4.1 Proper Scientific Standards

INDEX OF COMMENTS

4.0 Standards and Format

4.1 Proper Scientific Standards

4.1 Proper Scientific Standards

WP 1452 Joint Review Panel
Proper Scientific Standards
The Panel requires sound data for assessing effects. In some cases, the data provided fails to meet appropriate scientific standards leading to conclusions that cannot be substantiated by evidence. In responding to information requests, the Proponent should endeavour to:

- *Standardize measurement units (in metric);*
- *Use appropriate scientific methods and describe them fully;*
- *Demonstrate that environmental baseline data was obtained using high standards in sampling, laboratory, and statistical practices; and,*
- *Provide quantitative data or estimates to replace vague qualifiers (e.g., "some", "extensive").*

RESPONSE
In developing the responses to the information requests, Bilcon placed importance on implementing the above-listed requirements with respect to units, methods, quality of data, and provision of quantified data.

Bilcon has enclosed the missing Certificates of Analysis as requested in the information requests and has included Certificates of Analysis for all new laboratory work, please refer to Appendix 1 in this section.

WP 1525 - Natural Resources Canada
Comments from Reviewer 2:
Section 9.1.3.1 (page 25): SI units should be used as much as possible (m, sec).

RESPONSE
Comment noted

WP 1619 – Nova Scotia Department of Natural Resources – Wildlife Division
The author's use of the term "critical habitat", for example in Section 9.2.0.1, is misapplied in the document. The authors should be aware that the term is a legal one encrypted in SARA, and it has not been defined for most species where the term is used. We suggest use of alternative terminology such as "significant habitat", "important habitat", "preferred habitat", "occupied habitat", "potential habitat", to name a few.

4.1 Proper Scientific Standards

RESPONSE
Errata: Section 9.0

Page	Paragraph	Line	Change
8	4	1	"Critical to important"
23	2	6	"Critical to important"
23	2	15	"Critical to important"
31	last	4	"Critical to important"
31	last	8	"Critical to important"
41	last	2	Delete "Critical"

4.1 Proper Scientific Standards

Appendix 1
Analyses and Certificates of Analysis

4.1 Proper Scientific Standards

ANALYSES AND CERTIFICATES OF ANALYSIS

2002 to 2006

WATER SAMPLE ANALYSIS

2002

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
KERN, DAVID
BUXTON, PAUL
FAX # : 902-532-7707

PSC Project Number : 0207406H
Client Project Number :
Printed : 2002/06/06
Reported : 2002/06/06

Matrix			Water	Water	Water	Water
Philip ID			02-H027788	02-H027789	02-H027790	02-H027791
Client ID			W.W.P. 1	W.W.P. 2	W.W.P. 3	W.W.P. 5
Date Sampled (y/m/d)			02/05/28	02/05/28	02/05/28	02/05/28
Date Received (y/m/d)			02/05/30	02/05/30	02/05/30	02/05/30
Analyte	Units	EQL				
Total Water Digest		-	20020603-A	20020603-B	20020603-B	-
Sodium	mg/L	0.1	21.8	16.3	22.1	-
Potassium	mg/L	0.1	1.2	0.4	0.6	-
Calcium	mg/L	0.1	3.0	2.7	1.6	-
Magnesium	mg/L	0.1	2.6	2.0	1.9	-
Alkalinity (as CaCO3)	mg/L	5.	nd	9.	nd	-
Sulfate	mg/L	2.	15.	15.	20.	-
Chloride	mg/L	1.	32.	22.	29.	-
Reactive Silica (as SiO2)	mg/L	0.5	9.7	5.8	7.1	-
Ortho Phosphate (as P)	mg/L	0.01	0.02	nd	nd	-
Phosphorus	mg/L	0.1	nd	nd(0.5)	nd(0.5)	-
Nitrate + Nitrite (as N)	mg/L	0.05	0.39	nd	nd	-
Nitrate (as N)	mg/L	0.05	0.39	nd	nd	-
Nitrite	mg/L	0.01	nd	nd	nd	-
Ammonia (as N)	mg/L	0.05	nd	nd	nd	-
Color	TCU	5.	12.	22.	26.	-
Total Org. Carbon (by UV)	mg/L	0.5	2.7	4.8	6.3	-
Turbidity	NTU	0.1	1.3	0.4	0.2	-
Conductance (RCAp)	uS/cm	1.	150.	110.	134.	-
pH	Units	-	6.6	6.4	5.7	-
Hardness (as CaCO3)	mg/L	0.1	18.2	15.0	11.8	-
Bicarbonate (as CaCO3)	mg/L	1.	nd(5.)	9.	nd(5.)	-
Carbonate (as CaCO3)	mg/L	1.	nd(5.)	nd	nd(5.)	-
TDS (Calculated)	mg/L	1.	90.	70.	86.	-

