11: XPS PP Comp 1 TIs Wk# 8
Sample Date & Time			09-Feb-11	09-Feb-11	09-Feb-11	09-Feb-11	09-Feb-11	09-Feb-11	09-Feb-11
Hum Cell Leachate Volume [mLs]	---	---	919	914	917	934	943	988	951
pH [no unit]	11-Feb-11	15:41	8.01	7.14	7.80	7.27	7.24	7.52	7.11
Conductivity [uS/cm]	11-Feb-11	15:41	103	21	61	27	31	26	30
Acidity [mg/L as CaCO3]	11-Feb-11	15:41	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	11-Feb-11	15:41	49	9	31	9	10	11	8
Sulphate [mg/L]	16-Feb-11	13:58	1.6	0.9	0.7	1.7	2.0	0.5	3.9

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Wednesday, March 23, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 16 March 2011
LR Report: **CA10095-MAR11**
Reference: Wk#8

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 8
Sample Date & Time			16-Mar-11
Hum Cell Leachate Volume [mL]	---	---	925
pH [units]	18-Mar-11	16:42	7.14
Conductivity [µS/cm]	18-Mar-11	16:42	4
Acidity [mg/L as CaCO3]	18-Mar-11	16:42	< 2
Alkalinity [mg/L as CaCO3]	18-Mar-11	16:42	9
Sulphate [mg/L]	22-Mar-11	21:40	1.7

Dianne Griffin
Project Specialist

OnLine LIMS

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Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Monday, February 28, 2011

Date Rec. : 16 February 2011
LR Report: **CA10083-FEB11**
Reference: Wk#9

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk#9	6: Master TIsF33 Wk#9	7: Comb TIsF36 Wk#9	8: Comb TIsF37 Wk#9	9: Comb Tls Wk#9	10: XPS PP Comp 1 Conc Wk#9	11: XPS PP Comp 1 Tls Wk#9
Sample Date & Time			16-Feb-11	16-Feb-11	16-Feb-11	16-Feb-11	16-Feb-11	16-Feb-11	16-Feb-11
Hum Cell Leachate Volume [mLs]	---	---	865	937	929	931	945	905	944
pH [no unit]	21-Feb-11	18:27	7.83	7.12	7.53	7.44	7.23	7.34	7.07
Conductivity [uS/cm]	21-Feb-11	18:27	99	24	51	44	28	20	27
Acidity [mg/L as CaCO3]	21-Feb-11	18:27	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	21-Feb-11	18:27	44	9	24	15	10	9	8
Sulphate [mg/L]	25-Feb-11	14:50	1.8	0.8	0.4	2.7	1.7	0.5	3.4

Dianne Griffin
Project Specialist

OnLine LIMS

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Thursday, March 31, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 23 March 2011
LR Report: **CA10127-MAR11**
Reference: Wk#9

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk#9
Sample Date & Time			23-Mar-11
Hum Cell Leachate Volume [mL]	---	---	947
pH [units]	25-Mar-11	10:29	6.56
Conductivity [µS/cm]	25-Mar-11	10:29	29
Acidity [mg/L as CaCO3]	25-Mar-11	10:29	< 2
Alkalinity [mg/L as CaCO3]	25-Mar-11	10:29	10
Sulphate [mg/L]	30-Mar-11	09:25	1.9

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Monday, April 25, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 15 April 2011
LR Report: **CA11271-APR11**
Reference: Wk#9

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk#9
Sample Date & Time			
pH [units]	19-Apr-11	11:36	7.24

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Wednesday, March 09, 2011

Date Rec. : 23 February 2011
LR Report: **CA10115-FEB11**
Reference: Wk#10

Copy: #1

CERTIFICATE OF ANALYSIS

RFinal Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 10	6: Master Tls Wk# 10	7: F33 Comb Tls Wk# 10	8: F36 Comb Tls Wk# 10	9: F37 Comb Tls Wk# 10	10: XPS PP Comp 1 Conc Wk# 10	11: XPS PP Comp 1 Tls Wk# 10
Sample Date & Time			23-Feb-11	23-Feb-11	23-Feb-11	23-Feb-11	23-Feb-11	23-Feb-11	23-Feb-11
Hum Cell Leachate Volume [mLs]	---	---	961	926	916	936	935	940	949
pH [no unit]	28-Feb-11	09:16	7.88	7.08	7.32	7.26	6.95	6.90	6.86
Conductivity [uS/cm]	28-Feb-11	09:16	99	26	34	40	29	22	28
Acidity [mg/L as CaCO3]	28-Feb-11	09:16	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	28-Feb-11	09:16	46	10	15	13	10	9	8
Sulphate [mg/L]	01-Mar-11	20:49	1.5	0.9	0.3	2.2	1.6	0.6	3.2
Mercury [mg/L]	28-Feb-11	13:16	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	02-Mar-11	10:43	< 0.00001	< 0.00001	0.00002	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Aluminum [mg/L]	26-Feb-11	16:25	0.08	0.02	0.12	0.08	0.20	0.06	0.06
Arsenic [mg/L]	02-Mar-11	10:43	0.0032	0.0002	0.0006	0.0007	0.0004	< 0.0002	< 0.0002
Boron [mg/L]	02-Mar-11	10:43	0.0296	0.0064	0.0042	0.0141	0.0086	0.0031	0.0072
Barium [mg/L]	02-Mar-11	10:43	0.00356	0.00071	0.00123	0.00129	0.00134	0.00098	0.00057
Beryllium [mg/L]	02-Mar-11	10:43	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00002	< 0.00002	< 0.00002
Bismuth [mg/L]	02-Mar-11	10:43	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	26-Feb-11	16:25	15.6	2.80	3.89	3.27	2.91	3.91	2.31
Cadmium [mg/L]	02-Mar-11	10:43	0.000058	0.000012	0.000024	0.000122	0.000036	0.000065	0.000019
Cobalt [mg/L]	02-Mar-11	10:43	0.000055	0.000028	0.000036	0.000024	0.000029	0.000032	0.000021
Chromium [mg/L]	02-Mar-11	10:43	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper [mg/L]	02-Mar-11	10:43	0.0006	< 0.0005	< 0.0005	0.0006	0.0008	< 0.0005	< 0.0005
Iron [mg/L]	26-Feb-11	16:25	0.077	0.031	0.250	0.147	0.373	0.188	0.077
Potassium [mg/L]	26-Feb-11	16:25	1.18	0.496	1.53	2.09	1.23	0.445	1.41

OnLine LIMS

SGS Canada Inc.
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Project : CALR-11806-007
LR Report : **CA10115-FEB11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 10	6: Master Tls Wk# 10	7: F33 Comb Tls Wk# 10	8: F36 Comb Tls Wk# 10	9: F37 Comb Tls Wk# 10	10: XPS PP Comp 1 Conc Wk# 10	11: XPS PP Comp 1 Tls Wk# 10
Lithium [mg/L]	02-Mar-11	10:43	0.004	0.001	0.003	0.004	0.002	< 0.001	0.001
Magnesium [mg/L]	26-Feb-11	16:25	1.41	0.403	0.774	0.670	0.558	0.395	0.413
Manganese [mg/L]	02-Mar-11	10:43	0.0317	0.0468	0.0714	0.0444	0.0485	0.120	0.0250
Molybdenum [mg/L]	02-Mar-11	10:43	0.00202	0.00334	0.00057	0.00404	0.00252	0.00097	0.00395
Sodium [mg/L]	26-Feb-11	16:25	1.77	0.81	0.50	1.87	1.29	0.08	1.27
Nickel [mg/L]	02-Mar-11	10:43	0.0003	0.0002	0.0006	0.0007	0.0008	0.0007	0.0002
Lead [mg/L]	02-Mar-11	10:43	0.00013	0.00006	0.00011	0.00008	0.00018	0.00015	0.00003
Antimony [mg/L]	02-Mar-11	10:43	0.0009	0.0003	0.0003	0.0003	< 0.0002	0.0006	0.0003
Selenium [mg/L]	02-Mar-11	10:43	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Silica [mg/L]	26-Feb-11	16:25	2.44	0.52	1.01	0.86	0.96	0.29	0.48
Tin [mg/L]	02-Mar-11	10:43	0.00481	0.00045	0.00068	0.00066	0.00075	0.00060	0.00065
Strontium [mg/L]	26-Feb-11	16:25	0.0538	0.0073	0.0107	0.0110	0.0063	0.0087	0.0058
Thorium [mg/L]	02-Mar-11	10:43	0.000060	0.000016	0.000079	0.000043	0.000117	0.000393	0.000052
Titanium [mg/L]	02-Mar-11	10:43	0.0006	0.0002	0.0010	0.0006	0.0015	0.0004	0.0003
Thallium [mg/L]	02-Mar-11	10:43	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Uranium [mg/L]	02-Mar-11	10:43	0.00376	0.000770	0.000701	0.00131	0.000837	0.000558	0.000469
Vanadium [mg/L]	02-Mar-11	10:43	0.00008	< 0.00003	< 0.00003	0.00004	< 0.00003	< 0.00003	< 0.00003
Yttrium [mg/L]	02-Mar-11	10:43	0.00135	0.000324	0.00226	0.00127	0.00342	0.00418	0.000558
Zinc [mg/L]	02-Mar-11	10:43	0.002	0.002	0.003	0.002	0.003	0.002	0.002
Zirconium [mg/L]	02-Mar-11	10:43	0.00160	0.00018	0.00558	0.00451	0.00392	0.00025	0.00065

Radionuclides subcontracted to Becquerel Laboratories.

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Thursday, April 07, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 30 March 2011
LR Report: **CA10248-MAR11**
Reference: Wk#10

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 10
Sample Date & Time			30-Mar-11
Hum Cell Leachate Volume [mL]	---	---	931
pH [units]	01-Apr-11	16:47	7.00
Conductivity [µS/cm]	01-Apr-11	16:47	27
Acidity [mg/L as CaCO3]	01-Apr-11	16:47	< 2
Alkalinity [mg/L as CaCO3]	01-Apr-11	16:47	9
Sulphate [mg/L]	05-Apr-11	15:44	1.9
Mercury [mg/L]	01-Apr-11	13:12	< 0.0001
Silver [mg/L]	07-Apr-11	09:47	< 0.00001
Aluminum [mg/L]	01-Apr-11	07:58	0.04
Arsenic [mg/L]	07-Apr-11	09:47	< 0.0002
Boron [mg/L]	07-Apr-11	09:47	0.0068
Barium [mg/L]	07-Apr-11	09:47	0.00038
Beryllium [mg/L]	07-Apr-11	09:47	< 0.00002
Bismuth [mg/L]	07-Apr-11	09:47	< 0.00001
Calcium [mg/L]	01-Apr-11	07:58	2.10
Cadmium [mg/L]	07-Apr-11	09:47	< 0.000003
Cobalt [mg/L]	07-Apr-11	09:47	0.000024
Chromium [mg/L]	07-Apr-11	09:47	< 0.0005
Copper [mg/L]	07-Apr-11	09:47	< 0.0005
Iron [mg/L]	01-Apr-11	07:58	0.011
Potassium [mg/L]	01-Apr-11	07:58	1.90
Lithium [mg/L]	07-Apr-11	09:47	< 0.001
Magnesium [mg/L]	01-Apr-11	07:58	0.520
Manganese [mg/L]	07-Apr-11	09:47	0.0277
Molybdenum [mg/L]	07-Apr-11	09:47	0.00292
Sodium [mg/L]	01-Apr-11	07:58	1.38
Nickel [mg/L]	07-Apr-11	09:47	0.0001
Lead [mg/L]	07-Apr-11	09:47	< 0.00002

OnLine LIMS

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

LR Report : **CA10248-MAR11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 10
Antimony [mg/L]	07-Apr-11	09:47	0.0003
Selenium [mg/L]	07-Apr-11	09:47	< 0.001
Silicon [mg/L]	01-Apr-11	07:58	0.32
Tin [mg/L]	07-Apr-11	09:47	0.00015
Strontium [mg/L]	01-Apr-11	07:58	0.0053
Thorium [mg/L]	07-Apr-11	09:47	< 0.000004
Titanium [mg/L]	07-Apr-11	09:47	< 0.0001
Thallium [mg/L]	07-Apr-11	09:47	< 0.00002
Uranium [mg/L]	07-Apr-11	09:47	0.000320
Vanadium [mg/L]	07-Apr-11	09:47	< 0.00003
Yttrium [mg/L]	07-Apr-11	09:47	0.000158
Zinc [mg/L]	07-Apr-11	09:47	< 0.001
Zirconium [mg/L]	07-Apr-11	09:47	0.00042

Radionuclides subcontracted to Becquerel Laboratories.

Dianne Griffin
Project Specialist

OnLine LIMS

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00255.0

Date: 07-Apr-2011

Lakefield Research Ltd.

185 Concession St., Postal Bag 4300
Lakefield, ON, K0L 2H0

Phone: (705) 652-2038
FAX: (705) 652-1918

attn: Dianne Griffin

Client Ref.
Feb 11185
P.O: 55876

7 water samples Sampled: 23-Feb-2011 Received: 01-Mar-2011

Results of Analysis

Sample	Test	Result	Units	Date	Method
Master Conc Wk#10	Ra-228	< 0.1	Bq/l	01-Apr-2011	GFPC
Master Tls Wk#10	Ra-228	< 0.1	Bq/l	01-Apr-2011	GFPC
F33 Comb Tls Wk#10	Ra-228	< 0.1	Bq/l	01-Apr-2011	GFPC
F36 Comb Tls Wk#10	Ra-228	0.1	Bq/l	01-Apr-2011	GFPC
F37 Camb Tls Wk#10	Ra-228	< 0.1	Bq/l	01-Apr-2011	GFPC
XPS PP Comp 1 Conc Wk#10	Ra-228	< 0.1	Bq/l	01-Apr-2011	GFPC
XPS PP Comp 1 Tls Wk#10	Ra-228	< 0.1	Bq/l	01-Apr-2011	GFPC
Master Conc Wk#10	Ra-226	< 0.01	Bq/l	15-Mar-2011	ALPHA
Master Tls Wk#10	Ra-226	< 0.01	Bq/l	15-Mar-2011	ALPHA
F33 Comb Tls Wk#10	Ra-226	0.02	Bq/l	16-Mar-2011	ALPHA
F36 Comb Tls Wk#10	Ra-226	< 0.02	Bq/l	16-Mar-2011	ALPHA
F37 Camb Tls Wk#10	Ra-226	0.02	Bq/l	15-Mar-2011	ALPHA
XPS PP Comp 1 Conc Wk#10	Ra-226	< 0.01	Bq/l	16-Mar-2011	ALPHA
XPS PP Comp 1 Tls Wk#10	Ra-226	< 0.01	Bq/l	16-Mar-2011	ALPHA
Master Conc Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC
Master Tls Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC
F33 Comb Tls Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC
F36 Comb Tls Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC
F37 Camb Tls Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC
XPS PP Comp 1 Conc Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC
XPS PP Comp 1 Tls Wk#10	Pb-210	< 0.1	Bq/l	14-Mar-2011	GFPC

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00255.0

Date: 07-Apr-2011

Methods:	GFPC	BQ-RAD-GFPC	gas-flow proportional counting
	ALPHA	BQ-RAD-ALPHA	alpha-particle spectrometry

Units: Bq/l Becquerels per litre

These results relate only to the samples analysed and only to the items tested.

07-Apr-2011 approved by:

Donald D. Burgess PhD
Senior Scientist, Division Supervisor

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00463.0

Date: 17-May-2011

Lakefield Research Ltd.

185 Concession St., Postal Bag 4300
Lakefield, ON, K0L 2H0

Phone: (705) 652-2038
FAX: (705) 652-1918

Client Ref.
Mar 10248.R11

attn: Brian Graham

1 water sample Received: 13-Apr-2011

Results of Analysis

Sample	Test	Result	Units	Date	Method
XPS PP Comp 2 Tls WK#10	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
XPS PP Comp 2 Tls WK#10	Ra-226	< 0.01	Bq/l	29-Apr-2011	ALPHA
XPS PP Comp 2 Tls WK#10	Ra-228	0.3	Bq/l	28-Apr-2011	GFPC

Methods: GFPC BQ-RAD-GFPC gas-flow proportional counting
ALPHA BQ-RAD-ALPHA alpha-particle spectrometry

Units: Bq/l Becquerels per litre

These results relate only to the samples analysed and only to the items tested.

17-May-2011 approved by: _____
Donald D. Burgess PhD
Senior Scientist, Division Supervisor

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Thursday, March 17, 2011

Date Rec. : 02 March 2011
LR Report: **CA10024-MAR11**
Reference: Wk#11

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master ConcWk# 11	6: Master TlsWk# 11	7: F33 Comb TlsWk# 11	8: F36 Comb TlsWk# 11	9: F37 Comb TlsWk# 11	10: XPS PP Comp 1 ConcWk# 11	11: XPS PP Comp 1 TlsWk# 11
Sample Date & Time			02-Mar-11	02-Mar-11	02-Mar-11	02-Mar-11	02-Mar-11	02-Mar-11	02-Mar-11
Hum Cell Leachate Volume [mL]	---	---	910	904	920	920	947	942	952
pH [units]	03-Mar-11	12:36	8.12	7.05	7.48	7.38	7.32	7.28	7.18
Conductivity [µS/cm]	03-Mar-11	12:36	75	15	28	28	23	19	23
Acidity [mg/L as CaCO3]	03-Mar-11	12:36	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	03-Mar-11	12:36	44	7	15	12	10	9	9
Sulphate [mg/L]	09-Mar-11	11:55	1.4	0.8	0.4	1.8	1.6	0.7	3.0

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Wednesday, April 13, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 06 April 2011
LR Report: **CA10032-APR11**
Reference: Wk#11

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 11
Sample Date & Time			06-Apr-11
Hum Cell Leachate Volume [mL]	---	---	926
pH [units]	07-Apr-11	14:32	7.30
Conductivity [µS/cm]	07-Apr-11	14:32	30
Acidity [mg/L as CaCO3]	07-Apr-11	14:32	< 2
Alkalinity [mg/L as CaCO3]	07-Apr-11	14:32	10
Sulphate [mg/L]	12-Apr-11	21:45	2.3

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Monday, March 21, 2011

Date Rec. : 09 March 2011
LR Report: **CA10054-MAR11**
Reference: Wk#12

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 12	6: Master Tls Wk# 12	7: F33 Comb Tls Wk# 12	8: F36 Comb Tls Wk# 12	9: F37 Comb Tls Wk# 12	10: XPS PP Comp 1 Conc Wk# 12	11: XPS PP Comp 1 Tls Wk# 12
Sample Date & Time			09-Mar-11	09-Mar-11	09-Mar-11	09-Mar-11	09-Mar-11	09-Mar-11	09-Mar-11
Hum Cell Leachate Volume [mL]	---	---	856	899	849	969	944	955	955
pH [units]	11-Mar-11	13:32	7.75	6.89	8.06	6.91	6.97	6.97	6.92
Conductivity [µS/cm]	11-Mar-11	13:32	67	15	157	20	20	17	27
Acidity [mg/L as CaCO3]	11-Mar-11	13:32	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	11-Mar-11	13:32	45	8	71	10	10	10	8
Sulphate [mg/L]	16-Mar-11	11:16	1.6	0.7	2.7	1.3	1.4	0.8	2.9

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
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Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Tuesday, May 24, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 13 April 2011
LR Report: **CA10065-APR11**
Reference: Wk#12

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 12
Sample Date & Time			13-Apr-11
Hum Cell Leachate Volume [mL]	---	---	927
pH [units]	18-Apr-11	14:37	7.57
Conductivity [µS/cm]	19-May-11	09:19	40
Acidity [mg/L as CaCO3]	18-Apr-11	14:37	< 2
Alkalinity [mg/L as CaCO3]	18-Apr-11	14:37	13
Sulphate [mg/L]	19-Apr-11	22:23	3.2

Revised conductivity result May 24/11

Dianne Griffin
Project Specialist

OnLine LIMS

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Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Wednesday, March 23, 2011