Legend:
EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample
Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0207406H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/06
Reported : 2002/06/06

Matrix		Water	Water	Water	Water
Philip ID		02-H027788	02-H027789	02-H027790	02-H027791
Client ID		W.W.P. 1	W.W.P. 2	W.W.P. 3	W.W.P. 5
Date Sampled (y/m/d)		02/05/28	02/05/28	02/05/28	02/05/28
Date Received (y/m/d)		02/05/30	02/05/30	02/05/30	02/05/30
Analyte	Units	EQL	(Continued from previous page)		
Cation Sum	meq/L	0.10	1.35	1.02	1.22	-
Anion Sum	meq/L	0.10	1.34	1.12	1.34	-
Ion Balance	%	-	0.16	4.37	4.65	-
Langlier Index @ 4C		-	-4.06	-4.05	-5.23	-
Langlier Index @ 20C		-	-3.66	-3.65	-4.83	-
Saturation pH @ 4C	Units	-	10.7	10.4	10.9	-
Saturation pH @ 20C	Units	-	10.3	10.0	10.5	-
Total Suspended Solids	mg/L	0.5	2.5	nd(2.)	nd(2.)	9.6
Aluminum	ug/L	10	280	240	320	-
Antimony	ug/L	2.	nd	nd	nd	-
Arsenic	ug/L	2.	nd	nd	nd	-
Barium	ug/L	5.	6.	5.	nd	-
Beryllium	ug/L	5.	nd	nd	nd	-
Bismuth	ug/L	2.	nd	nd	nd	-
Boron	ug/L	5.	19.	14.	16.	-
Cadmium	ug/L	0.3	nd	nd	nd	-
Chromium	ug/L	2.	nd	nd	2.	-
Cobalt	ug/L	1.	nd	nd	nd	-
Copper	ug/L	2.	2.	3.	2.	-
Iron	ug/L	20	170	250	190	-
Lead	ug/L	0.5	nd	nd	nd	-
Manganese	ug/L	2.	16.	29.	16.	-
Mercury	ug/L	0.05	-	-	-	nd

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 3

PSC Analytical Services
Bluewater Road
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Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
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PSC Project Number : 0207406H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/06
Reported : 2002/06/06

Matrix		Water	Water	Water	Water
Philip ID		02-H027788	02-H027789	02-H027790	02-H027791
Client ID		W.W.P. 1	W.W.P. 2	W.W.P. 3	W.W.P. 5
Date Sampled (y/m/d)		02/05/28	02/05/28	02/05/28	02/05/28
Date Received (y/m/d)		02/05/30	02/05/30	02/05/30	02/05/30
Analyte	**Units**	**EQL**	(Continued from previous page)		
Molybdenum	ug/L	2.	nd	nd	nd -
Nickel	ug/L	2.	nd	nd	nd -
Selenium	ug/L	2.	nd	nd	nd -
Silver	ug/L	0.5	nd	nd	nd -
Strontium	ug/L	5.	22.	18.	15. -
Thallium	ug/L	0.1	nd	nd	nd -
Tin	ug/L	2.	nd	nd	nd -
Titanium	ug/L	2.	4.	6.	2. -
Uranium	ug/L	0.1	nd	nd	nd -
Vanadium	ug/L	2.	nd	nd	nd -
Zinc	ug/L	2.	17.	5.	7. -

02-H027789 W.W.P. 2 Elevated EQL for Phosphorus due to low level method blank contamination.

02-H027790 W.W.P. 3 Elevated EQL for Phosphorus due to low level method blank contamination.

02-H027791 W.W.P. 5 TSS aliquot not refrigerated upon receipt. Analysis completed within 24 hours of receipt.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified AK

Inorganic Parameters page : 4

PSC Analytical Services
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0207406H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/06
Reported : 2002/06/06

Certificate of Analysis

Method Summaries:

- Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
- Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
- Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
- Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
- Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995
- Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
- Mercury: Digestion/Cold Vapour Atomic Absorption. Ref: USEPA Method #245.5
- NO2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. Ref. USEPA Method #353.1
- pH: Electrometric @ 25 C. Ref: USEPA Method #150.3
- Phosphorus: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
- Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
- Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
- Turbidity: Nephelometric. Ref: USEPA Method #180.1
- Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.2
- Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8
- Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #350.1
- Nitrite. Roche Cobas/BMC Hitachi 911 Automated Colormetric Analyser. Ref: USEPA Method #354.1
- Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
- Total Metals in Water: Digestion/ICP-MS. Ref: USEPA 200.8

Inorganic Parameters page : 5

PSC Analytical Services
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Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0207406H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/06
Reported : 2002/06/06

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PAUL BUXTON
KERN, DAVID
FAX # : 902-532-7707

PSC Project Number : 0207815H
Client Project Number :
Printed : 2002/06/27
Reported : 2002/06/27

Matrix	Water
Philip ID	02-H029192
Client ID	WWP 5-C
Date Sampled (y/m/d)	02/06/04
Date Received (y/m/d)	02/06/06

Analyte	Units	EQL	
Arsenic (Seawater)	ug/L	0.1	0.4
Cadmium (Seawater)	ug/L	0.1	nd
Chromium (Seawater)	ug/L	0.5	nd
Cobalt (Seawater)	ug/L	0.1	nd
Copper (Seawater)	ug/L	0.1	0.4
Iron (Seawater)	ug/L	1.	25.
Lead (Seawater)	ug/L	0.1	nd
Manganese (Seawater)	ug/L	1.	3.
Nickel (Seawater)	ug/L	0.5	nd
Zinc (Seawater)	ug/L	1.	1.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample
Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

Page verified

Inorganic Parameters page : 2

SC Analytical Services
[illegible] Bluewater Road
[illegible]ord, NS Canada B4B 1G9
el (902) 420-0203
oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0207815H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/27
Reported : 2002/06/27

Certificate of Analysis

Method Summaries:

Trace Analysis of Cd, Co, Cu, Ni, Pb, Fe, and Zn: Chelation/PE Elan 5000 ICP-MS. Ref: USEPA Method #200.8
Trace Analysis of Mn: Chelation/PE Elan 5000 ICP-MS. Ref USEPA Method #200.8
Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8

Deficiency - There was a sample deficiency with one or more of the samples submitted. Please see faxed Sample Integrity Form for details on which test and the sample description.

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
FAX # : 902-532-7707
PSC Project Number : 0208332H
Client Project Number :
Printed : 2002/06/21
Reported : 2002/06/21