Date Rec. : 16 March 2011
LR Report: **CA10090-MAR11**
Reference: Wk#13

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 13	6: Master Tls Wk# 13	7: F33 Comb Tls Wk# 13	8: F36 Comb Tls Wk# 13	9: F37 Comb Tls Wk# 13	10: XPS PP Comp 1 Conc Wk# 13	11: XPS PP Comp 1 Tls Wk# 13
Sample Date & Time			16-Mar-11	16-Mar-11	16-Mar-11	16-Mar-11	16-Mar-11	16-Mar-11	16-Mar-11
Hum Cell Leachate Volume [mL]	---	---	858	881	877	926	933	937	940
pH [units]	21-Mar-11	12:40	7.97	6.90	8.06	7.14	7.02	6.98	6.99
Conductivity [µS/cm]	21-Mar-11	12:40	67	12	141	4	4	15	18
Acidity [mg/L as CaCO3]	21-Mar-11	12:40	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	21-Mar-11	12:40	46	6	68	11	9	9	8
Sulphate [mg/L]	23-Mar-11	11:51	1.4	0.6	0.6	1.2	1.3	0.7	2.6

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Wednesday, May 11, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 20 April 2011
LR Report: **CA10154-APR11**
Reference: Wk#13

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 13
Sample Date & Time			20-Apr-11
Hum Cell Leachate Volume [mL]	---	---	925
pH [units]	05-May-11	13:38	7.14
Conductivity [µS/cm]	26-Apr-11	09:13	32
Acidity [mg/L as CaCO3]	26-Apr-11	09:13	< 2
Alkalinity [mg/L as CaCO3]	26-Apr-11	09:13	9
Sulphate [mg/L]	27-Apr-11	16:23	2.3

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Tuesday, May 24, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 15 April 2011
LR Report: **CA11273-APR11**
Reference: Wk#13

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample Date & Time	Conductivity uS/cm
3: Analysis Approval Date		20-May-11
4: Analysis Approval Time		08:47
8: F36 Comb Tls Wk# 13	Date:N/A	29
9: F37 Comb Tls Wk# 13	Date:N/A	26

Dianne Griffin
Project Specialist

OnLine LIMS

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Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Tuesday, March 29, 2011

Date Rec. : 23 March 2011
LR Report: **CA10122-MAR11**
Reference: Wk#14

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk#14	6: Master Tls Wk#14	7: F33 Comb Tls Wk#14	8: F36 Comb Tls Wk#14	9: F37 Comb Tls Wk#14	10: XPS PP Comp 1 Conc Wk#14	11: XPS PP Comp 1 Tls Wk#14
Sample Date & Time			23-Mar-11	23-Mar-11	23-Mar-11	23-Mar-11	23-Mar-11	23-Mar-11	23-Mar-11
Hum Cell Leachate Volume [mL]	---	---	873	885	888	934	934	936	940
pH [units]	28-Mar-11	09:17	7.15	6.38	7.21	6.65	6.59	6.56	6.37
Conductivity [µS/cm]	28-Mar-11	09:17	98	16	101	27	24	21	23
Acidity [mg/L as CaCO3]	28-Mar-11	09:17	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	28-Mar-11	09:17	47	6	66	10	9	9	8
Sulphate [mg/L]	28-Mar-11	13:07	1.0	0.6	1.0	1.2	1.3	0.7	2.4

Dianne Griffin
Project Specialist

OnLine LIMS

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Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Wednesday, May 11, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 27 April 2011
LR Report: **CA11080-APR11**
Reference: Wk#14

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 14
Sample Date & Time			27-Apr-11
Hum Cell Leachate Volume [mL]	---	---	951
pH [units]	28-Apr-11	15:50	7.29
Conductivity [µS/cm]	28-Apr-11	15:50	25
Acidity [mg/L as CaCO3]	28-Apr-11	15:50	< 2
Alkalinity [mg/L as CaCO3]	28-Apr-11	15:50	10
Sulphate [mg/L]	05-May-11	16:02	2.4

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Monday, April 25, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 15 April 2011
LR Report: **CA11272-APR11**
Reference: Wk#14

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample Date & Time	pH units
3: Analysis Approval Date		19-Apr-11
4: Analysis Approval Time		11:36
5: Master Conc Wk#14	Date:N/A	8.03
6: Master Tls Wk#14	Date:N/A	6.87
7: F33 Comb Tls Wk#14	Date:N/A	8.00
8: F36 Comb Tls Wk#14	Date:N/A	7.17
9: F37 Comb Tls Wk#14	Date:N/A	7.25
10: XPS PP Comp 1 Conc Wk#14	Date:N/A	7.12
11: XPS PP Comp 1 Tls Wk#14	Date:N/A	7.11

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Friday, May 13, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 04 May 2011
LR Report: **CA10042-MAY11**
Reference: WK#15

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 15
Sample Date & Time			04-May-11
Hum Cell Leachate Volume [mL]	---	---	941
pH [units]	09-May-11	13:08	7.18
Conductivity [µS/cm]	09-May-11	13:08	23
Acidity [mg/L as CaCO3]	09-May-11	13:08	< 2
Alkalinity [mg/L as CaCO3]	09-May-11	13:08	9
Sulphate [mg/L]	11-May-11	15:27	200
Mercury [mg/L]	06-May-11	15:07	< 0.0001
Silver [mg/L]	06-May-11	08:43	< 0.00001
Aluminum [mg/L]	09-May-11	12:32	0.02
Arsenic [mg/L]	06-May-11	08:43	< 0.0002
Boron [mg/L]	06-May-11	08:43	0.0060
Barium [mg/L]	06-May-11	08:43	0.00038
Beryllium [mg/L]	06-May-11	08:43	< 0.00002
Bismuth [mg/L]	06-May-11	08:43	< 0.00001
Calcium [mg/L]	09-May-11	12:32	2.02
Cadmium [mg/L]	06-May-11	08:43	0.000011
Cobalt [mg/L]	06-May-11	08:43	0.000012
Chromium [mg/L]	06-May-11	08:43	< 0.0005
Copper [mg/L]	06-May-11	08:43	< 0.0005
Iron [mg/L]	09-May-11	12:32	0.011
Potassium [mg/L]	09-May-11	12:32	1.61
Lithium [mg/L]	06-May-11	08:43	< 0.001
Magnesium [mg/L]	09-May-11	12:32	0.547
Manganese [mg/L]	06-May-11	08:43	0.0233
Molybdenum [mg/L]	06-May-11	08:43	0.00240
Sodium [mg/L]	09-May-11	12:32	1.21
Nickel [mg/L]	06-May-11	08:43	0.0001
Lead [mg/L]	06-May-11	08:43	< 0.00002

OnLine LIMS

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

LR Report : **CA10042-MAY11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 15
Antimony [mg/L]	06-May-11	08:43	0.0003
Selenium [mg/L]	06-May-11	08:43	< 0.001
Silicon [mg/L]	09-May-11	12:32	0.30
Tin [mg/L]	06-May-11	08:43	0.00016
Strontium [mg/L]	09-May-11	12:33	0.0051
Thorium [mg/L]	06-May-11	08:43	0.000009
Titanium [mg/L]	06-May-11	08:43	< 0.0001
Thallium [mg/L]	06-May-11	08:43	< 0.00002
Uranium [mg/L]	06-May-11	08:43	0.000288
Vanadium [mg/L]	06-May-11	08:43	< 0.00003
Yttrium [mg/L]	06-May-11	08:44	0.000145
Zinc [mg/L]	06-May-11	08:44	< 0.001
Zirconium [mg/L]	06-May-11	08:44	0.00050

Radionuclides subcontracted to Becquerel Laboratories.

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Friday, May 27, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 20 May 2011
LR Report: **CA10431-MAY11**
Reference: Wk#15

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample Date & Time	Sulphate mg/L
3: Analysis Approval Date		24-May-11
4: Analysis Approval Time		06:20
5: XPS PP Comp 2 Tls Wk# 15	04-May-11	2.1

Dianne Griffin
Project Specialist

OnLine LIMS

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00464.0

Date: 17-May-2011

Lakefield Research Ltd.

185 Concession St., Postal Bag 4300
Lakefield, ON, K0L 2H0

Phone: (705) 652-2038
FAX: (705) 652-1918

Client Ref.
Mar 10243.R11

attn: Brian Graham

7 water samples Received: 13-Apr-2011

Results of Analysis

Sample	Test	Result	Units	Date	Method
Master Conc WK#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
Master Tls WK#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
F33 Comb Tls WK#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
F36 Comb Tls WK#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
F37 Comb Tls WK#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
XPS PP Comp 1 Conc W#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
XPS PP Comp 1 Tls W#15	Pb-210	< 0.1	Bq/l	10-May-2011	GFPC
Master Conc WK#15	Ra-226	0.01	Bq/l	29-Apr-2011	ALPHA
Master Tls WK#15	Ra-226	0.01	Bq/l	29-Apr-2011	ALPHA
F33 Comb Tls WK#15	Ra-226	< 0.01	Bq/l	29-Apr-2011	ALPHA
F36 Comb Tls WK#15	Ra-226	< 0.01	Bq/l	29-Apr-2011	ALPHA
F37 Comb Tls WK#15	Ra-226	< 0.01	Bq/l	29-Apr-2011	ALPHA
XPS PP Comp 1 Conc W#15	Ra-226	< 0.01	Bq/l	29-Apr-2011	ALPHA
XPS PP Comp 1 Tls W#15	Ra-226	< 0.01	Bq/l	29-Apr-2011	ALPHA
Master Conc WK#15	Ra-228	0.2	Bq/l	28-Apr-2011	GFPC
Master Tls WK#15	Ra-228	< 0.1	Bq/l	28-Apr-2011	GFPC
F33 Comb Tls WK#15	Ra-228	< 0.1	Bq/l	28-Apr-2011	GFPC
F36 Comb Tls WK#15	Ra-228	< 0.1	Bq/l	28-Apr-2011	GFPC
F37 Comb Tls WK#15	Ra-228	0.2	Bq/l	28-Apr-2011	GFPC
XPS PP Comp 1 Conc W#15	Ra-228	0.1	Bq/l	28-Apr-2011	GFPC
XPS PP Comp 1 Tls W#15	Ra-228	0.2	Bq/l	28-Apr-2011	GFPC

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00464.0

Date: 17-May-2011

Methods:	GFPC	BQ-RAD-GFPC	gas-flow proportional counting
	ALPHA	BQ-RAD-ALPHA	alpha-particle spectrometry

Units: Bq/l Becquerels per litre

These results relate only to the samples analysed and only to the items tested.

17-May-2011 approved by: _____
Donald D. Burgess PhD
Senior Scientist, Division Supervisor

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00615.0

Date: 25-Jul-2011

Lakefield Research Ltd.

185 Concession St., Postal Bag 4300
Lakefield, ON, K0L 2H0

Phone: (705) 652-2038
FAX: (705) 652-1918

Client Ref.
May 10042.R11

attn: Brian Graham

1 water sample Sampled: 04-May-2011 Received: 10-May-2011

Results of Analysis

Sample	Test	Result	Units	Date	Method
XPS PP Comp 2 Tls WK#15	Ra-228	< 0.1	Bq/l	10-Jul-2011	GAMMA
XPS PP Comp 2 Tls WK#15	Ra-226	< 0.01	Bq/l	23-Jun-2011	ALPHA
XPS PP Comp 2 Tls WK#15	Pb-210	0.1	Bq/l	20-Jun-2011	GFPC

Methods:
GAMMA BQ-RAD-GAMMA gamma-ray spectrometry
ALPHA BQ-RAD-ALPHA alpha-particle spectrometry
GFPC BQ-RAD-GFPC gas-flow proportional counting

Units:
Bq/l Becquerels per litre

These results relate only to the samples analysed and only to the items tested.

25-Jul-2011 approved by: _____
Donald D. Burgess PhD
Senior Scientist, Division Supervisor

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Wednesday, April 13, 2011

Date Rec. : 06 April 2011
LR Report: **CA10027-APR11**
Reference: Wk#16

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk#16	6: Master Tls F33 Wk#16	7: Comb Tls F36 Wk#16	8: Comb Tls F37 Wk#16	9: Comb Tls Wk#16	10: XPS PP Comp 1 Conc Wk#16	11: XPS PP Comp 1 Tls Wk#16
Sample Date & Time			06-Apr-11	06-Apr-11	06-Apr-11	06-Apr-11	06-Apr-11	06-Apr-11	06-Apr-11
Hum Cell Leachate Volume [mL]	---	---	861	875	880	942	931	942	938
pH [units]	08-Apr-11	14:17	7.97	6.88	7.94	7.04	7.02	7.11	7.00
Conductivity [µS/cm]	08-Apr-11	14:17	81	6	96	20	23	5	6
Acidity [mg/L as CaCO3]	08-Apr-11	14:17	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	08-Apr-11	14:17	44	6	59	9	9	9	7
Sulphate [mg/L]	13-Apr-11	14:03	1.4	0.7	0.6	1.0	1.4	1.0	2.3

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Thursday, May 19, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 11 May 2011
LR Report: **CA10094-MAY11**
Reference: Wk#16

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 16
Sample Date & Time			11-May-11
Hum Cell Leachate Volume [mL]	---	---	940
pH [units]	18-May-11	16:33	7.25
Conductivity [µS/cm]	18-May-11	16:33	28
Acidity [mg/L as CaCO3]	18-May-11	16:33	< 2
Alkalinity [mg/L as CaCO3]	18-May-11	16:33	7
Sulphate [mg/L]	18-May-11	17:59	2.4

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Tuesday, May 17, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 05 May 2011
LR Report: **CA10213-MAY11**
Reference: Wk#16

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Conductivity µS/cm
3: Analysis Approval Date	09-May-11
4: Analysis Approval Time	11:12
5: Master Tls Wk#16	14
6: F37 Comb Tls Wk#16	20
7: XPS PP Comp 1 Tls Wk#16	19

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Monday, April 25, 2011

Date Rec. : 13 April 2011
LR Report: **CA10060-APR11**
Reference: Wk#17

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 17	6: Master Tls Wk# 17	7: F33 Comb Tls Wk# 17	8: F36 Comb Tls Wk# 17	9: F37 Comb Tls Wk# 17	10: XPS PP Comp 1 Conc Wk# 17	11: XPS PP Comp 1 Tls Wk# 17
Sample Date & Time			13-Apr-11	13-Apr-11	13-Apr-11	13-Apr-11	13-Apr-11	13-Apr-11	13-Apr-11
Hum Cell Leachate Volume [mL]	---	---	858	887	885	947	947	942	943
pH [units]	18-Apr-11	14:35	8.07	7.05	8.02	7.34	7.27	7.31	7.19
Conductivity [µS/cm]	18-Apr-11	14:35	75	4	88	21	4	16	18
Acidity [mg/L as CaCO3]	18-Apr-11	14:35	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	18-Apr-11	15:00	48	7	57	10	8	9	7
Sulphate [mg/L]	20-Apr-11	13:12	1.2	0.6	0.6	1.0	1.2	0.8	2.1

Dianne Griffin
Project Specialist

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Project : CALR-11806-007

Friday, May 27, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 18 May 2011
LR Report: **CA10128-MAY11**
Reference: Wk#17

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk#17
Sample Date & Time			18-May-11
Hum Cell Leachate Volume [mL]	---	---	930
pH [units]	25-May-11	16:21	7.48
Conductivity [µS/cm]	25-May-11	16:21	32
Acidity [mg/L as CaCO3]	25-May-11	16:21	< 2
Alkalinity [mg/L as CaCO3]	25-May-11	16:21	11
Sulphate [mg/L]	25-May-11	12:49	2.3

Dianne Griffin
Project Specialist

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Project : CALR-11806-007

Tuesday, May 17, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 05 May 2011
LR Report: **CA10214-MAY11**
Reference: Wk#17

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Conductivity µS/cm
3: Analysis Approval Date	09-May-11
4: Analysis Approval Time	11:12
5: Master Tls Wk# 17	15
6: F37 Comb Tls Wk# 17	20

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Monday, June 06, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 25 May 2011
LR Report: **CA10147-MAY11**
Reference: Wk#18

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 18
Sample Date & Time			25-May-11
Hum Cell Leachate Volume [mL]	---	---	950
pH [units]	30-May-11	09:46	7.39
Conductivity [µS/cm]	30-May-11	09:46	23
Acidity [mg/L as CaCO3]	30-May-11	09:46	< 2
Alkalinity [mg/L as CaCO3]	30-May-11	09:46	10
Sulphate [mg/L]	02-Jun-11	16:12	2.4

Dianne Griffin
Project Specialist

OnLine LIMS

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Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Wednesday, May 11, 2011

Date Rec. : 20 April 2011
LR Report: **CA10149-APR11**
Reference: Wk#18

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 18	6: Master Tls Wk# 18	7: F33 Comb Tls Wk# 18	8: F36 Comb Tls Wk# 18	9: F37 Comb Tls Wk# 18	10: XPS PP Comp 1 Conc Wk# 18	11: XPS PP Comp 1 Tls Wk# 18
Sample Date & Time			20-Apr-11	20-Apr-11	20-Apr-11	20-Apr-11	20-Apr-11	20-Apr-11	20-Apr-11
Hum Cell Leachate Volume [mL]	---	---	930	930	972	918	934	934	934
pH [units]	05-May-11	13:37	7.79	6.96	7.96	7.20	7.10	7.25	7.20
Conductivity [µS/cm]	28-Apr-11	12:13	86	20	122	24	128	22	23
Acidity [mg/L as CaCO3]	28-Apr-11	12:13	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	28-Apr-11	12:13	42	8	61	8	3	9	8
Sulphate [mg/L]	03-May-11	16:21	1.4	0.6	0.6	1.0	1.1	1.0	2.2

Dianne Griffin
Project Specialist

OnLine LIMS

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Project : CALR-11806-007

Thursday, May 19, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 16 May 2011
LR Report: **CA10359-MAY11**
Reference: Wk#18

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: F37 Comb Tls Wk# 18
Sample Date & Time			Date:N/A
Conductivity [µS/cm]	19-May-11	09:39	22

Dianne Griffin
Project Specialist

OnLine LIMS

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Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Friday, June 10, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 01 June 2011
LR Report: **CA10014-JUN11**
Reference: Wk#19

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk# 19
Sample Date & Time			01-Jun-11
Hum Cell Leachate Volume [mL]	---	---	960
pH [units]	06-Jun-11	16:58	7.35
Conductivity [µS/cm]	06-Jun-11	16:58	26
Acidity [mg/L as CaCO3]	06-Jun-11	16:58	< 2
Alkalinity [mg/L as CaCO3]	06-Jun-11	16:58	9
Sulphate [mg/L]	09-Jun-11	15:16	2.3

Dianne Griffin
Project Specialist

OnLine LIMS

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Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Wednesday, May 11, 2011

Date Rec. : 27 April 2011
LR Report: **CA11075-APR11**
Reference: Wk#19

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk# 19	6: Master Tls Wk# 19	7: F33 Comb Tls Wk# 19	8: F36 Comb Tls Wk# 19	9: F37 Comb Tls Wk# 19	10: XPS PP Comp 1 Conc Wk# 19	11: XPS PP Comp 1 Tls Wk# 19
Sample Date & Time			27-Apr-11	27-Apr-11	27-Apr-11	27-Apr-11	27-Apr-11	27-Apr-11	27-Apr-11
Hum Cell Leachate Volume [mL]	---	---	932	935	919	950	947	945	947
pH [units]	03-May-11	11:51	8.00	7.15	7.91	7.37	7.23	7.28	7.17
Conductivity [µS/cm]	03-May-11	11:51	66	18	108	29	22	19	20
Acidity [mg/L as CaCO3]	03-May-11	11:51	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	03-May-11	11:51	38	8	60	11	8	9	8
Sulphate [mg/L]	04-May-11	12:42	0.6	0.6	0.5	1.1	1.0	0.9	2.0

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
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Environmental Met
Attn : Barb Bowman