Matrix		Water	Water	Water
Philip ID		02-H031682	02-H031683	02-H031684
Client ID		W.W.P.1-A	W.W.P.2-A	W.W.P.6(A-C)
Date Sampled (y/m/d)		02/06/13	02/06/13	02/06/13
Date Received (y/m/d)		02/06/17	02/06/17	02/06/17
Analyte	Units	EQL		
Total Water Digest		-	-	20020619-B
Sodium	mg/L	0.1	-	18.7
Potassium	mg/L	0.1	-	0.5
Calcium	mg/L	0.1	-	1.6
Magnesium	mg/L	0.1	-	1.7
Alkalinity (as CaCO3)	mg/L	5.	-	nd
Sulfate	mg/L	2.	-	15.
Chloride	mg/L	1.	-	26.
Reactive Silica (as SiO2)	mg/L	0.5	-	6.6
Ortho Phosphate (as P)	mg/L	0.01	-	nd(0.02)
Phosphorus	mg/L	0.1	-	nd
Nitrate + Nitrite (as N)	mg/L	0.05	-	nd
Nitrate (as N)	mg/L	0.05	-	nd
Nitrite	mg/L	0.01	-	nd
Ammonia (as N)	mg/L	0.05	-	nd
Color	TCU	5.	-	38.
Total Org. Carbon (by UV)	mg/L	0.5	-	9.9
Turbidity	NTU	0.1	-	0.1
Conductance (RCAp)	uS/cm	1.	-	123.
pH	Units	-	-	5.9
Hardness (as CaCO3)	mg/L	0.1	-	11.0
Bicarbonate (as CaCO3)	mg/L	1.	-	nd(5.)
Carbonate (as CaCO3)	mg/L	1.	-	nd(5.)
TDS (Calculated)	mg/L	1.	-	73.

Legend:
EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample
Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
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[illegible]ford, NS Canada B4B 1G9
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Toll free (800) 565-7227
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Client : Eastern Canada Bioremediation
P.O. Box 98
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NS B0S 1A0

KERN, DAVID

FAX # : 902-532-7707

PSC Project Number : 0208332H
Client Project Number :

Printed : 2002/06/21
Reported : 2002/06/21

Matrix		Water	Water	Water
Philip ID		02-H031682	02-H031683	02-H031684
Client ID		W.W.P.1-A	W.W.P.2-A	W.W.P.6(A-C)
Date Sampled (y/m/d)		02/06/13	02/06/13	02/06/13
Date Received (y/m/d)		02/06/17	02/06/17	02/06/17
Analyte	Units	EQL	(Continued from previous page)	
Cation Sum	meq/L	0.10	-	-	1.05
Anion Sum	meq/L	0.10	-	-	1.15
Ion Balance	%	-	-	-	4.45
Langlier Index @ 4C		-	-	-	-5.03
Langlier Index @ 20C		-	-	-	-4.63
Saturation pH @ 4C	Units	-	-	-	10.9
Saturation pH @ 20C	Units	-	-	-	10.5
Total Suspended Solids	mg/L	0.5	4.0	nd(2.)	nd(2.)
Aluminum	ug/L	10	-	-	260
Antimony	ug/L	2.	-	-	nd
Arsenic	ug/L	2.	-	-	nd
Barium	ug/L	5.	-	-	nd
Beryllium	ug/L	5.	-	-	nd
Bismuth	ug/L	2.	-	-	nd
Boron	ug/L	5.	-	-	15.
Cadmium	ug/L	0.3	-	-	nd
Chromium	ug/L	2.	-	-	nd
Cobalt	ug/L	1.	-	-	nd
Copper	ug/L	2.	-	-	2.
Iron	ug/L	20	-	-	300
Lead	ug/L	0.5	-	-	0.6
Manganese	ug/L	2.	-	-	12.
Molybdenum	ug/L	2.	-	-	nd

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 3

PSC Analytical Services
[illegible] Bluewater Road
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Fax (902) 420-8612

Client : Eastern Canada Bioremediation
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Annapolis Royal
NS B0S 1A0

KERN, DAVID

PSC Project Number : 0208332H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/21
Reported : 2002/06/21

Matrix		Water	Water	Water
Philip ID		02-H031682	02-H031683	02-H031684
Client ID		W.W.P.1-A	W.W.P.2-A	W.W.P.6(A-C)
Date Sampled (y/m/d)		02/06/13	02/06/13	02/06/13
Date Received (y/m/d)		02/06/17	02/06/17	02/06/17
Analyte	Units	EQL	(Continued from previous page)	
Nickel	ug/L	2.	-	- nd
Selenium	ug/L	2.	-	- nd
Silver	ug/L	0.5	-	- nd
Strontium	ug/L	5.	-	- 17.
Thallium	ug/L	0.1	-	- nd
Tin	ug/L	2.	-	- nd
Titanium	ug/L	2.	-	- nd
Uranium	ug/L	0.1	-	- nd
Vanadium	ug/L	2.	-	- nd
Zinc	ug/L	2.	-	- 5.