Project : CALR-11806-007

Tuesday, June 14, 2011

Date Rec. : 04 May 2011
LR Report: **CA10037-MAY11**
Reference: Wk#20

Copy: #2

CERTIFICATE OF ANALYSIS
Final Report - Reissue

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk#20	6: Master Tls Wk#20	7: F33 Comb Tls Wk#20	8: F36 Comb Tls Wk#20	9: F37 Comb Tls Wk#20	10: XPS PP Comp 1 Conc Wk#20	11: XPS PP Comp 1 Tls Wk#20
Sample Date & Time			04-May-11	04-May-11	04-May-11	04-May-11	04-May-11	04-May-11	04-May-11
Hum Cell Leachate Volume [mL]	---	---	995	930	440	958	951	955	965
pH [units]	09-May-11	13:05	7.86	7.07	7.74	7.17	7.09	7.34	7.03
Conductivity [µS/cm]	09-May-11	13:05	78	22	138	25	50	19	26
Acidity [mg/L as CaCO3]	09-May-11	13:05	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity [mg/L as CaCO3]	09-May-11	13:05	45	8	71	11	8	13	8
Sulphate [mg/L]	11-May-11	16:57	1.7	0.6	1.1	0.9	1.0	0.8	1.8
Mercury [mg/L]	06-May-11	15:07	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	06-May-11	08:42	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Aluminum [mg/L]	09-May-11	12:28	0.08	< 0.01	0.06	0.01	0.01	< 0.01	0.02
Arsenic [mg/L]	06-May-11	08:42	0.0012	< 0.0002	0.0040	0.0008	0.0002	< 0.0002	< 0.0002
Boron [mg/L]	06-May-11	08:42	0.0117	0.0035	0.0063	0.0076	0.0054	0.0034	0.0060
Barium [mg/L]	06-May-11	08:42	0.00354	0.00055	0.00833	0.00090	0.00050	0.00095	0.00049
Beryllium [mg/L]	06-May-11	08:42	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Bismuth [mg/L]	06-May-11	08:42	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	09-May-11	12:28	16.3	2.35	21.5	2.83	2.24	3.06	2.09
Cadmium [mg/L]	06-May-11	08:42	0.000007	0.000007	0.000047	0.000026	0.000008	< 0.000003	0.000021
Cobalt [mg/L]	06-May-11	08:42	0.000056	0.000030	0.000064	0.000026	0.000021	0.000033	0.000023
Chromium [mg/L]	06-May-11	08:42	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper [mg/L]	06-May-11	08:42	< 0.0005	< 0.0005	0.0007	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Iron [mg/L]	09-May-11	12:29	< 0.002	< 0.002	0.020	< 0.002	0.002	0.002	0.009
Potassium [mg/L]	09-May-11	12:29	1.16	0.376	6.30	1.67	0.860	0.401	1.11
Lithium [mg/L]	06-May-11	08:42	0.002	< 0.001	0.007	0.003	0.001	< 0.001	< 0.001

OnLine LIMS

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Project : CALR-11806-007
LR Report : **CA10037-MAY11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: Master Conc Wk#20	6: Master Tls Wk#20	7: F33 Comb Tls Wk#20	8: F36 Comb Tls Wk#20	9: F37 Comb Tls Wk#20	10: XPS PP Comp 1 Conc Wk#20	11: XPS PP Comp 1 Tls Wk#20
Magnesium [mg/L]	09-May-11	12:29	1.73	0.373	3.97	0.604	0.378	0.326	0.405
Manganese [mg/L]	06-May-11	08:42	0.0405	0.0344	0.122	0.0390	0.0385	0.0880	0.0331
Molybdenum [mg/L]	06-May-11	08:42	0.00140	0.00212	0.00242	0.00147	0.00102	0.00091	0.00201
Sodium [mg/L]	09-May-11	12:29	0.38	0.56	1.03	1.03	0.86	0.10	0.95
Nickel [mg/L]	06-May-11	08:42	0.0006	0.0001	0.0011	0.0003	0.0002	0.0006	0.0001
Lead [mg/L]	06-May-11	08:42	0.00004	0.00003	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Antimony [mg/L]	06-May-11	08:42	0.0007	0.0003	0.0005	0.0003	0.0002	0.0007	0.0003
Selenium [mg/L]	06-May-11	08:42	< 0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001
Silicon [mg/L]	09-May-11	12:29	1.45	0.40	4.71	0.56	0.37	0.20	0.37
Tin [mg/L]	06-May-11	08:42	0.00234	< 0.00001	0.00020	0.00005	0.00002	0.00090	0.00004
Strontium [mg/L]	09-May-11	12:29	0.0500	0.0058	0.0567	0.0090	0.0048	0.0078	0.0048
Thorium [mg/L]	06-May-11	08:42	0.000029	< 0.000004	0.000038	0.000007	< 0.000004	< 0.000004	0.000006
Titanium [mg/L]	06-May-11	08:42	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Thallium [mg/L]	06-May-11	08:42	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Uranium [mg/L]	06-May-11	08:43	0.00236	0.00037	0.00236	0.000751	0.000404	0.000379	0.000388
Vanadium [mg/L]	06-May-11	08:43	< 0.00003	< 0.00003	0.00012	< 0.00003	< 0.00003	< 0.00003	< 0.00003
Yttrium [mg/L]	06-May-11	08:43	0.000081	0.000064	0.000131	0.000080	0.000044	0.000056	0.000144
Zinc [mg/L]	06-May-11	08:43	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	0.001
Zirconium [mg/L]	06-May-11	08:43	0.00021	0.00006	0.00116	0.00049	0.00018	< 0.00001	0.00083

Radionuclides subcontracted to Becquerel Laboratories

Please note: The humidity cell leachate volume recovery for sample "F33 Comb Tls Wk#20" was low due to a laboratory accident.

Dianne Griffin
Project Specialist

OnLine LIMS

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : CALR-11806-007

Thursday, June 30, 2011

Environmental Met
Attn : Barb Bowman

Date Rec. : 08 June 2011
LR Report: **CA10052-JUN11**
Reference: Wk#20

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk#20
Sample Date & Time			08-Jun-11
Hum Cell Leachate Volume [mL]	---	---	945
pH [units]	28-Jun-11	09:38	7.13
Conductivity [µS/cm]	13-Jun-11	13:59	26
Acidity [mg/L as CaCO3]	13-Jun-11	13:59	< 2
Alkalinity [mg/L as CaCO3]	13-Jun-11	13:59	9
Sulphate [mg/L]	20-Jun-11	11:35	2.1
Mercury [mg/L]	14-Jun-11	11:22	< 0.0001
Silver [mg/L]	14-Jun-11	08:07	< 0.00001
Aluminum [mg/L]	15-Jun-11	08:33	0.02
Arsenic [mg/L]	14-Jun-11	08:07	0.0003
Boron [mg/L]	14-Jun-11	08:07	0.0058
Barium [mg/L]	14-Jun-11	08:07	0.00043
Beryllium [mg/L]	14-Jun-11	08:07	< 0.00002
Bismuth [mg/L]	14-Jun-11	08:07	< 0.00001
Calcium [mg/L]	15-Jun-11	08:33	1.89
Cadmium [mg/L]	14-Jun-11	08:07	0.000021
Cobalt [mg/L]	14-Jun-11	08:07	0.000042
Chromium [mg/L]	14-Jun-11	08:07	< 0.0005
Copper [mg/L]	14-Jun-11	08:07	< 0.0005
Iron [mg/L]	15-Jun-11	08:33	0.008
Potassium [mg/L]	15-Jun-11	08:33	1.52
Lithium [mg/L]	14-Jun-11	08:07	< 0.001
Magnesium [mg/L]	15-Jun-11	08:33	0.537
Manganese [mg/L]	14-Jun-11	08:07	0.0268
Molybdenum [mg/L]	14-Jun-11	08:07	0.00247
Sodium [mg/L]	15-Jun-11	08:33	0.95
Nickel [mg/L]	14-Jun-11	08:07	0.0002
Lead [mg/L]	14-Jun-11	08:07	0.00004

OnLine LIMS

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Project : CALR-11806-007

LR Report : **CA10052-JUN11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: XPS PP Comp 2 Tls Wk#20
Antimony [mg/L]	14-Jun-11	08:07	0.0003
Selenium [mg/L]	14-Jun-11	08:07	< 0.001
Silicon [mg/L]	15-Jun-11	08:34	0.32
Tin [mg/L]	14-Jun-11	08:07	0.00044
Strontium [mg/L]	15-Jun-11	08:34	0.0045
Thorium [mg/L]	14-Jun-11	08:07	< 0.000004
Titanium [mg/L]	14-Jun-11	08:07	< 0.0001
Thallium [mg/L]	14-Jun-11	08:07	< 0.00002
Uranium [mg/L]	14-Jun-11	08:07	0.000216
Vanadium [mg/L]	14-Jun-11	08:07	< 0.00003
Yttrium [mg/L]	14-Jun-11	08:07	0.000044
Zinc [mg/L]	14-Jun-11	08:07	< 0.001
Zirconium [mg/L]	14-Jun-11	08:07	0.00011

Radionuclides subcontracted to Becquerel Laboratories.

Dianne Griffin
Project Specialist

OnLine LIMS

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
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Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00617.0

Date: 25-Jul-2011

Lakefield Research Ltd.

185 Concession St., Postal Bag 4300
Lakefield, ON, K0L 2H0

Phone: (705) 652-2038
FAX: (705) 652-1918

Client Ref.
May 10037.R11

attn: Brian Graham

7 water samples Sampled: 04-May-2011 Received: 10-May-2011

Results of Analysis

Sample	Test	Result	Units	Date	Method
Master Conc WK#20	Ra-226	< 0.01	Bq/l	23-Jun-2011	ALPHA
Master Tls WK#20	Ra-226	< 0.01	Bq/l	24-Jun-2011	ALPHA
F33 Com Tls WK#20	Ra-226	< 0.01	Bq/l	24-Jun-2011	ALPHA
F36 Comb Tls WK#20	Ra-226	< 0.01	Bq/l	24-Jun-2011	ALPHA
F37 Comb Tls WK#20	Ra-226	< 0.01	Bq/l	24-Jun-2011	ALPHA
XPS PP Comp 1 Conc WK#20	Ra-226	< 0.01	Bq/l	24-Jun-2011	ALPHA
XPS PP Comp 1 Tls WK#20	Ra-226	< 0.01	Bq/l	24-Jun-2011	ALPHA
Master Conc WK#20	Ra-228	< 0.4	Bq/l	15-Jul-2011	GAMMA
Master Tls WK#20	Ra-228	< 0.3	Bq/l	16-Jul-2011	GAMMA
F33 Com Tls WK#20	Ra-228	< 0.8	Bq/l	17-Jul-2011	GAMMA
F36 Comb Tls WK#20	Ra-228	< 1	Bq/l	18-Jul-2011	GAMMA
F37 Comb Tls WK#20	Ra-228	< 0.8	Bq/l	19-Jul-2011	GAMMA
XPS PP Comp 1 Conc WK#20	Ra-228	< 0.4	Bq/l	20-Jul-2011	GAMMA
XPS PP Comp 1 Tls WK#20	Ra-228	< 0.2	Bq/l	21-Jul-2011	GAMMA
Master Conc WK#20	Pb-210	< 0.1	Bq/l	20-Jun-2011	GFPC
Master Tls WK#20	Pb-210	< 0.1	Bq/l	20-Jun-2011	GFPC
F33 Comb Tls WK#20	Pb-210	< 0.1	Bq/l	20-Jun-2011	GFPC
F36 Comb Tls WK#20	Pb-210	< 0.1	Bq/l	21-Jun-2011	GFPC
F37 Comb Tls WK#20	Pb-210	< 0.1	Bq/l	21-Jun-2011	GFPC
XPS PP Comp 1 Conc WK#20	Pb-210	0.1	Bq/l	21-Jun-2011	GFPC
XPS PP Comp 1 Tls WK#20	Pb-210	< 0.1	Bq/l	21-Jun-2011	GFPC

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
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Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00617.0

Date: 25-Jul-2011

Methods:	ALPHA	BQ-RAD-ALPHA	alpha-particle spectrometry
	GAMMA	BQ-RAD-GAMMA	gamma-ray spectrometry
	GFPC	BQ-RAD-GFPC	gas-flow proportional counting

Units: Bq/l Becquerels per litre

These results relate only to the samples analysed and only to the items tested. detection limits for Ra-228 were elevated due to lack of sample.

25-Jul-2011 approved by: _____
Donald D. Burgess PhD
Senior Scientist, Division Supervisor

ANALYSIS REPORT

Becquerel Laboratories Inc.
6790 Kitimat Rd., Unit 4
Mississauga, Ontario
Canada, L5N 5L9

Phone: (905) 826-3080
FAX: (905) 826-4151

Batch: T11-00803.0

Date: 29-Jul-2011

Lakefield Research Ltd.

185 Concession St., Postal Bag 4300
Lakefield, ON, K0L 2H0

Phone: (705) 652-2038
FAX: (705) 652-1918

Client Ref.
June 10052.R11

attn: Dianne Griffin

1 water sample Sampled: 08-Jun-2011 Received: 10-Jun-2011

Results of Analysis

Sample	Test	Result	Units	Date	Method
XPS PP Comp 2 TLS WK#20	Ra-228	< 0.6	Bq/l	28-Jul-2011	GAMMA
XPS PP Comp 2 TLS WK#20	Ra-226	< 0.01	Bq/l	16-Jun-2011	ALPHA
XPS PP Comp 2 TLS WK#20	Pb-210	0.2	Bq/l	30-Jun-2011	GFPC

Methods:
GAMMA	BQ-RAD-GAMMA	gamma-ray spectrometry
ALPHA	BQ-RAD-ALPHA	alpha-particle spectrometry
GFPC	BQ-RAD-GFPC	gas-flow proportional counting

Units: Bq/l Becquerels per litre

These results relate only to the samples analysed and only to the items tested.
The detection limit for Ra-228 was elevated due to lack of sample.

29-Jul-2011 approved by: _____
Donald D. Burgess PhD
Senior Scientist, Division Supervisor

Appendix G – Geotechnical Test Reports

TEST REPORT

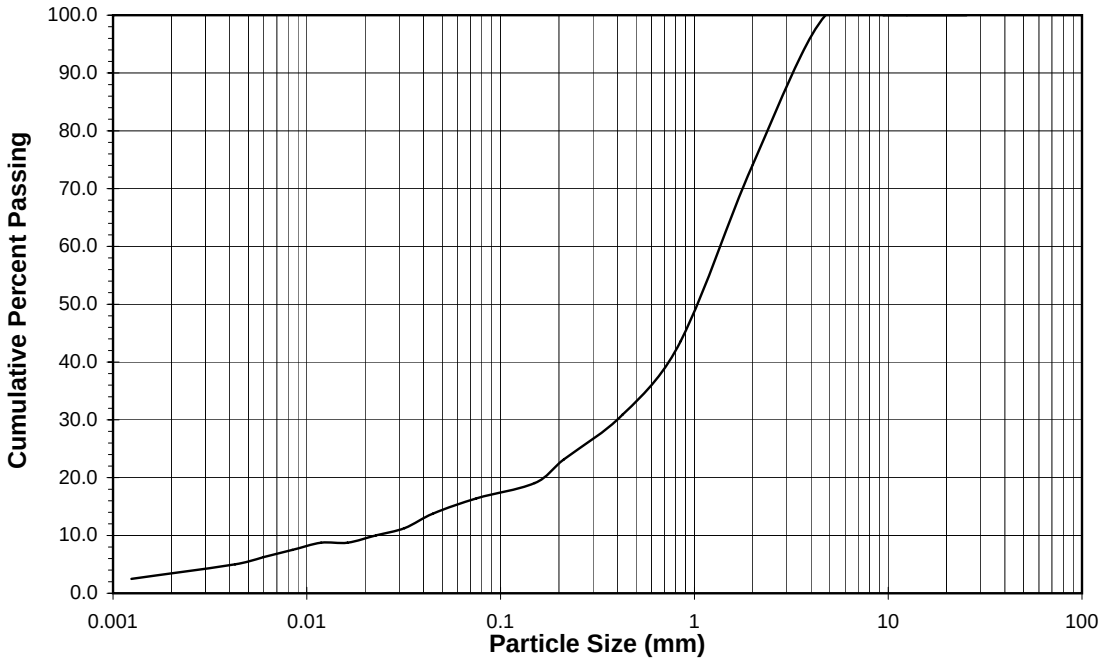
Particle Size Analysis by Hydrometer

Sample ID: Master Comp 3
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.92

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	74.1
#20	0.850	43.6
#35	0.425	30.9
#65	0.212	23.2
#100	0.150	19.1
#200	0.075	16.4
-	0.045	13.8
-	0.032	11.3
-	0.023	10.0
-	0.016	8.8
-	0.012	8.8
-	0.008	7.5
-	0.006	6.3
-	0.004	5.0
-	0.001	2.5

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

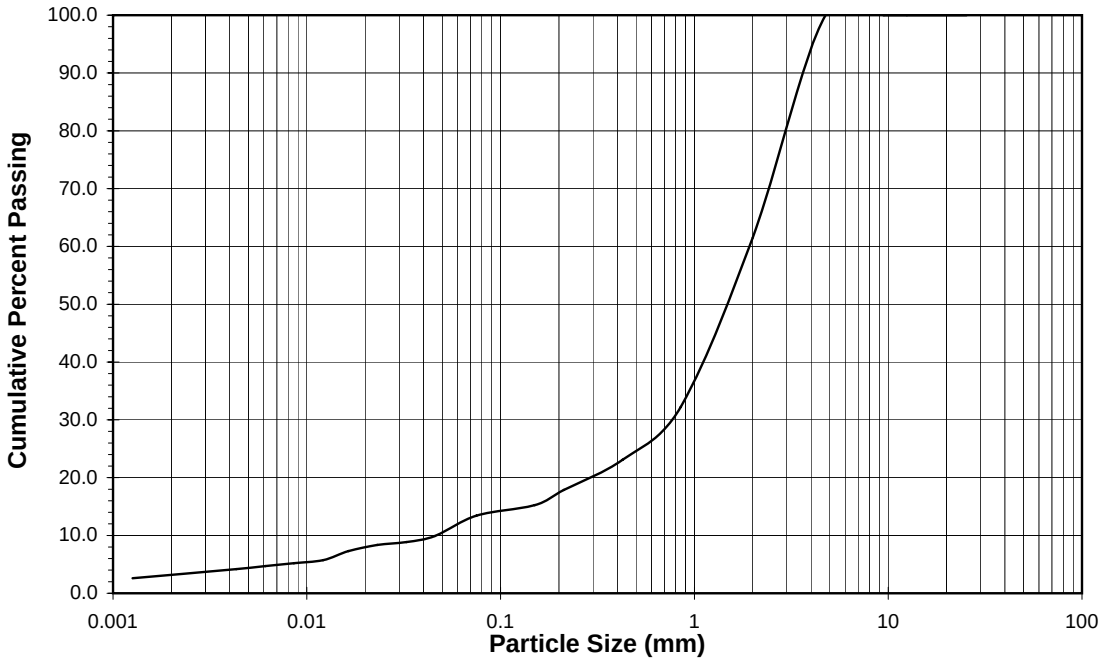
Particle Size Analysis by Hydrometer

Sample ID: Avalon Head Sample 1
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.89

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	61.5
#20	0.850	32.2
#35	0.425	23.1
#65	0.212	17.9
#100	0.150	15.2
#200	0.075	13.4
-	0.046	9.9
-	0.033	8.9
-	0.023	8.3
-	0.016	7.3
-	0.012	5.7
-	0.009	5.2
-	0.006	4.7
-	0.004	4.2
-	0.001	2.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

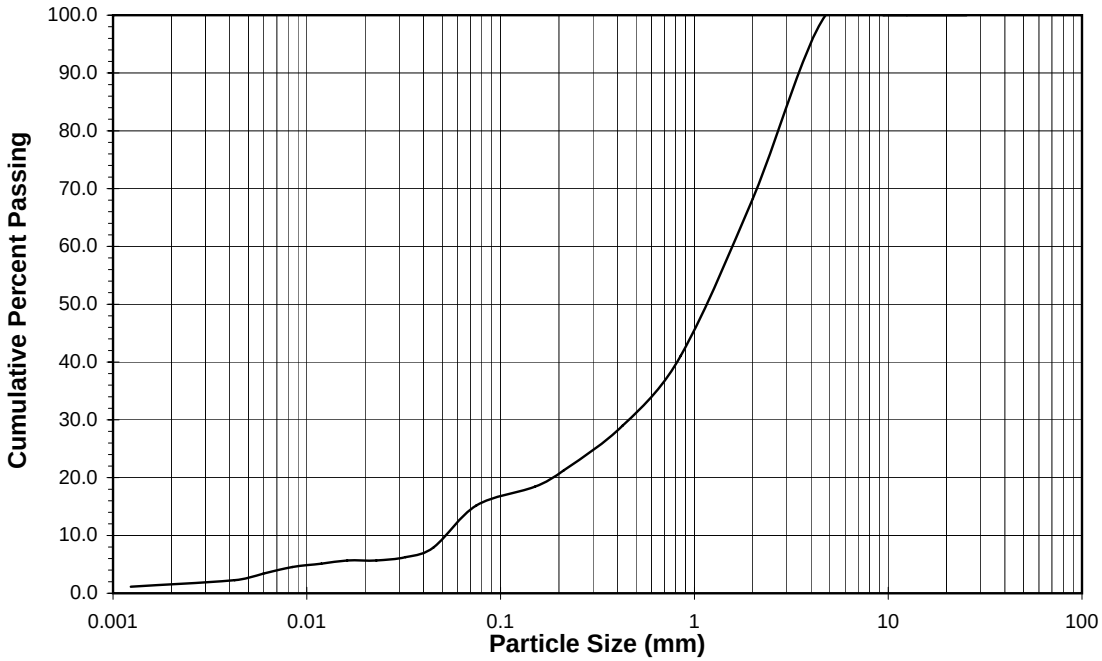
Particle Size Analysis by Hydrometer

Sample ID: Avalon Head Sample 2
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.96

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	68.2
#20	0.850	41.1
#35	0.425	29.0
#65	0.212	21.3
#100	0.150	18.4
#200	0.075	15.2
-	0.045	8.0
-	0.032	6.3
-	0.023	5.7
-	0.016	5.7
-	0.012	5.1
-	0.008	4.5
-	0.006	3.4
-	0.004	2.3
-	0.001	1.1

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

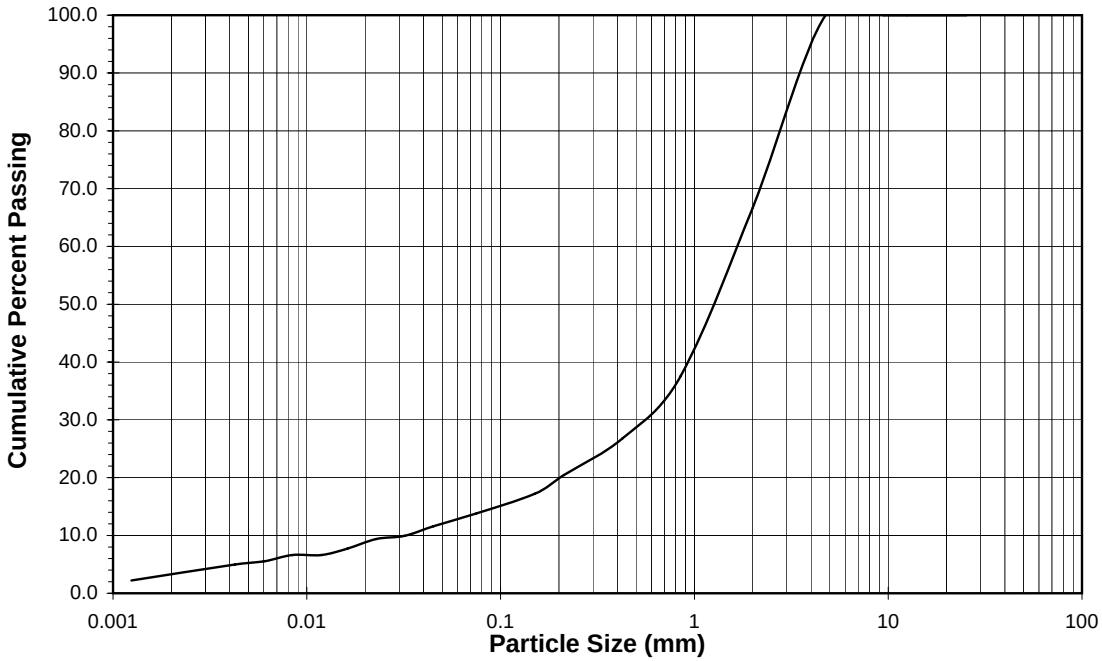
Particle Size Analysis by Hydrometer

Sample ID: Avalon Head Sample 3
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.93

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	66.7
#20	0.850	37.6
#35	0.425	26.8
#65	0.212	20.5
#100	0.150	17.2
#200	0.075	13.8
-	0.045	11.6
-	0.032	9.9
-	0.023	9.4
-	0.016	7.7
-	0.012	6.6
-	0.008	6.6
-	0.006	5.5
-	0.004	5.0
-	0.001	2.2

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

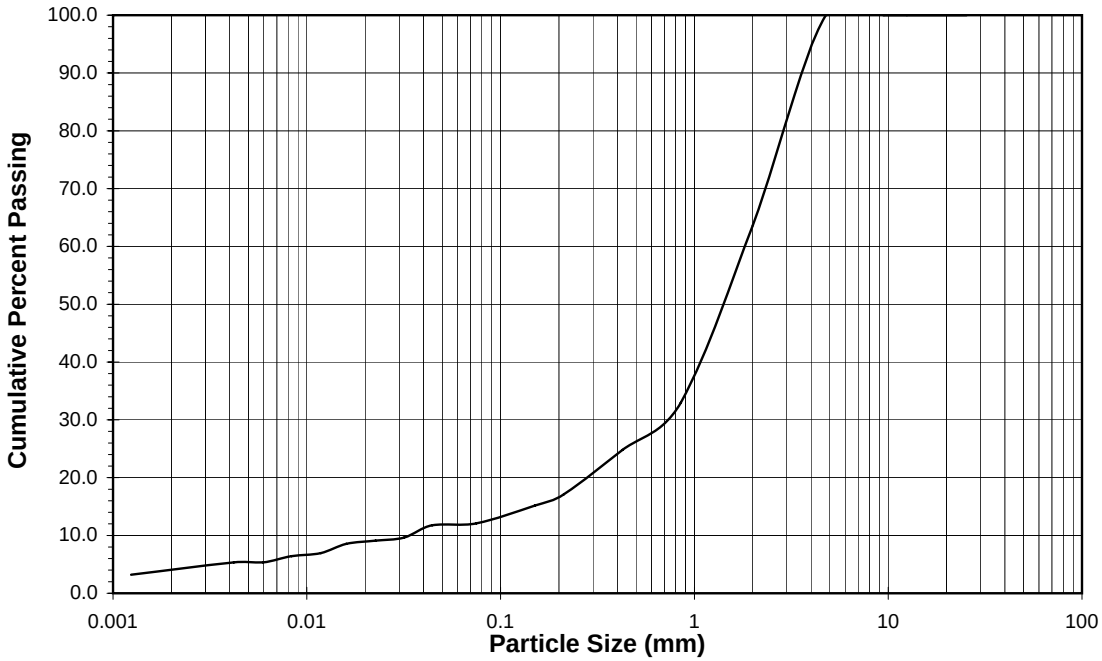
Particle Size Analysis by Hydrometer

Sample ID: XPS PP Comp 2 Head
Date Completed: 24-Jan-11
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.97

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	99.9
#9	2.000	63.6
#20	0.850	32.9
#35	0.425	24.8
#65	0.212	17.1
#100	0.150	15.2
#200	0.075	12.1
-	0.044	11.8
-	0.032	9.6
-	0.023	9.1
-	0.016	8.6
-	0.012	7.0
-	0.008	6.4
-	0.006	5.4
-	0.004	5.4
-	0.001	3.2

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

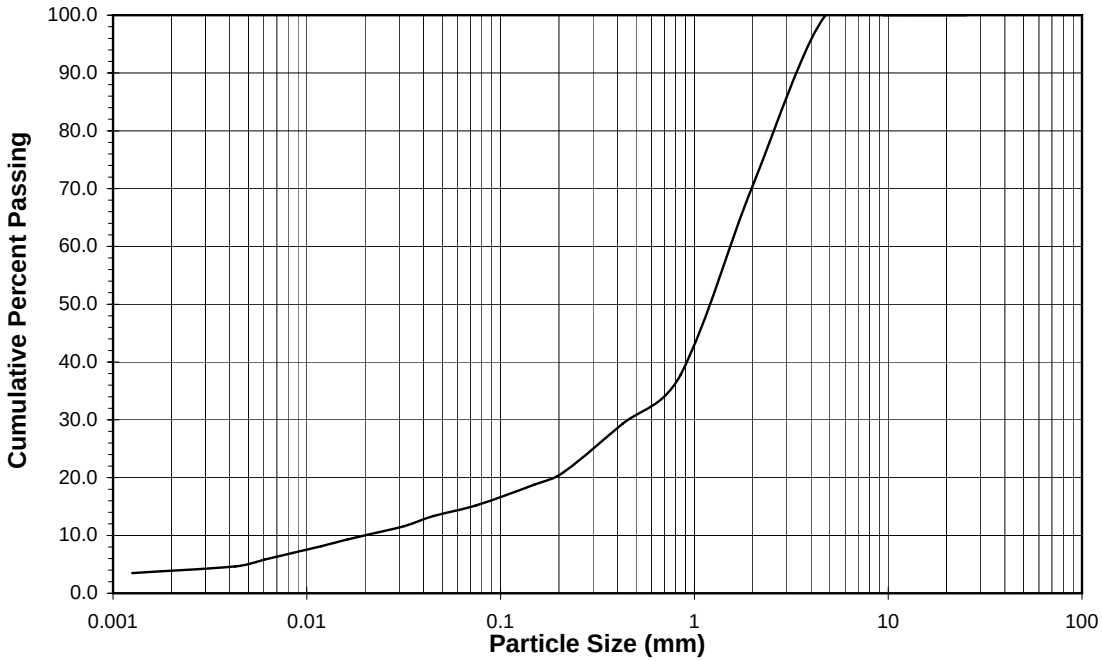
Particle Size Analysis by Hydrometer

Sample ID: XPS PP Comp 3 Head
Date Completed: 24-Jan-11
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.91

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	70.5
#20	0.850	37.8
#35	0.425	29.3
#65	0.212	21.0
#100	0.150	18.8
#200	0.075	15.2
-	0.045	13.4
-	0.032	11.6
-	0.023	10.5
-	0.016	9.3
-	0.012	8.1
-	0.008	7.0
-	0.006	5.8
-	0.004	4.7
-	0.001	3.5

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

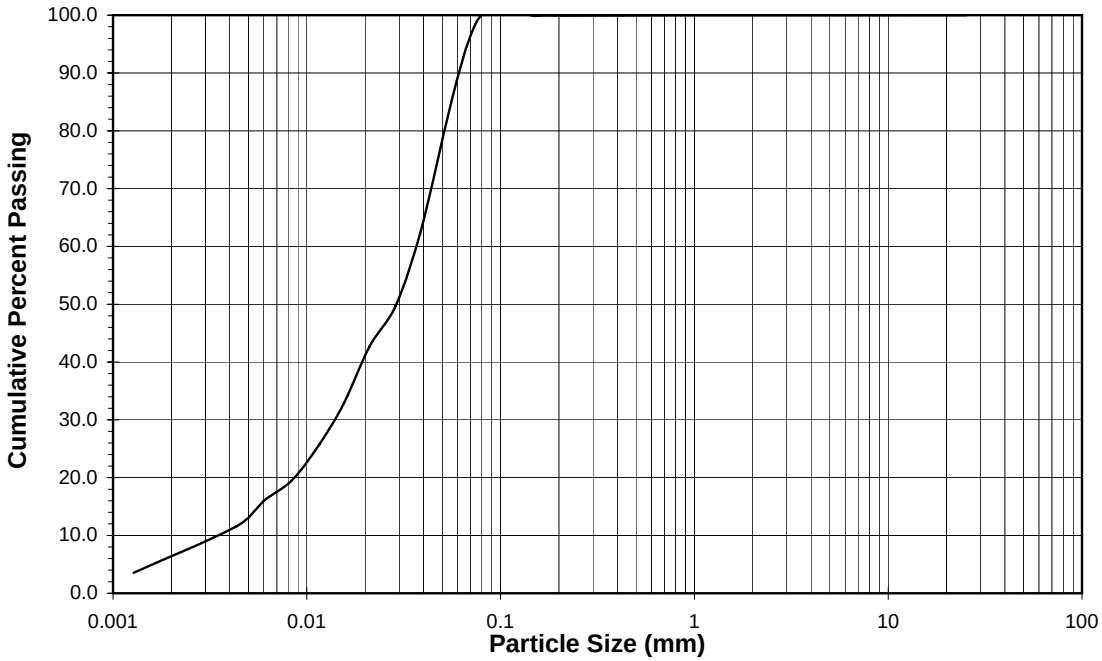
Particle Size Analysis by Hydrometer

Sample ID: F25 Comb Tls
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.81

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	99.9
#100	0.150	99.9
#200	0.075	98.8
-	0.038	62.2
-	0.029	49.8
-	0.021	42.6
-	0.016	32.9
-	0.012	25.8
-	0.008	19.5
-	0.006	16.0
-	0.004	11.5
-	0.001	3.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

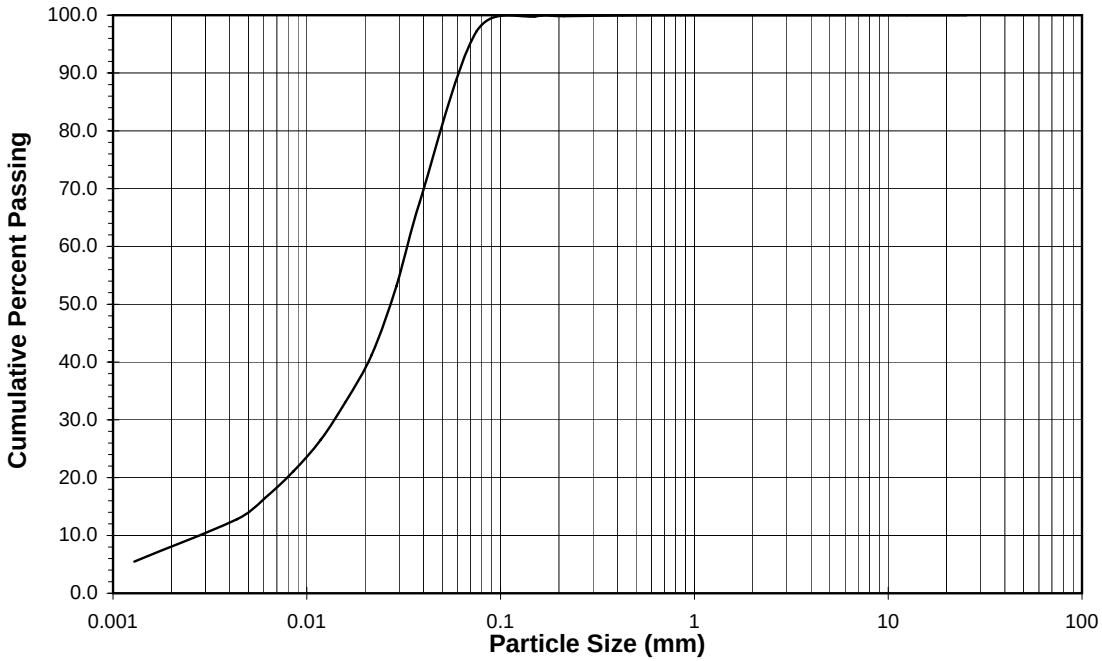
Particle Size Analysis by Hydrometer

Sample ID: F28 Comb Tls
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.76

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	99.9
#65	0.212	99.8
#100	0.150	99.7
#200	0.075	97.2
-	0.038	67.8
-	0.029	53.1
-	0.022	41.2
-	0.016	33.0
-	0.012	26.6
-	0.008	21.1
-	0.006	16.5
-	0.004	12.8
-	0.001	5.5

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

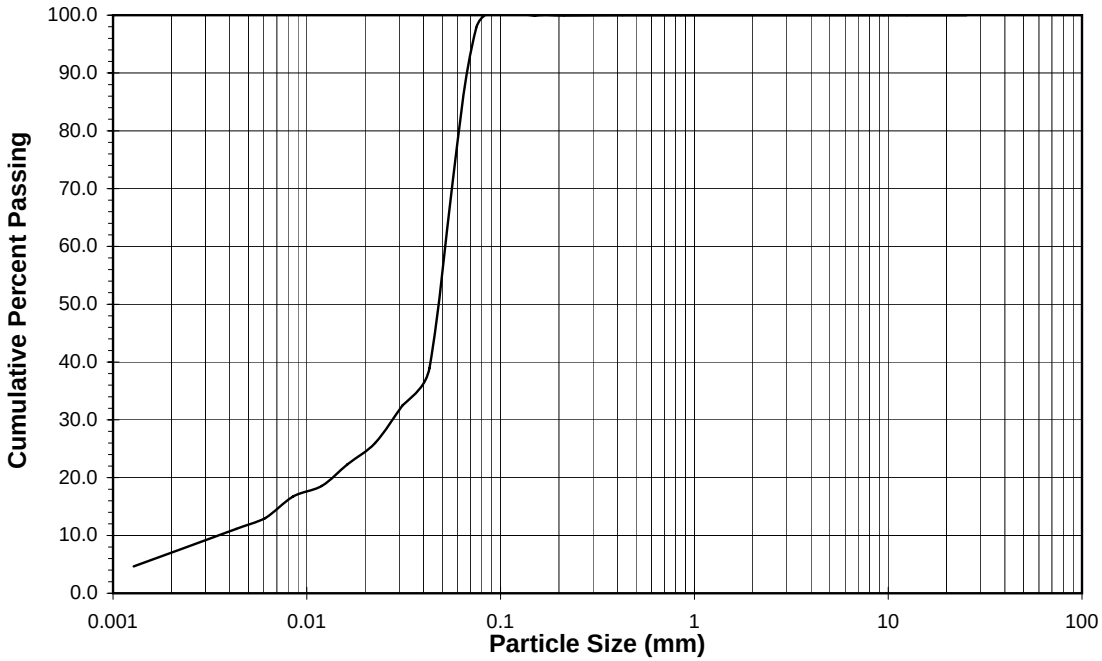
Particle Size Analysis by Hydrometer

Sample ID: F29 Comb Tls
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.82

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	99.9
#100	0.150	99.9
#200	0.075	97.9
-	0.043	39.0
-	0.031	32.5
-	0.023	26.0
-	0.016	22.3
-	0.012	18.6
-	0.008	16.7
-	0.006	13.0
-	0.004	11.1
-	0.001	4.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