02-H031684 W.W.P.6(A-C) Orthophosphorous; EQL = 0.02 due to elevated method blank.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

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Client : Eastern Canada Bioremediation KERN, DAVID
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NS B0S 1A0
PSC Project Number : 0208332H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/21
Reported : 2002/06/21

Certificate of Analysis

Method Summaries:

Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995
Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
NO2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. Ref. USEPA Method #353.1
nH: Electrometric @ 25 C. Ref: USEPA Method #150.3
osphorus: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
Turbidity: Nephelometric. Ref: USEPA Method #180.1
Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.2
Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8
Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #350.1
Nitrite. Roche Cobas/BMC Hitachi 911 Automated Colormetric Analyser. Ref: USEPA Method #354.1
Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
Total Metals in Water: Digestion/ICP-MS. Ref: USEPA 200.8

Inorganic Parameters page : 5

SC Analytical Services
[illegible] Bluewater Road
ord, NS Canada B4B 1G9
el (902) 420-0203
oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0

KERN, DAVID

PSC Project Number : 0208332H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/06/21
Reported : 2002/06/21

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
FAX # : 902-532-7707

PSC Project Number : 0208758H
Client Project Number :
Printed : 2002/07/02
Reported : 2002/07/02

Matrix	Water
Philip ID	02-H033078
Client ID	W.W.P. 7 A -C
Date Sampled (y/m/d)	02/06/20
Date Received (y/m/d)	02/06/24

Analyte	Units	EQL	
Total Water Digest		-	20020625-D
Sodium	mg/L	0.1	12.0
Potassium	mg/L	0.1	0.4
Calcium	mg/L	0.1	1.7
Magnesium	mg/L	0.1	1.4
Alkalinity (as CaCO3)	mg/L	5.	nd
Sulfate	mg/L	2.	13.
Chloride	mg/L	1.	17.
Reactive Silica (as SiO2)	mg/L	0.5	4.8
Ortho Phosphate (as P)	mg/L	0.01	nd
Phosphorus	mg/L	0.1	nd
Nitrate + Nitrite (as N)	mg/L	0.05	nd
Nitrate (as N)	mg/L	0.05	nd
Nitrite	mg/L	0.01	nd
Ammonia (as N)	mg/L	0.05	nd
Color	TCU	5.	36.
Total Org. Carbon (by UV)	mg/L	0.5	8.0
Turbidity	NTU	0.1	0.2
Conductance (RCAp)	uS/cm	1.	89.
pH	Units	-	6.4
Hardness (as CaCO3)	mg/L	0.1	10.0
Bicarbonate (as CaCO3)	mg/L	1.	nd(5.)
Carbonate (as CaCO3)	mg/L	1.	nd(5.)
TDS (Calculated)	mg/L	1.	54.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0208758H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/02
Reported : 2002/07/02

Matrix	Water
Philip ID	02-H033078
Client ID	W.W.P. 7 A -C
Date Sampled (y/m/d)	02/06/20
Date Received (y/m/d)	02/06/24

Analyte	Units	EQL	(Continued from previous page)
Cation Sum	meq/L	0.10	0.74
Anion Sum	meq/L	0.10	0.85
Ion Balance	%	-	7.37
Langlier Index @ 4C		-	-4.50
Langlier Index @ 20C		-	-4.10
Saturation pH @ 4C	Units	-	10.9
Saturation pH @ 20C	Units	-	10.5
Total Suspended Solids	mg/L	0.5	nd(2.)
Aluminum	ug/L	10	220
Antimony	ug/L	2.	nd
Arsenic	ug/L	2.	nd
Barium	ug/L	5.	nd
Beryllium	ug/L	5.	nd
Bismuth	ug/L	2.	nd
Boron	ug/L	5.	14.
Cadmium	ug/L	0.3	nd
Chromium	ug/L	2.	nd
Cobalt	ug/L	1.	nd
Copper	ug/L	2.	2.
Iron	ug/L	20	130
Lead	ug/L	0.5	nd
Manganese	ug/L	2.	5.
Molybdenum	ug/L	2.	nd