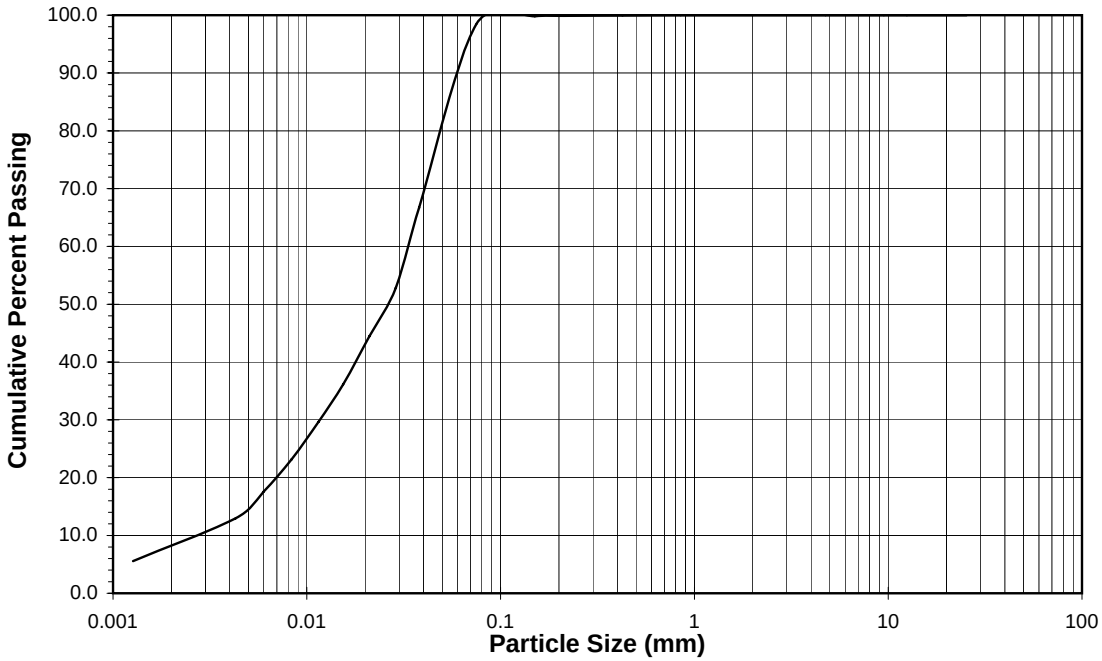
Particle Size Analysis by Hydrometer

Sample ID: F33 Comb Tls
Date Completed: 08-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.82

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	99.9
#65	0.212	99.9
#100	0.150	99.8
#200	0.075	98.5
-	0.038	66.7
-	0.029	52.8
-	0.021	44.5
-	0.015	36.1
-	0.011	29.6
-	0.008	23.2
-	0.006	17.6
-	0.004	13.0
-	0.001	5.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

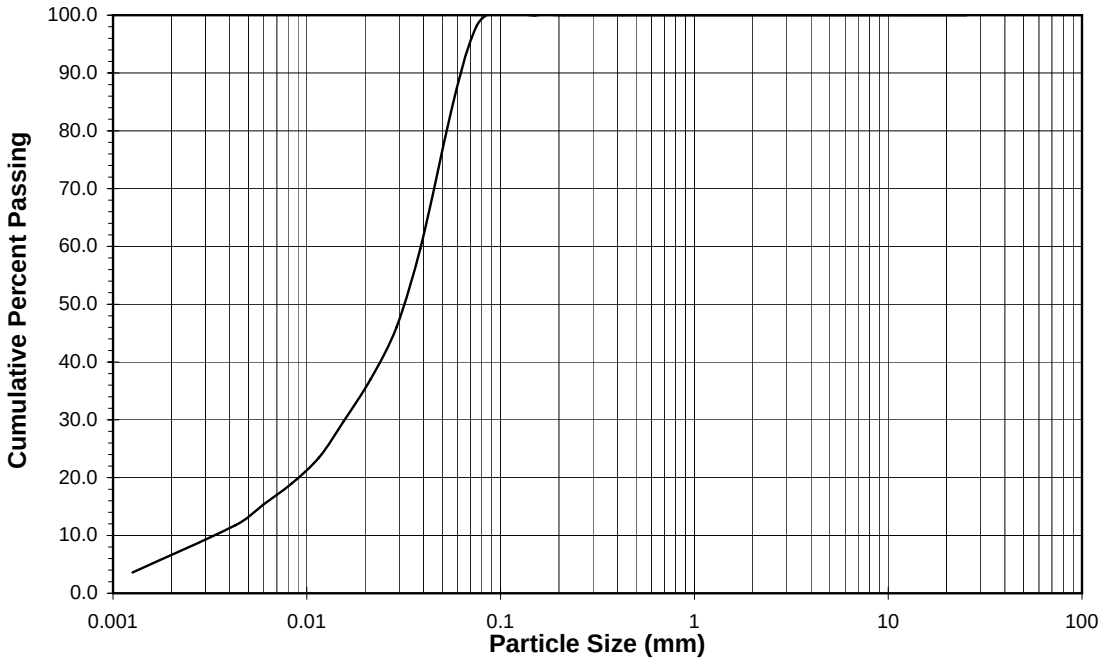
Particle Size Analysis by Hydrometer

Sample ID: F36 Comb Tls
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.86

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	98.1
-	0.039	59.6
-	0.029	46.0
-	0.021	37.0
-	0.016	29.8
-	0.012	23.5
-	0.008	19.0
-	0.006	15.3
-	0.004	11.7
-	0.001	3.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

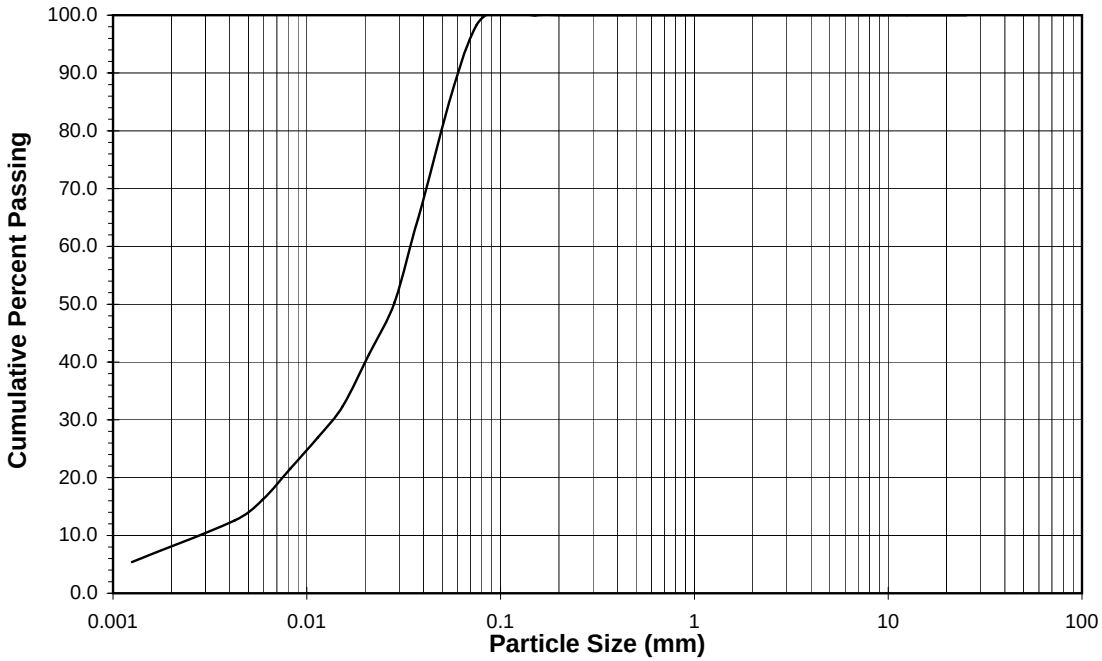
Particle Size Analysis by Hydrometer

Sample ID: F37 Comb Tls
Date Completed: 08-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.86

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	98.3
-	0.037	64.7
-	0.028	50.4
-	0.021	41.4
-	0.015	32.4
-	0.011	27.0
-	0.008	21.6
-	0.006	16.2
-	0.004	12.6
-	0.001	5.4

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

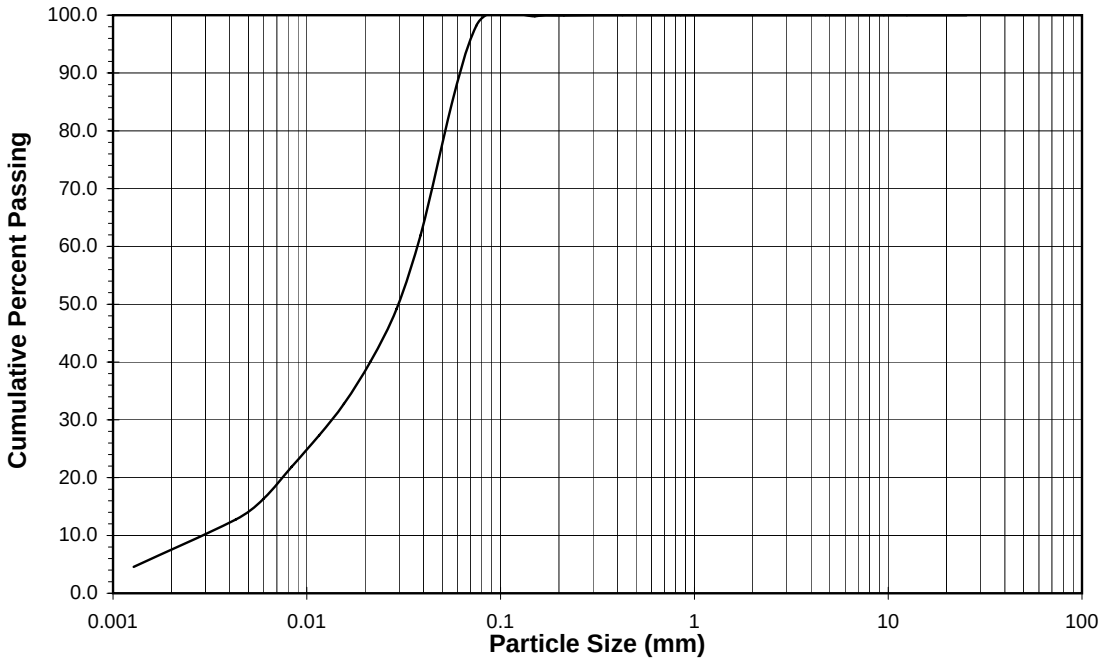
Particle Size Analysis by Hydrometer

Sample ID: Master Tls
Date Completed: 15-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.83

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	99.8
#200	0.075	98.2
-	0.039	61.9
-	0.029	49.2
-	0.021	40.1
-	0.016	32.8
-	0.012	27.3
-	0.008	21.9
-	0.006	16.4
-	0.004	12.7
-	0.001	4.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

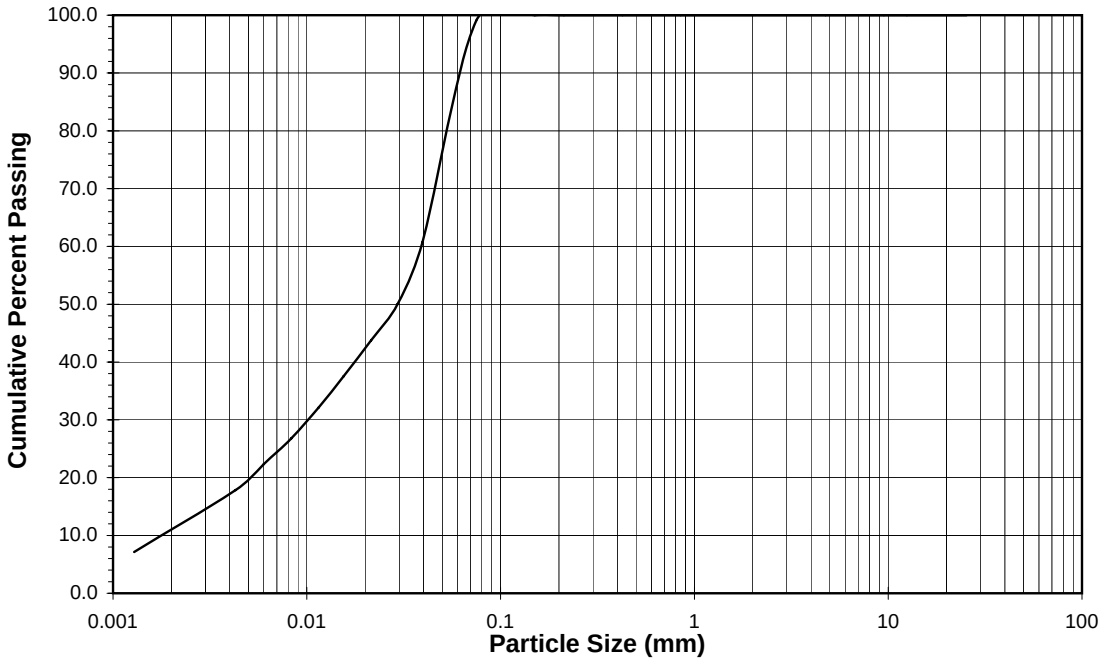
Particle Size Analysis by Hydrometer

Sample ID: XPS-PP Comp 1 Tls
Date Completed: 10-Dec-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.84

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	99.1
-	0.040	60.7
-	0.029	50.0
-	0.021	43.8
-	0.015	37.5
-	0.012	32.1
-	0.008	26.8
-	0.006	22.3
-	0.004	17.9
-	0.001	7.1

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

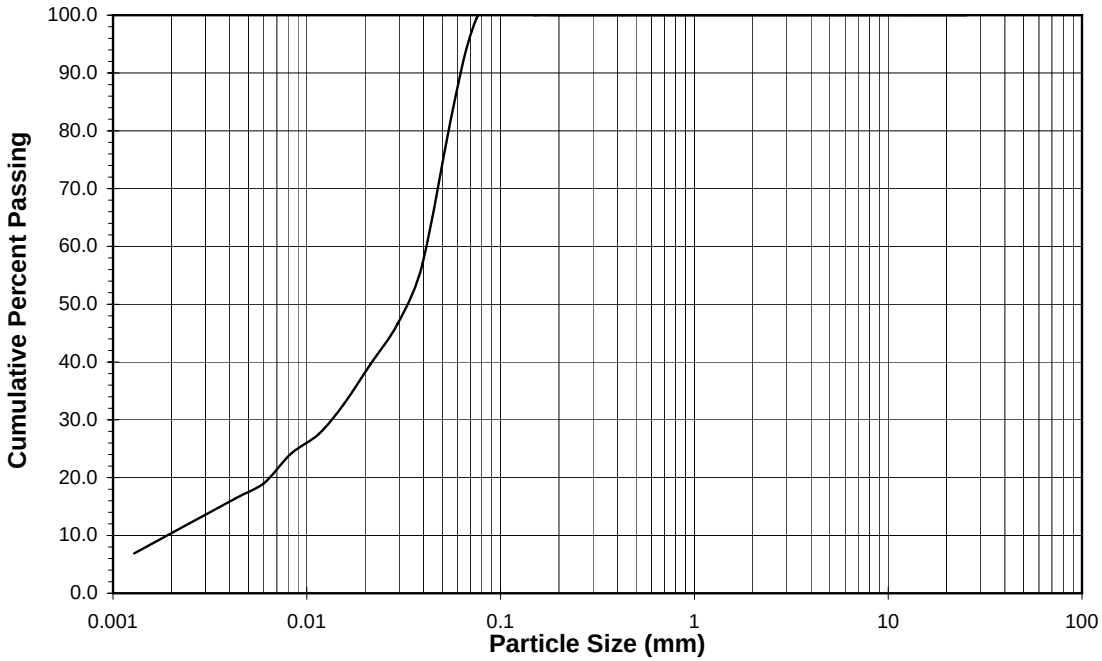
Particle Size Analysis by Hydrometer

Sample ID: XPS PP Comp 2 Tls
Date Completed: 24-Jan-11
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 2.82

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	99.4
-	0.039	56.9
-	0.029	46.5
-	0.021	39.6
-	0.016	32.8
-	0.012	27.6
-	0.008	24.1
-	0.006	19.0
-	0.004	16.4
-	0.001	6.9

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

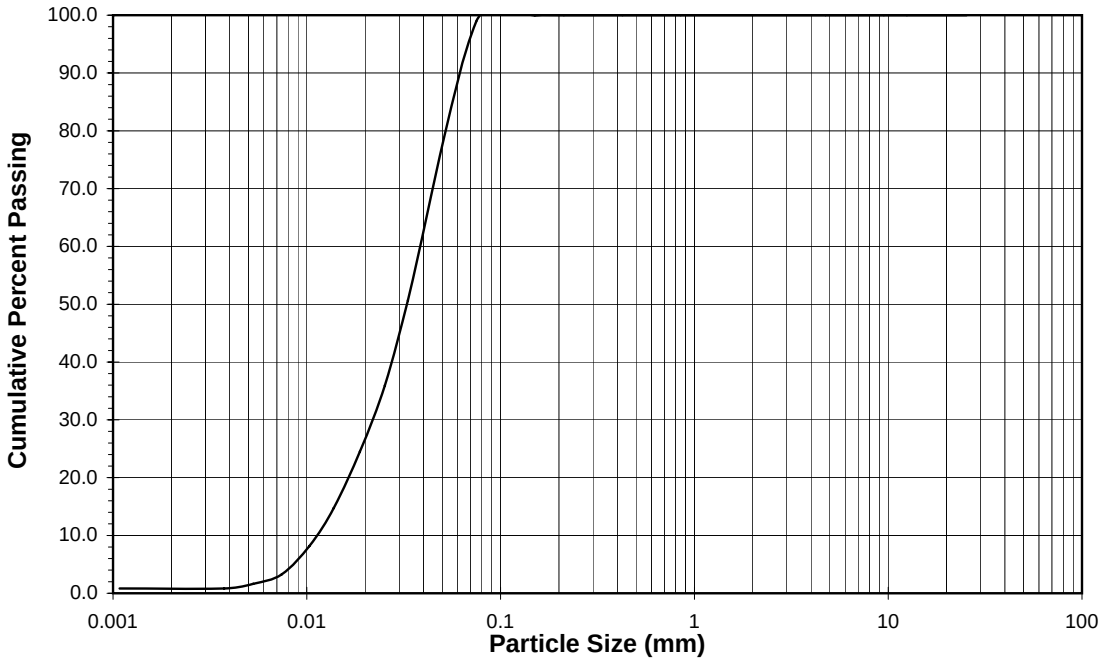
Particle Size Analysis by Hydrometer

Sample ID: F33 Mozley Comp Conc
Date Completed: 08-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 3.54

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	99.9
#200	0.075	99.0
-	0.033	50.7
-	0.025	36.0
-	0.019	24.5
-	0.014	14.7
-	0.010	8.2
-	0.007	3.3
-	0.005	1.6
-	0.004	0.8
-	0.001	0.8

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

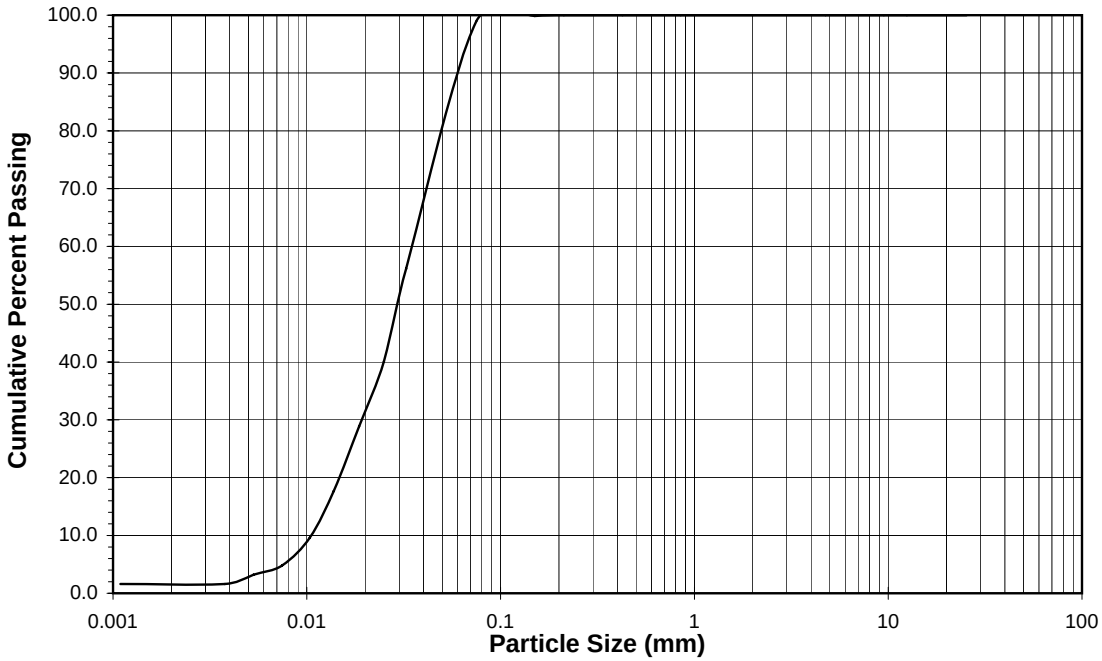
Particle Size Analysis by Hydrometer

Sample ID: F36 Mozley Comp Conc
Date Completed: 08-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 3.49