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 3

PSC Analytical Services
5 Bluewater Road
Bedford, NS Canada B4B 1G9
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Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0208758H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/02
Reported : 2002/07/02

Matrix	Water
Philip ID	02-H033078
Client ID	W.W.P. 7 A -C
Date Sampled (y/m/d)	02/06/20
Date Received (y/m/d)	02/06/24

Analyte	Units	EQL	(Continued from previous page)
Nickel	ug/L	2.	nd
Selenium	ug/L	2.	nd
Silver	ug/L	0.5	nd
Strontium	ug/L	5.	12.
Thallium	ug/L	0.1	nd
Tin	ug/L	2.	nd
Titanium	ug/L	2.	nd
Uranium	ug/L	0.1	nd
Vanadium	ug/L	2.	nd
Zinc	ug/L	2.	6.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 4

PSC Analytical Services
5 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0208758H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/02
Reported : 2002/07/02

Certificate of Analysis

Method Summaries:

- Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
- Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
- Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
- Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
- Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995

Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
NO2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. Ref. USEPA Method #353.1
pH: Electrometric @ 25 C. Ref: USEPA Method #150.3
Phosphorus: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
Turbidity: Nephelometric. Ref: USEPA Method #180.1
Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.2
Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8
Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #350.1
Nitrite. Roche Cobas/BMC Hitachi 911 Automated Colormetric Analyser. Ref: USEPA Method #354.1
Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
Total Metals in Water: Digestion/ICP-MS. Ref: USEPA 200.8

Inorganic Parameters page : 5

PSC Analytical Services
5 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
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NS B0S 1A0

PSC Project Number : 0208758H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/02
Reported : 2002/07/02

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0209320H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2002/07/12
Reported : 2002/07/12

Matrix	Water
Philip ID	02-H035182
Client ID	WWP4-A-C
Date Sampled (y/m/d)	02/07/02
Date Received (y/m/d)	02/07/04

Analyte	Units	EQL	
Total Water Digest		-	20020705-A
Sodium	mg/L	0.1	17.3
Potassium	mg/L	0.1	0.7
Calcium	mg/L	0.1	3.4
Magnesium	mg/L	0.1	2.6
Alkalinity (as CaCO3)	mg/L	5.	15.
Sulfate	mg/L	2.	9.
Chloride	mg/L	1.	27.
Reactive Silica (as SiO2)	mg/L	0.5	9.3
Ortho Phosphate (as P)	mg/L	0.01	nd(0.02)
Phosphorus	mg/L	0.1	0.1
Nitrate + Nitrite (as N)	mg/L	0.05	nd
Nitrate (as N)	mg/L	0.05	nd
Nitrite	mg/L	0.01	nd
Ammonia (as N)	mg/L	0.05	nd
Color	TCU	5.	19.
Total Org. Carbon (by UV)	mg/L	0.5	4.4
Turbidity	NTU	0.1	0.2
Conductance (RCAp)	uS/cm	1.	141.
pH	Units	-	7.2
Hardness (as CaCO3)	mg/L	0.1	19.2
Bicarbonate (as CaCO3)	mg/L	1.	15.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
\- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
100 Bluewater Road
Ford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
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Annapolis Royal
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PSC Project Number : 0209320H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/12
Reported : 2002/07/12

Matrix	Water
Philip ID	02-H035182
Client ID	WWP4-A-C
Date Sampled (y/m/d)	02/07/02
Date Received (y/m/d)	02/07/04