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	99.9
#200	0.075	99.0
-	0.033	56.2
-	0.025	40.1
-	0.019	28.9
-	0.014	17.6
-	0.010	9.6
-	0.007	4.8
-	0.005	3.2
-	0.004	1.6
-	0.001	1.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

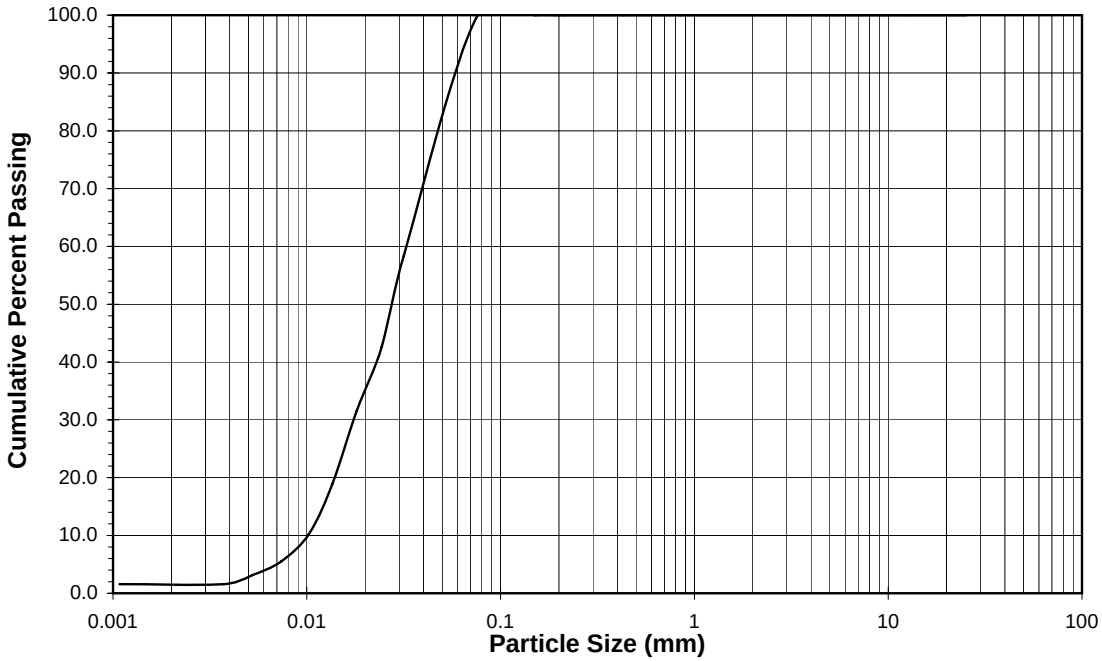
Particle Size Analysis by Hydrometer

Sample ID: F37 Mozley Comp Conc
Date Completed: 00-Jan-00
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 3.53

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	99.6
-	0.032	58.4
-	0.024	42.6
-	0.018	31.5
-	0.014	18.9
-	0.010	10.3
-	0.007	5.5
-	0.005	3.2
-	0.004	1.6
-	0.001	1.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

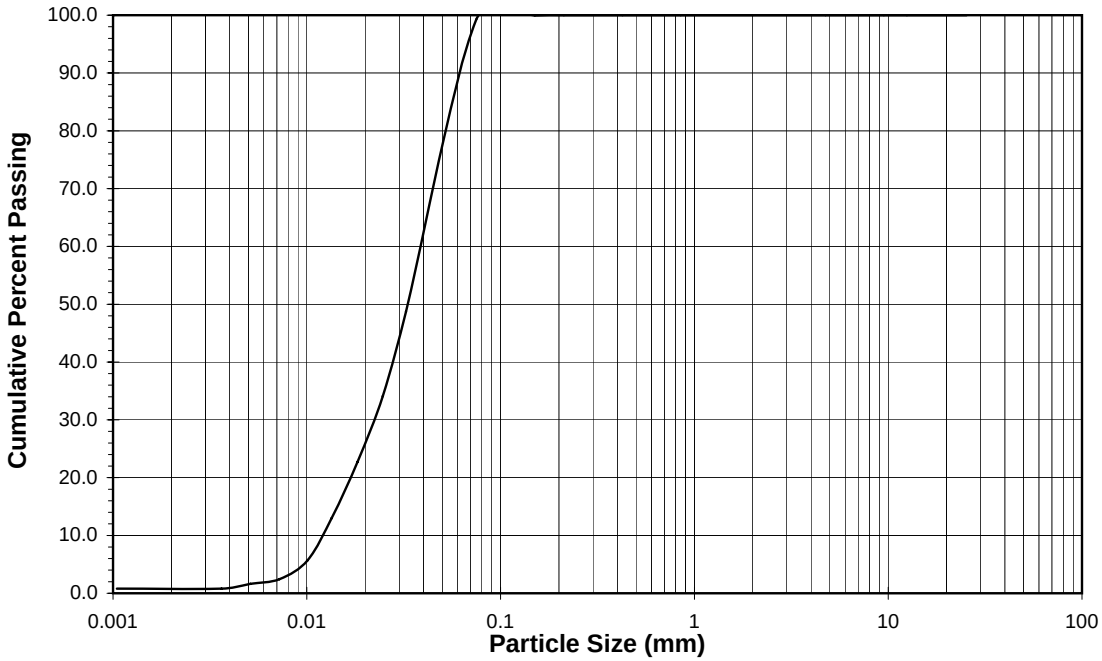
Particle Size Analysis by Hydrometer

Sample ID: Master Conc
Date Completed: 08-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 3.67

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	99.3
-	0.032	48.7
-	0.025	34.1
-	0.018	22.7
-	0.013	13.0
-	0.010	5.7
-	0.007	2.4
-	0.005	1.6
-	0.004	0.8
-	0.001	0.8

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

TEST REPORT

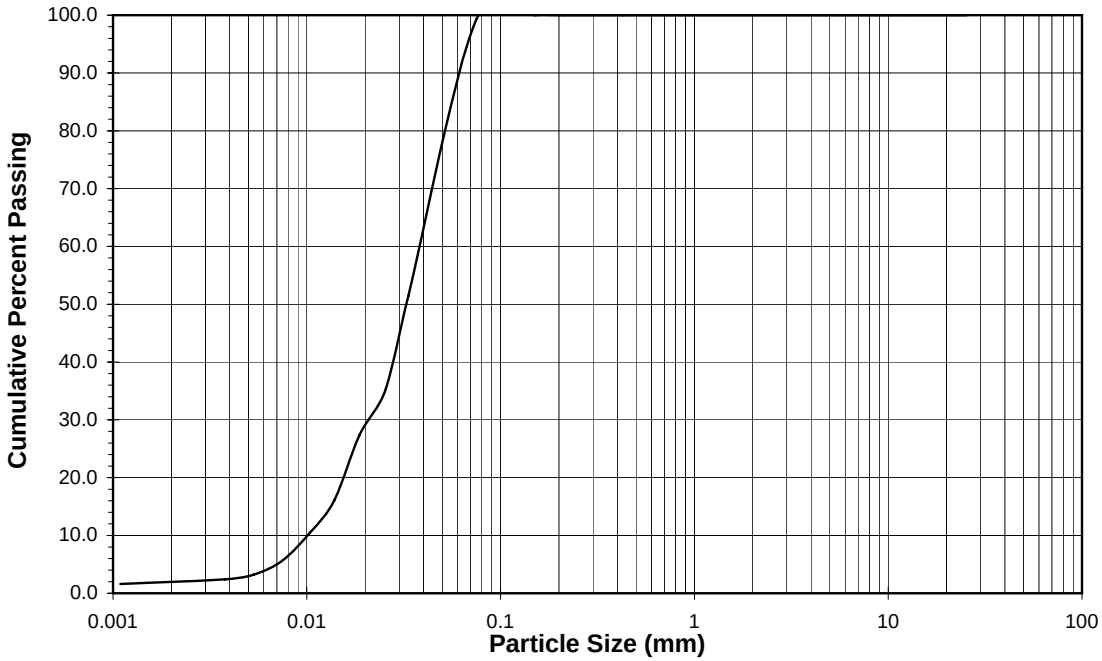
Particle Size Analysis by Hydrometer

Sample ID: XPS PP Comp 1 Conc
Date Completed: 08-Nov-10
Reference: ASTM D 422, SOP 7-18-6

Specific Gravity: 3.47

Sieve Size (Tyler)	Particle Size (mm)	Weight Passing %
1"	25.400	100.0
1/2"	12.500	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#9	2.000	100.0
#20	0.850	100.0
#35	0.425	100.0
#65	0.212	100.0
#100	0.150	100.0
#200	0.075	99.3
-	0.033	51.5
-	0.026	35.4
-	0.019	27.3
-	0.014	16.1
-	0.010	10.5
-	0.007	5.6
-	0.005	3.2
-	0.004	2.4
-	0.001	1.6

Particle Size Distribution



Note: Correction factors for SG's less than 2.45 and greater than 2.85 are calculated

R. J. Caldwell
Project Manager, Environmental Testing

B. Bowman
Senior Technologist, Environmental Testing

MASTERSIZER 2000

Result Analysis Report

Sample Name:
11806-005 Red Water - Average

Sample Source & type:
Factory

Sample bulk lot ref:

SOP Name:
default

Measured by:
lr_hydro1

Result Source:
Averaged

Measured:
Monday, January 10, 2011 1:30:46 PM

Analysed:
Monday, January 10, 2011 1:30:47 PM

Particle Name:
Default

Particle RI:
1.520

Dispersant Name:
Water

Accessory Name:
Hydro 2000G (A)

Absorption:
0.1

Dispersant RI:
1.330

Analysis model:
General purpose

Size range:
0.020 to 2000.000 um

Weighted Residual:
7.361 %

Sensitivity:
Normal

Obscuration:
12.35 %

Result Emulation:
Off

Concentration:
0.0026 %Vol

Specific Surface Area:
13.9 m²/g

Span :
3.502

Surface Weighted Mean D[3,2]:
0.433 um

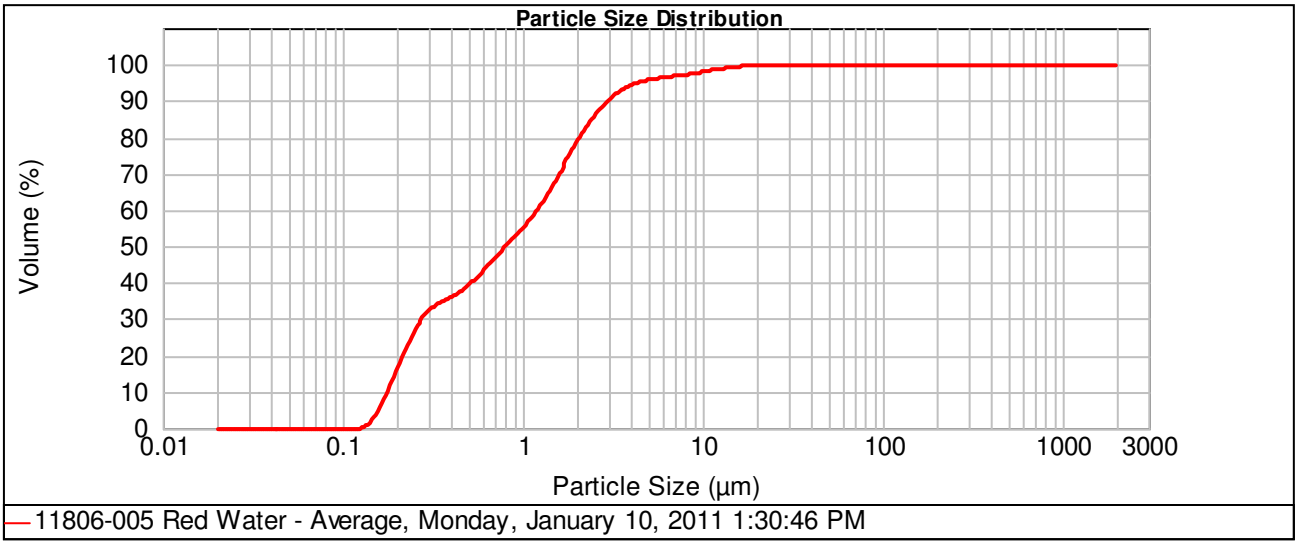
Uniformity:
1.45

Vol. Weighted Mean D[4,3]:
1.479 um

Result units:
Volume

---

d(0.1): 0.175 um **d(0.5):** 0.799 um **D(0.80) : 2.08 µm**



Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %
0.010	0.00	0.105	0.00	1.096	57.63	11.482	98.51	120.226	100.00	1258.925	100.00
0.011	0.00	0.120	0.00	1.259	61.75	13.183	98.98	138.038	100.00	1445.440	100.00
0.013	0.00	0.138	1.19	1.445	66.51	15.136	99.38	158.489	100.00	1659.587	100.00
0.015	0.00	0.158	5.44	1.660	71.65	17.378	99.71	181.970	100.00	1905.461	100.00
0.017	0.00	0.182	11.83	1.905	76.82	19.953	99.89	208.930	100.00	2187.762	100.00
0.020	0.00	0.209	18.95	2.188	81.67	22.909	99.97	239.883	100.00	2511.886	100.00
0.023	0.00	0.240	25.35	2.512	85.91	26.303	100.00	275.423	100.00	2884.032	100.00
0.026	0.00	0.275	30.09	2.884	89.35	30.200	100.00	316.228	100.00	3311.311	100.00
0.030	0.00	0.316	33.05	3.311	91.96	34.674	100.00	363.078	100.00	3801.894	100.00
0.035	0.00	0.363	34.89	3.802	93.80	39.811	100.00	416.869	100.00	4365.158	100.00
0.040	0.00	0.417	36.52	4.365	95.02	45.709	100.00	478.630	100.00	5011.872	100.00
0.046	0.00	0.479	38.56	5.012	95.79	52.481	100.00	549.541	100.00	5754.399	100.00
0.052	0.00	0.550	41.21	5.754	96.30	60.256	100.00	630.957	100.00	6606.934	100.00
0.060	0.00	0.631	44.37	6.607	96.71	69.183	100.00	724.436	100.00	7585.776	100.00
0.069	0.00	0.724	47.70	7.586	97.11	79.433	100.00	831.764	100.00	8709.636	100.00
0.079	0.00	0.832	50.93	8.710	97.55	91.201	100.00	954.993	100.00	10000.000	100.00
0.091	0.00	0.955	54.12	10.000	98.02	104.713	100.00	1096.478	100.00		

Operator notes:

TEST REPORT

Liquid Limit, Plastic Limit, and Plasticity Index

Sample ID: Master Tls
Date Completed: 24-Jan-11
Reference: ASTM D 4318, SOP 7-18-8

Liquid Limit Determination

Parameter	Units	1	2	3	4
Tare ID Number	#	1	2	3	4
Tare Weight	g	1.95	1.95	1.94	1.96
Weight of Wet Soil + Tare	g	14.21	17.33	14.04	13.39
Weight of Dry Soil + Tare	g	11.88	14.36	11.69	11.15
Weight of Water	g	2.33	2.97	2.35	2.24
Weight of Dry Soil	g	9.93	12.41	9.75	9.19
Percent Moisture	%	23.46	23.93	24.10	24.37
Number of Blows	#	35	22	20	17

Plastic Limit Determination

Parameter	Units	1	2
Tare ID Number	#		
Tare Weight	g		
Weight of Wet Soil + Tare	g	Not plastic.	
Weight of Dry Soil + Tare	g		
Weight of Water	g		
Weight of Dry Soil	g		
Percent Moisture	%		

Flow Curve

Final Test Results

Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)
24	NP	NP

Note: Sample was received oven dried.

B. Bowman
Senior Technologist

R. J. Caldwell B.Sc.,
Project Manager

TEST REPORT

Liquid Limit, Plastic Limit, and Plasticity Index

Sample ID: XPS PP Comp 1 Tls
Date Completed: 24-Jan-11
Reference: ASTM D 4318, SOP 7-18-8

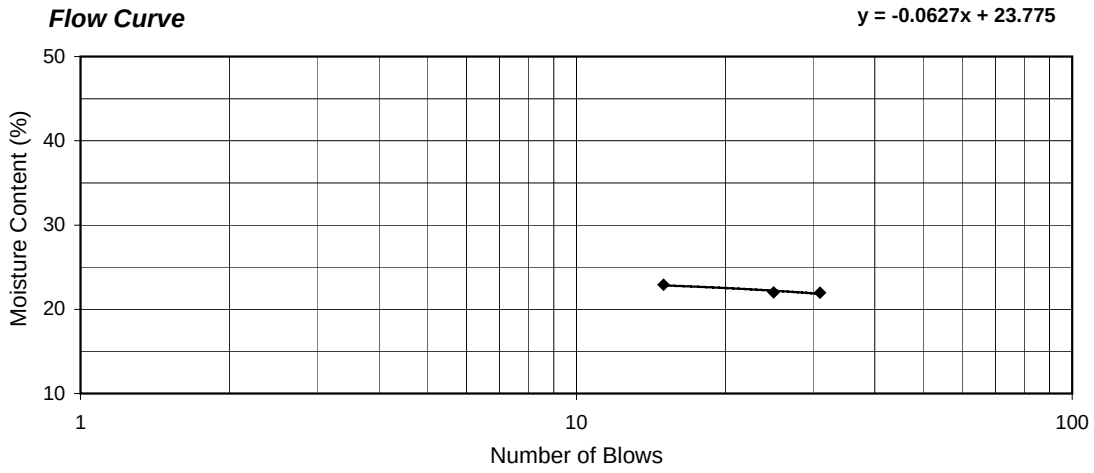
Liquid Limit Determination

Parameter	Units	1	2	3
Tare ID Number	#	5	6	7
Tare Weight	g	1.93	1.96	1.96
Weight of Wet Soil + Tare	g	13.48	11.39	13.01
Weight of Dry Soil + Tare	g	11.40	9.69	10.95
Weight of Water	g	2.08	1.70	2.06
Weight of Dry Soil	g	9.47	7.73	8.99
Percent Moisture	%	21.96	21.99	22.91
Number of Blows	#	31	25	15

Plastic Limit Determination

Parameter	Units	1	2
Tare ID Number	#		
Tare Weight	g		
Weight of Wet Soil + Tare	g	Not plastic.	
Weight of Dry Soil + Tare	g		
Weight of Water	g		
Weight of Dry Soil	g		
Percent Moisture	%		

Flow Curve



Final Test Results

Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)
22	NP	NP

Note: Sample was not dried.

B. Bowman
Senior Technologist

R. J. Caldwell B.Sc.,
Project Manager

TEST REPORT

Liquid Limit, Plastic Limit, and Plasticity Index

Sample ID: XPS PP Comp 2 Tls
Date Completed: 24-Jan-11
Reference: ASTM D 4318, SOP 7-18-8

Liquid Limit Determination

Parameter	Units	1	2	3	4
Tare ID Number	#	8	9	10	11
Tare Weight	g	1.95	2.00	1.95	1.96
Weight of Wet Soil + Tare	g	12.94	13.00	14.65	16.76
Weight of Dry Soil + Tare	g	11.10	11.13	12.45	14.18
Weight of Water	g	1.84	1.87	2.20	2.58
Weight of Dry Soil	g	9.15	9.13	10.50	12.22
Percent Moisture	%	20.11	20.48	20.95	21.11
Number of Blows	#	40	31	25	17

Plastic Limit Determination

Parameter	Units	1	2
Tare ID Number	#		
Tare Weight	g		
Weight of Wet Soil + Tare	g	Not plastic.	
Weight of Dry Soil + Tare	g		
Weight of Water	g		
Weight of Dry Soil	g		
Percent Moisture	%		

Flow Curve

Final Test Results

Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)
21	NP	NP

Note: Sample was not dried.