Analyte	Units	EQL	(Continued from previous page)
Carbonate (as CaCO3)	mg/L	1.	nd
TDS (Calculated)	mg/L	1.	79.
Cation Sum	meq/L	0.10	1.16
Anion Sum	meq/L	0.10	1.25
Ion Balance	%	-	3.92
Langlier Index @ 4C		-	-2.93
Langlier Index @ 20C		-	-2.53
Saturation pH @ 4C	Units	-	10.1
Saturation pH @ 20C	Units	-	9.73
Total Suspended Solids	mg/L	0.5	nd(2.)
Aluminum	ug/L	10	110
Antimony	ug/L	2.	nd
Arsenic	ug/L	2.	nd
Barium	ug/L	5.	nd
Beryllium	ug/L	5.	nd
Bismuth	ug/L	2.	nd
Boron	ug/L	5.	18.
Cadmium	ug/L	0.3	nd
Chromium	ug/L	2.	nd
Cobalt	ug/L	1.	nd
Copper	ug/L	2.	2.
Iron	ug/L	20	90
Lead	ug/L	0.5	nd
Manganese	ug/L	2.	13.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 3

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0209320H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/12
Reported : 2002/07/12

Matrix	Water
Philip ID	02-H035182
Client ID	WWP4-A-C
Date Sampled (y/m/d)	02/07/02
Date Received (y/m/d)	02/07/04

Analyte	Units	EQL	(Continued from previous page)
Molybdenum	ug/L	.2.	nd
Nickel	ug/L	2.	nd
Selenium	ug/L	2.	nd
Silver	ug/L	0.5	nd
Strontium	ug/L	.5.	23.
Thallium	ug/L	0.1	nd
Tin	ug/L	2.	nd
Titanium	ug/L	2.	2.
Uranium	ug/L	0.1	0.1
Vanadium	ug/L	2.	nd
Zinc	ug/L	2.	4.

02-H035182 WWP4-A-C Elevated EQL for Potassium (< 0.2 mg/L) due to instrument precision.

02-H035182 WWP4-A-C Orthophosphorous; EQL = 0.02 due to elevated method blank.

Legend:

EQL = Estimated Quantitation Limit for routine analysis
nd = not detected above standard EQL
nd() = not detected at the elevated EQL specified due to matrix interferences or sample pre-dilution
- = Parameter not requested in Sample

Note : Soil results are expressed as air dry weight basis. Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 4

Analytical Services
100 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0209320H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/12
Reported : 2002/07/12

Certificate of Analysis

Method Summaries:

Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995
Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
NO2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. Ref. USEPA Method #353.1
pH: Electrometric @ 25 C. Ref: USEPA Method #150.3
Phosphorus: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
Turbidity: Nephelometric. Ref: USEPA Method #180.1
Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.2
Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8
Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #350.1
Nitrite. Roche Cobas/BMC Hitachi 911 Automated Colormetric Analyser. Ref: USEPA Method #354.1
Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
Total Metals in Water: Digestion/ICP-MS. Ref: USEPA 200.8

Inorganic Parameters page : 5

Analytical Services
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Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0209320H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/07/12
Reported : 2002/07/12

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0210238H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2002/09/05
Reported : 2002/09/05

Matrix	Water
Philip ID	02-H038806
Client ID	W.W.P. 5-A /-C
Date Sampled (y/m/d)	02/07/17
Date Received (y/m/d)	02/07/19

Analyte	Units	EQL	
Total Suspended Solids	mg/L	0.5	19.2
Arsenic (Seawater)	ug/L	0.1	0.5
Cadmium (Seawater)	ug/L	0.1	nd
Chromium (Seawater)	ug/L	0.5	0.5
Cobalt (Seawater)	ug/L	0.1	nd
Copper (Seawater)	ug/L	0.1	0.8
Iron (Seawater)	ug/L	1.	120
Lead (Seawater)	ug/L	0.1	0.5
Manganese (Seawater)	ug/L	1.	22.
Mercury	ug/L	0.05	0.06
Nickel (Seawater)	ug/L	0.5	0.6
Zinc (Seawater)	ug/L	1.	1.