B. Bowman
Senior Technologist

R. J. Caldwell B.Sc.,
Project Manager

TEST REPORT

Compaction Characteristics of Soil Using Standard Effort

Sample ID: XPS PP Comp 1 Tls
Date Completed: Mar 2/2011
Reference: ASTM D 698, SOP 7-18-7 (Test Method A)

Test Details

Standard Proctor	
Hammer Weight (kg)	2.27
Lifts	3
Height of Drop (cm)	30.5
Blows per Layer	25
Volume of Mould (cm^3)	941.82
Compacting Effort ($kN\text{-}m/m^3$)	600
Specific Gravity	2.84

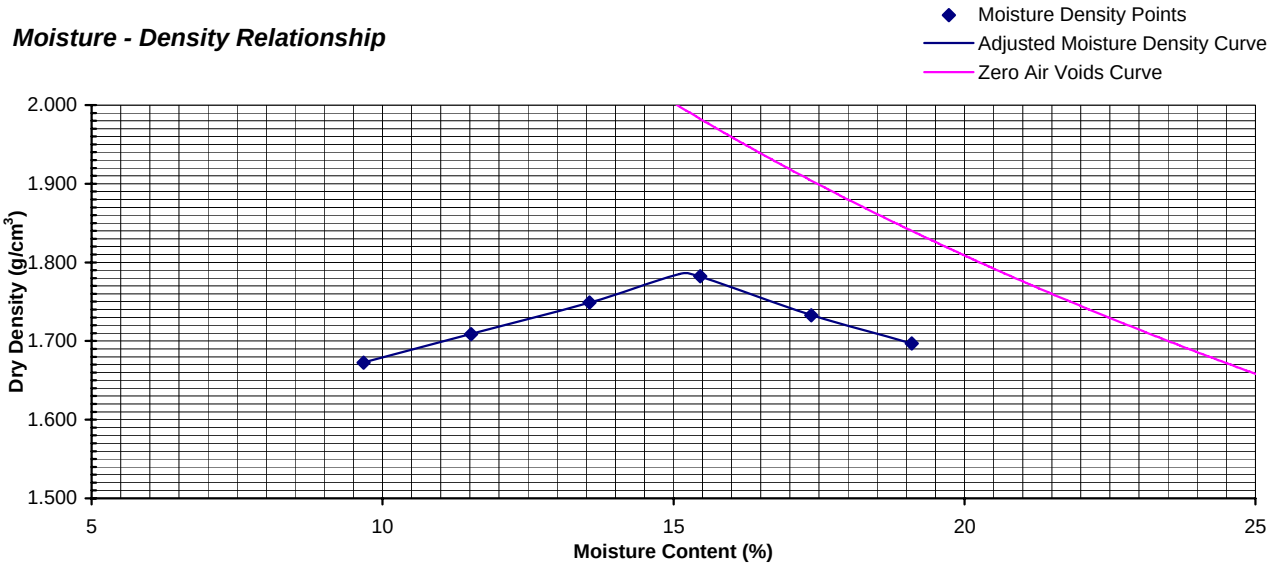
Test Data

Parameter	**Units**	**1**	**2**	**3**	**4**	**5**	**6**
Moisture Content	%	9.68	11.52	13.56	15.46	17.37	19.09
Dry Density	g/cm^3	1.673	1.709	1.749	1.782	1.733	1.697

Results

Parameter	**Units**	**XPS PP Comp 1 Tls**
Max. Wet Density	g/cm^3	2.055
Max. Dry Density	g/cm^3	1.785
Optimum Moisture Content	%	15.1

Moisture - Density Relationship



E. Fisher
Project Technician

B. Bowman
Senior Technologist

TEST REPORT

Compaction Characteristics of Soil Using Standard Effort

Sample ID: XPS PP Comp 2 Tls
Date Completed: 1-Mar-11
Reference: ASTM D 698, SOP 7-18-7 (Test Method A)

Test Details

Standard Proctor	
Hammer Weight (kg)	2.27
Lifts	3
Height of Drop (cm)	30.5
Blows per Layer	25
Volume of Mould (cm^3)	941.82
Compacting Effort ($kN\text{-}m/m^3$)	600
Specific Gravity	2.82

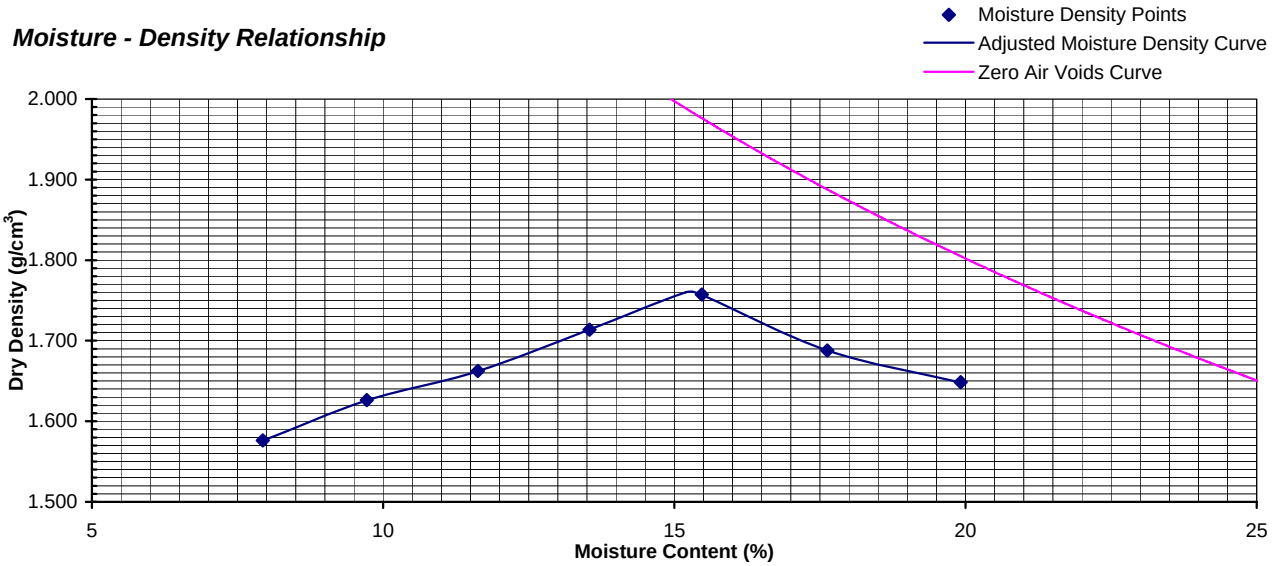
Test Data

Parameter	Units	1	2	3	4	5	6	7
Moisture Content	%	7.93	9.72	11.62	13.55	15.47	17.63	19.92
Dry Density	g/cm^3	1.576	1.626	1.662	1.714	1.757	1.688	1.648

Results

Parameter	Units	XPS PP Comp 2 Tls
Max. Wet Density	g/cm^3	2.028
Max. Dry Density	g/cm^3	1.760
Optimum Moisture Content	%	15.2

Moisture - Density Relationship



E. Fisher
Project Technician

B. Bowman
Senior Technologist

TEST REPORT

Hydraulic Conductivity (Falling Head) in the Flexible Wall Permeameter

Sample ID: Master Tls Blend
Date Completed: 17-Mar-11

Test Method:

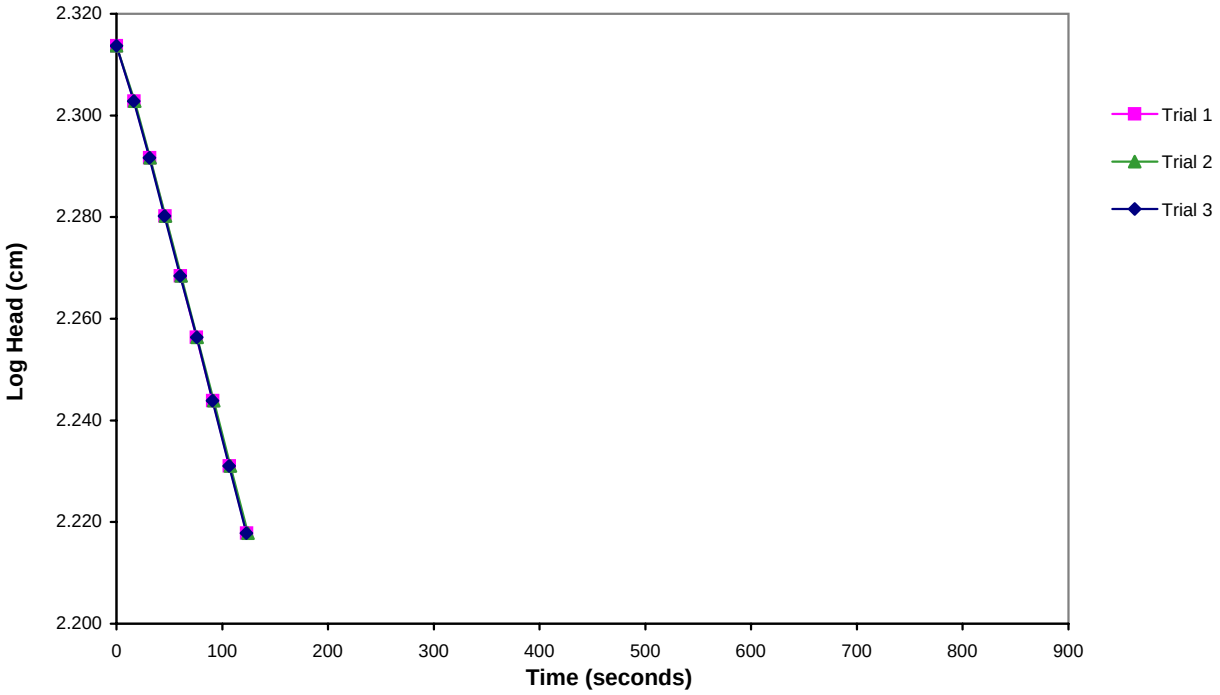
The dry tailings specimen was combined with approximately 13.5% water (by weight), wet compacted with an effort of 600 kN-m/m^3 into a 4" diameter mould and frozen to create a core-like sample. It was then inserted into the flexible wall permeameter where, once the sample thawed, it was saturated (upflow) and a falling head hydraulic conductivity test was completed.

Hydraulic Gradient: 18

Compaction Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Blows per lift	#	25	25	25
Moisture content of sample	%	13.5	13.5	13.5
Moist density	Mg/m^3	1.806	1.806	1.806
Dry Bulk density	g/cm^3	1.590	1.590	1.590

Log Head vs.Time



Permeability Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Slope of Log Head vs. Time		-7.87E-04	-7.81E-04	-7.88E-04
Hydraulic Conductivity @ 20°C	m/sec	4.48E-07	4.45E-07	4.49E-07

E. Fisher
Project Technician, Environmental Testing

Robert J. Caldwell
Group Leader, Environmental Testing

TEST REPORT

Hydraulic Conductivity (Falling Head) in the Flexible Wall Permeameter

Sample ID: Master Tls Blend
Date Completed: 19-Apr-11

Test Method:

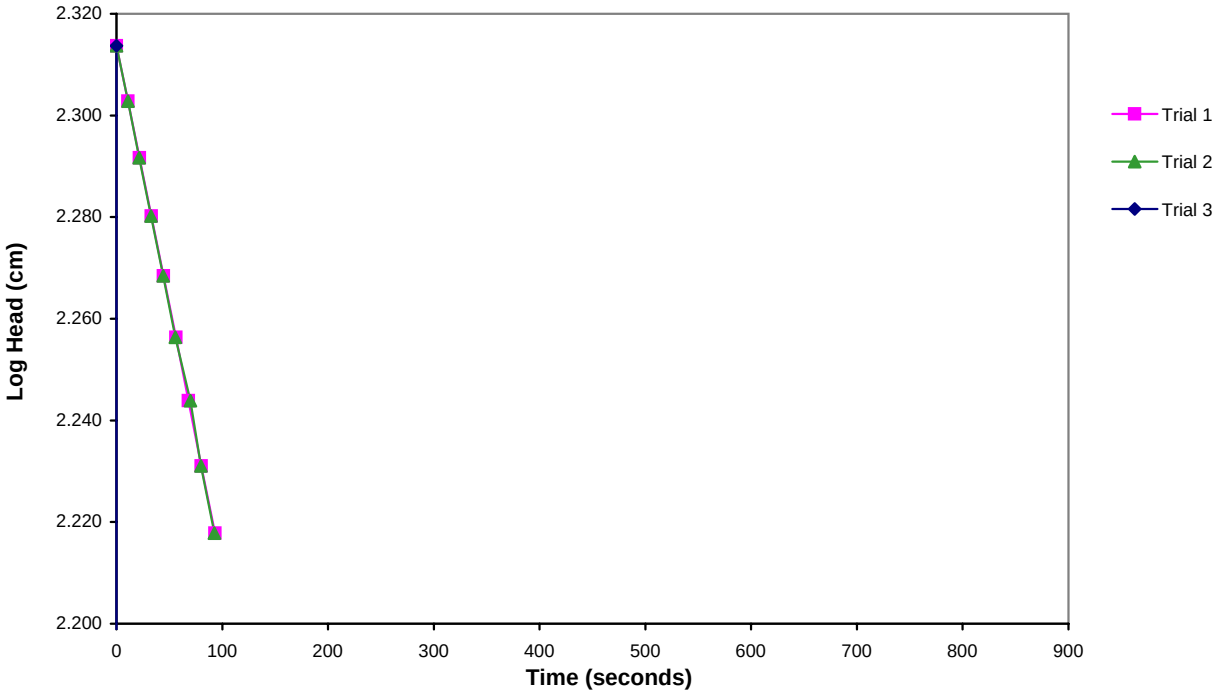
The dry tailings specimen was combined with approximately 13.5% water (by weight), wet compacted with an effort of 600 kN-m/m^3 into a 4" diameter mould and frozen to create a core-like sample. It was then inserted into the flexible wall permeameter where, once the sample thawed, it was saturated (upflow) and a falling head hydraulic conductivity test was completed.

Hydraulic Gradient: 18

Compaction Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Blows per lift	#	25	25	25
Moisture content of sample	%	13.5	13.5	13.5
Moist density	Mg/m^3	1.806	1.806	1.806
Dry Bulk density	g/cm^3	1.590	1.590	1.590

Log Head vs.Time



Permeability Data

Parameter	Unit	Trial 1	Trial 2
Slope of Log Head vs. Time		-1.03E-03	-1.03E-03
Hydraulic Conductivity @ 20°C	m/sec	6.19E-07	6.19E-07

E. Fisher
Project Technician, Environmental Testing

Robert J. Caldwell
Group Leader, Environmental Testing

TEST REPORT

Hydraulic Conductivity (Falling Head) in the Flexible Wall Permeameter

Sample ID: XPS PP Comp 1 Tls
Date Completed: 15-Mar-11

Test Method:

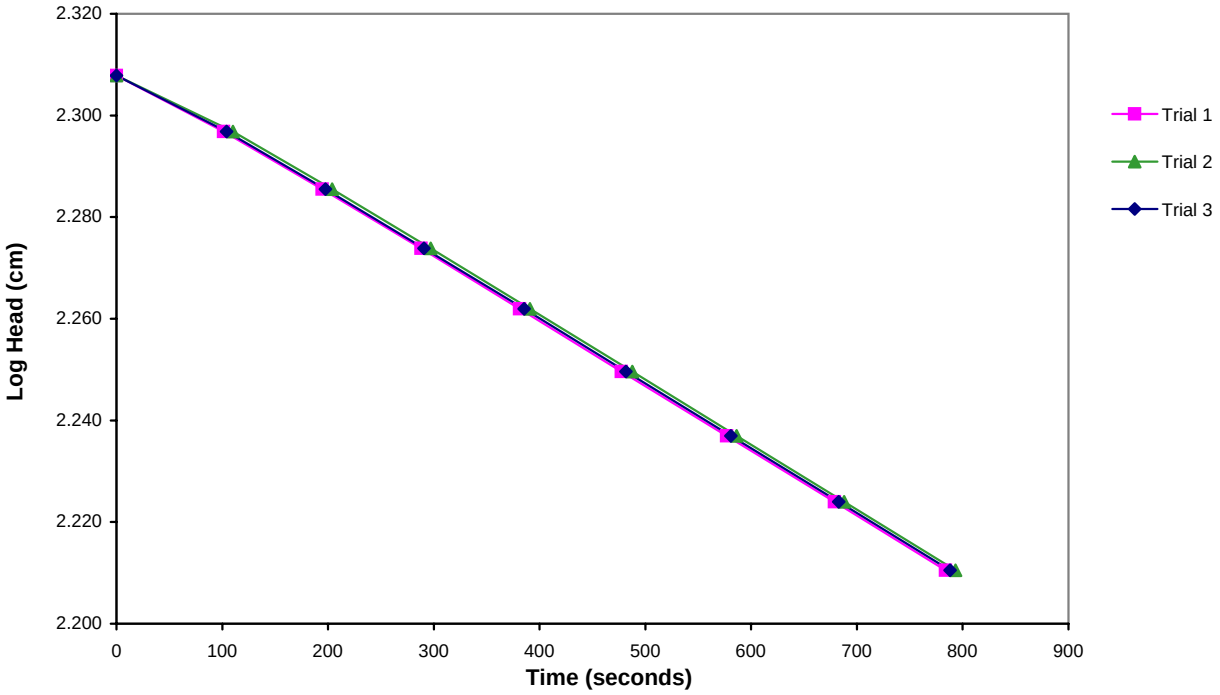
The dry tailings specimen was combined with approximately 13.6% water (by weight), wet compacted with an effort of 600 kN-m/m^3 into a 4" diameter mould and frozen to create a core-like sample. It was then inserted into the flexible wall permeameter where, once the sample thawed, it was saturated (upflow) and a falling head hydraulic conductivity test was completed.

Hydraulic Gradient: 18

Compaction Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Blows per lift	#	25	25	25
Moisture content of sample	%	13.6	13.6	13.6
Moist density	Mg/m^3	1.843	1.843	1.843
Dry Bulk density	g/cm^3	1.623	1.623	1.623

Log Head vs.Time



Permeability Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Slope of Log Head vs. Time		-1.25E-04	-1.24E-04	-1.25E-04
Hydraulic Conductivity @ 20°C	m/sec	7.20E-08	7.15E-08	7.20E-08

E. Fisher
Project Technician, Environmental Testing

Robert J. Caldwell
Group Leader, Environmental Testing

TEST REPORT

Hydraulic Conductivity (Falling Head) in the Flexible Wall Permeameter

Sample ID: XPS PP Comp 2 Tls
Date Completed: 19-Apr-11

Test Method:

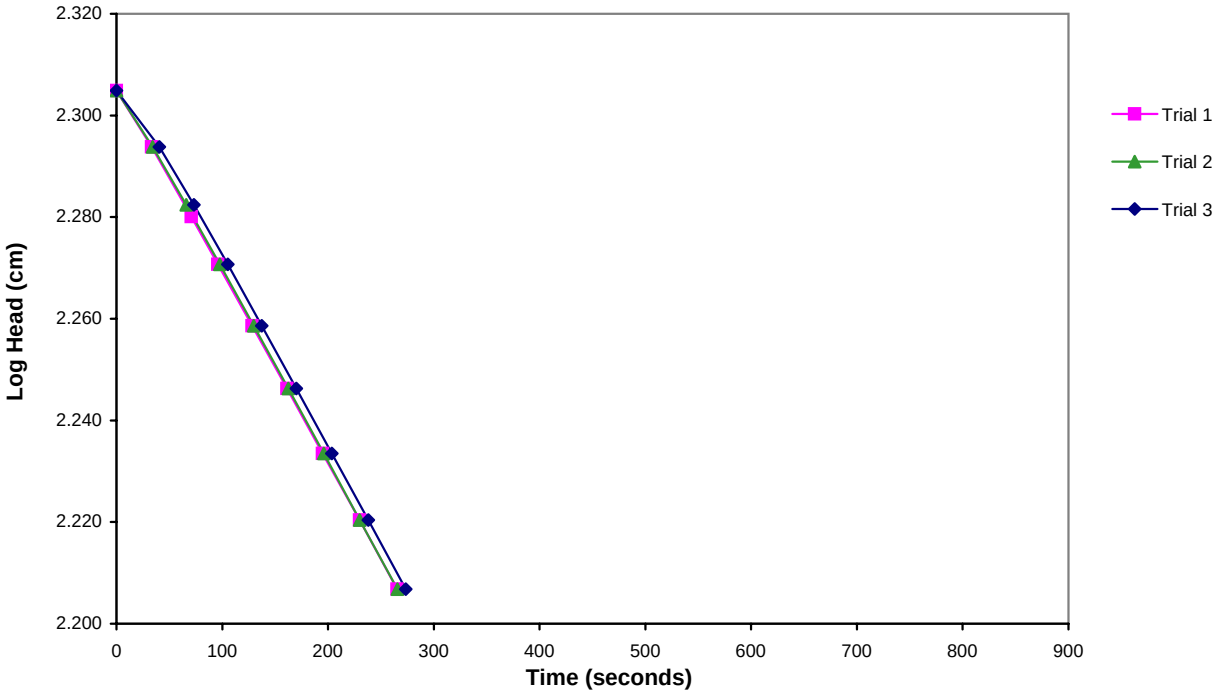
The dry tailings specimen was combined with approximately 13.5% water (by weight), wet compacted with an effort of 600 kN-m/m^3 into a 4" diameter mould and frozen to create a core-like sample. It was then inserted into the flexible wall permeameter where, once the sample thawed, it was saturated (upflow) and a falling head hydraulic conductivity test was completed.

Hydraulic Gradient: 18

Compaction Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Blows per lift	#	25	25	25
Moisture content of sample	%	13.5	13.5	13.5
Moist density	Mg/m^3	1.806	1.806	1.806
Dry Bulk density	g/cm^3	1.590	1.590	1.590

Log Head vs.Time



Permeability Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Slope of Log Head vs. Time		-3.72E-04	-3.72E-04	-3.65E-04
Hydraulic Conductivity @ 20°C	m/sec	2.23E-07	2.23E-07	2.19E-07

E. Fisher
Project Technician, Environmental Testing

Robert J. Caldwell
Group Leader, Environmental Testing

TEST REPORT

Hydraulic Conductivity (Falling Head) in the Flexible Wall Permeameter

Sample ID: XPS PP Comp 2 Tls
Date Completed: 02-May-11

Test Method:

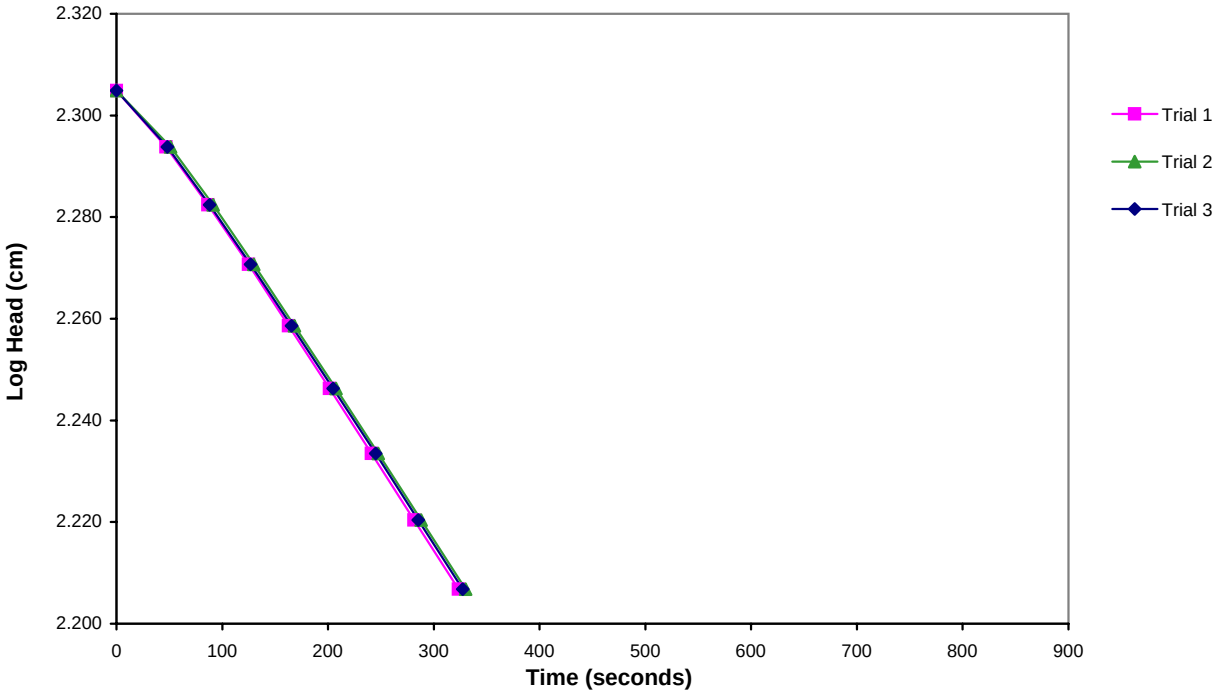
The dry tailings specimen was combined with approximately 13.5% water (by weight), wet compacted with an effort of 600 kN-m/m^3 into a 4" diameter mould and frozen to create a core-like sample. It was then inserted into the flexible wall permeameter where, once the sample thawed, it was saturated (upflow) and a falling head hydraulic conductivity test was completed.

Hydraulic Gradient: 18

Compaction Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Blows per lift	#	25	25	25
Moisture content of sample	%	13.5	13.5	13.5
Moist density	Mg/m^3	1.806	1.806	1.806
Dry Bulk density	g/cm^3	1.590	1.590	1.590

Log Head vs.Time



Permeability Data

Parameter	Unit	Trial 1	Trial 2	Trial 3
Slope of Log Head vs. Time		-3.08E-04	-3.03E-04	-3.04E-04
Hydraulic Conductivity @ 20°C	m/sec	1.75E-07	1.72E-07	1.73E-07

E. Fisher
Project Technician, Environmental Testing

Robert J. Caldwell
Group Leader, Environmental Testing

TEST REPORT

Settled Density Test

Sample ID: XPS PP Comp 1 Tls
Date Completed: 07-Mar-11
Reference: SOP 7-18-1

24 hr

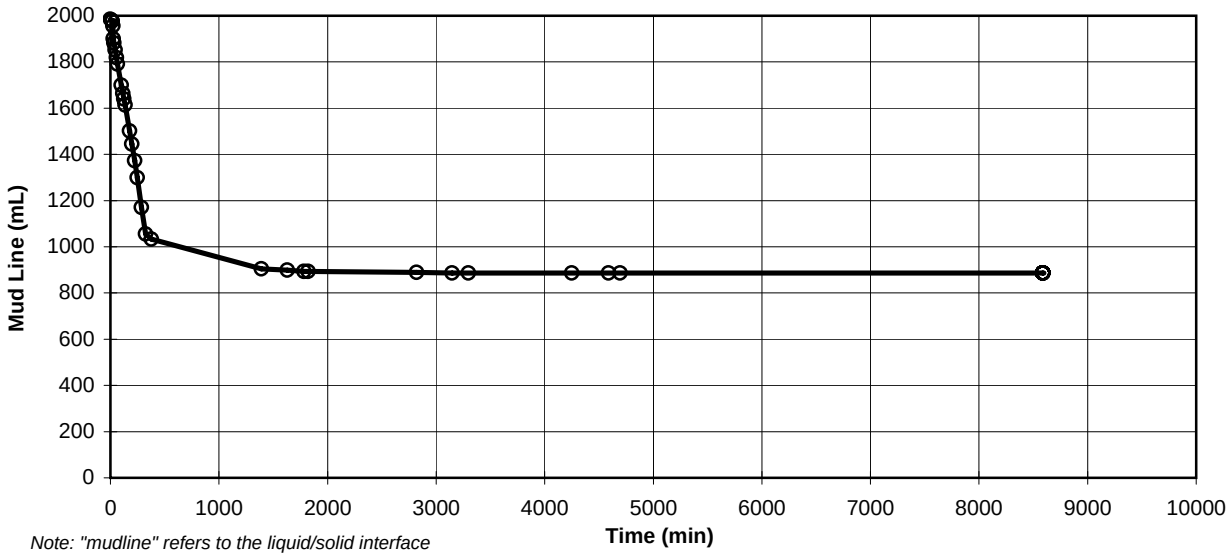
End of test

Test Details

Parameter	Unit	Value
Dry solid SG		2.84
Dry solid weight	g	861.14
Liquid SG		1.00
Temperature	°C	21
Initial pulp height	mm	417
Initial pulp volume	mL	2000
Initial net pulp weight	g	2557.9
Feed pulp density	g/L	1279
Feed percent solids*	%	33.7

** Feed percent solids is calculated based on specific gravity and pulp density*

Height of Mudline Over Time



Note: "mudline" refers to the liquid/solid interface

Final Test Results

Parameter	Unit	Value
Total settling time	min	8588
Final mudline	mL	887
Final percent solids	%	59.6
Final settled density	g/L	1629

E. Fisher
Project Technician

B. Bowman
Senior Technologist

TEST REPORT

Drained Settled Density Test

Sample ID: XPS PP Comp 1 Tls
Date Completed: 07-Mar-11
Reference: SOP 7-18-1

Test Details

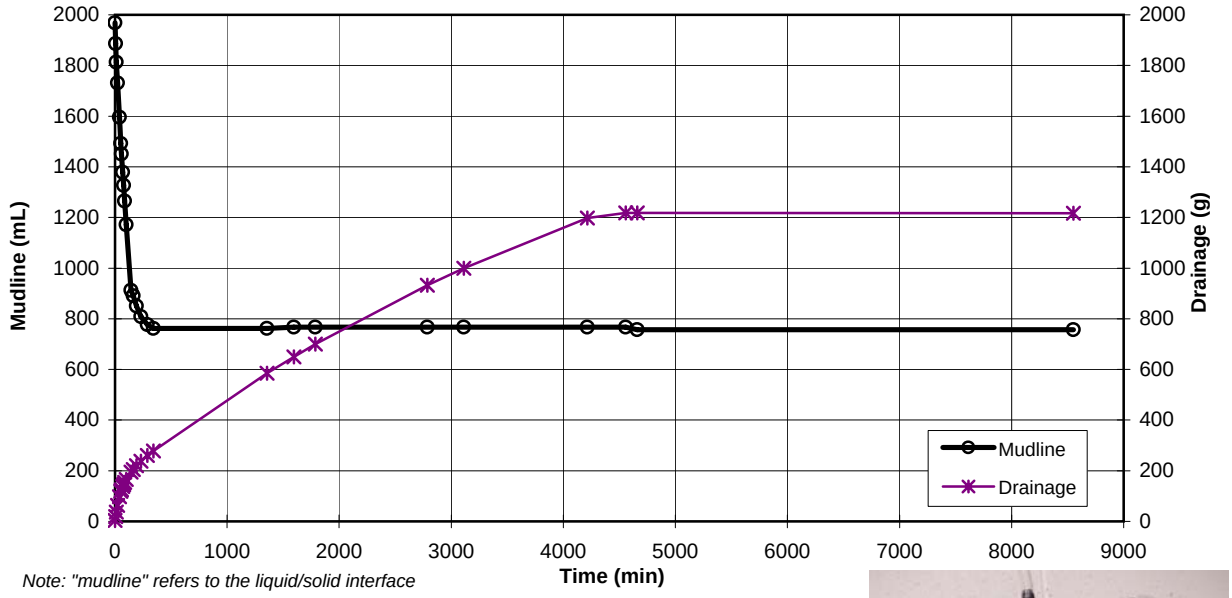
Parameter	Unit	Value
Dry solid SG		2.84
Dry solid weight	g	900.5
Liquid SG		1.00
Temperature	^{o}C	21
Initial pulp height	mm	193

Test Details

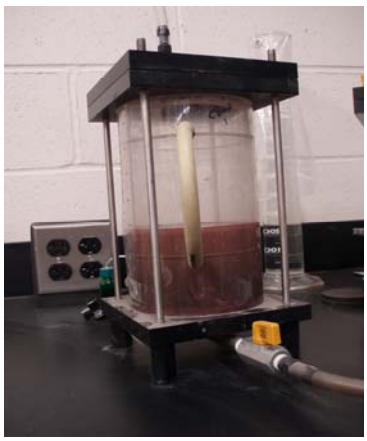
Parameter	Unit	Value
Initial pulp volume	mL	2000
Initial net pulp weight	g	2583.4
Feed pulp density	g/L	1292
Feed percent solids*	%	34.9

** Feed percent solids is calculated based on specific gravity and pulp density*

Height of Mudline Over Time



Note: "mudline" refers to the liquid/solid interface



Final Test Results

Parameter	Unit	Value
Total settling time	min	8553
Final mudline	mL	756
Final percent solids	%	67.2
Final settled density	g/L	1771
Total H_2O released	g	1217
H_2O released/g solids	g/g	1.35
H_20 released (dry wt basis)	%	135

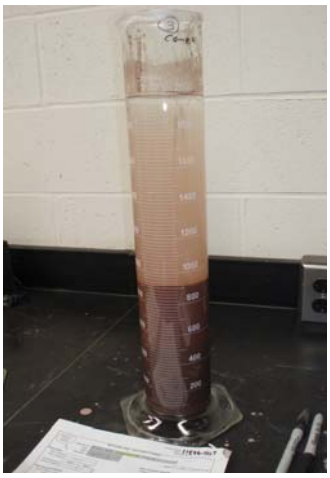
E. Fisher
Project Technician

B. Bowman
Senior Technologist

TEST REPORT

Settled Density Test

Sample ID: XPS PP Comp 2 Tls
Date Completed: 07-Mar-11
Reference: SOP 7-18-1



24 hr

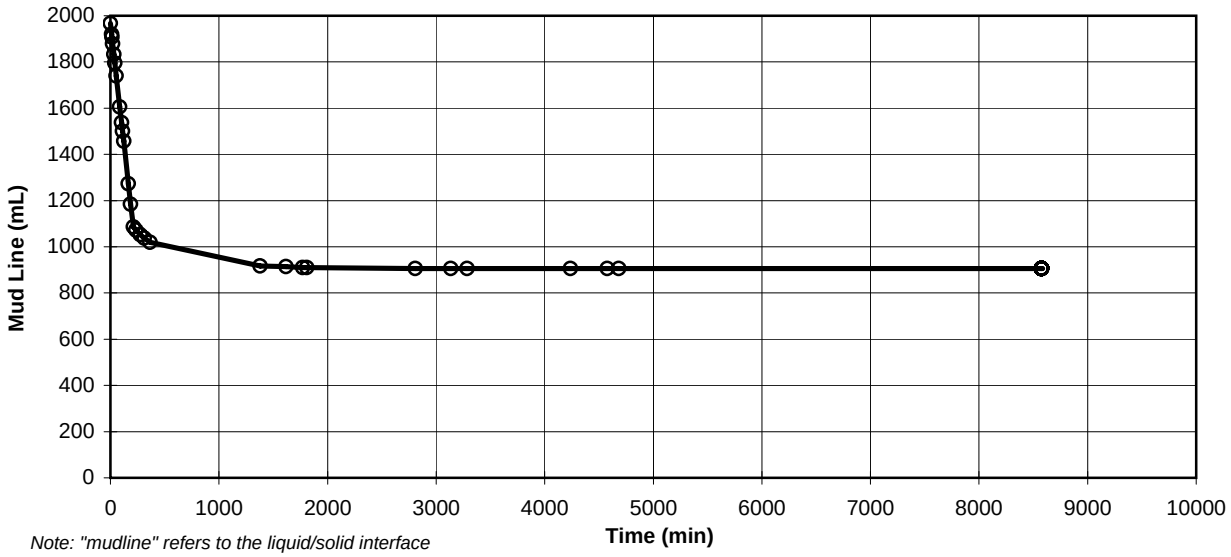
End of test

Test Details

Parameter	Unit	Value
Dry solid SG		2.82
Dry solid weight	g	826.15
Liquid SG		1.00
Temperature	°C	21
Initial pulp height	mm	417
Initial pulp volume	mL	2000
Initial net pulp weight	g	2533.2
Feed pulp density	g/L	1267
Feed percent solids*	%	32.6

** Feed percent solids is calculated based on specific gravity and pulp density*

Height of Mudline Over Time



Note: "mudline" refers to the liquid/solid interface

Final Test Results

Parameter	Unit	Value
Total settling time	min	8576
Final mudline	mL	906
Final percent solids	%	57.4
Final settled density	g/L	1589

E. Fisher
Project Technician

B. Bowman
Senior Technologist

TEST REPORT

Drained Settled Density Test

Sample ID: XPS PP Comp 2 Tls
Date Completed: 07-Mar-11
Reference: SOP 7-18-1

Test Details

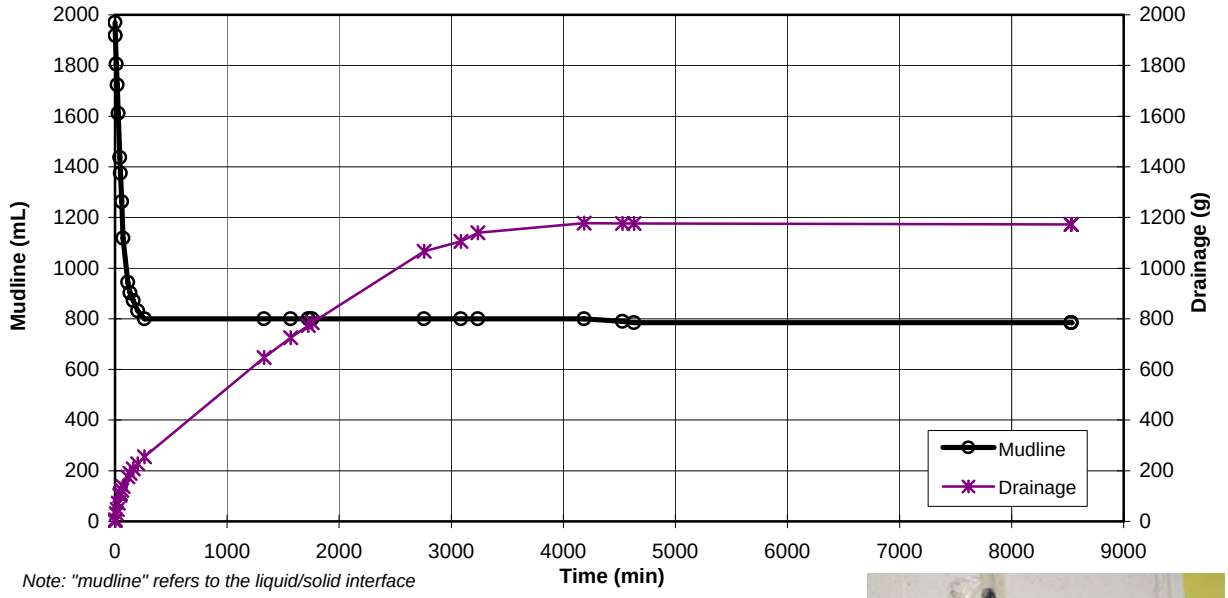
Parameter	Unit	Value
Dry solid SG		2.82
Dry solid weight	g	894.5
Liquid SG		1.00
Temperature	^{o}C	21
Initial pulp height	mm	195

Test Details

Parameter	Unit	Value
Initial pulp volume	mL	2000
Initial net pulp weight	g	2577.3
Feed pulp density	g/L	1289
Feed percent solids*	%	34.7

** Feed percent solids is calculated based on specific gravity and pulp density*

Height of Mudline Over Time



Note: "mudline" refers to the liquid/solid interface

Final Test Results

Parameter	Unit	Value
Total settling time	min	8531
Final mudline	mL	785
Final percent solids	%	65.7
Final settled density	g/L	1736
Total H_2O released	g	1173
H_2O released/g solids	g/g	1.31
H_20 released (dry wt basis)	%	131

E. Fisher
Project Technician

B. Bowman
Senior Technologist