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

C Analytical Services
0 Bluewater Road
dford, NS Canada B4B 1G9
1 (902) 420-0203
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x (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0210238H
Client Project Number :

FAX # : 902-532-7707
Printed : 2002/09/05
Reported : 2002/09/05

Certificate of Analysis

Method Summaries:

Mercury: Digestion/Cold Vapour Atomic Absorption. Ref: USEPA Method #245.5
Trace Analysis of Cd, Co, Cu, Ni, Pb, Fe, and Zn: Chelation/PE Elan 5000 ICP-MS. Ref: USEPA Method #200.8
Trace Analysis of Mn: Chelation/PE Elan 5000 ICP-MS. Ref USEPA Method #200.8
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

WATER SAMPLE ANALYSIS

2003

PSC

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0307329H
Client Project Number :

KERN, DAVID
BUXTON, PAUL

FAX # : 902-532-7707
Printed : 2003/05/15
Reported : 2003/05/15

Matrix	Water
Philip ID	03-H025045
Client ID	WWP2-A
Date Sampled (y/m/d)	03/05/06
Date Received (y/m/d)	03/05/08

Analyte	Units	EQL	
pH	Units	-	6.7
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, our instruments did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0307329H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/05/15
Reported : 2003/05/15

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number: 0307T43E
Client Project Number :

BUXTON, PAUL
KEARN, DAVID
FAX # 2-1707
P[illegible] 03/05/22
Reported: 2003/05/22

Matrix		Water
Philip ID		03-H026697
Client ID		WWP-2 A&B
Date Sampled (y/m/d)		03/05/13
Date Received (y/m/d)		03/05/15

Analyte	Units	EQL	
pH	Units	-	7.0
Total Suspended Solids	mg/L	0.5	2.2

Legend EQL = Estimated Quantitation Limit is the m[illegible] concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis unless otherwise stated.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediat[illegible] BUXTON, PAUL
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0307743H
Client Project Number :

FAX # : 532-7707
Printed : 2003/05/22
Reported : 2003/05/22

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (p[illegible]
1 ug/L = 0.001 mg/L = 1 part per billion (p[illegible])

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arsenovich

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Num
Client Project

XERN, DAVID
BUXTON, PAUL

FAX # : 902-532-7707
Printed : 2003/05/27
Reported : 2003/05/

Matrix	Water
Philip ID	03-H028330
Client ID	WWP-2-A & B
Date Sampled (y/m/d)	03/05/20
Date Received (y/m/d)	03/05/22

Analyte	Units	EQL	
pH	Units	-	6.8
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

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Inorganic Parameters page : 2

PSC Analytical Services
10 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0308108H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/05/27
Reported : 2003/05/27

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1
Total Suspended Solids: Gravimetric. Ref. USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

PSC

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0308567H
Client Project Number :

KERN, DAVID

FAX # : 532-7707
Printed : 2003/06/03
Reported : 2003/06/03

Matrix	Water
Philip ID	03-H030308
Client ID	WWP-2 A&B
Date Sampled (y/m/d)	03/05/27
Date Received (y/m/d)	03/05/29

Analyte	Units	EQL	
pH	Units	-	6.4
Total Suspended Solids	mg/L	0.5	4.2

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0308567H
Client Project Number :

FAX # : 532-7707
Printed : 2003/06/03
Reported : 2003/06/03

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0309288H
Client Project Number :

PAUL BUXTON
KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/06/16
Reported : 2003/06/16

Matrix			Water	Water
Philip ID			03-H033192	03-H033193
Client ID			WWP-2-A & B	WWP-3-A & B
Date Sampled (y/m/d)			03/06/05	03/06/05
Date Received (y/m/d)			03/06/09	03/06/09
Analyte	Units	EQL		
pH	Units	-	6.8	6.9
Total Suspended Solids	mg/L	0.5	10.0	2.2

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
[illegible] Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0309288H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/06/16
Reported : 2003/06/16

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0309662H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/06/18
Reported : 2003/06/18

Matrix	Water
Philip ID	03-H035030
Client ID	WWP-2-A
Date Sampled (y/m/d)	03/06/10
Date Received (y/m/d)	03/06/13

Analyte	Units	EQL	
pH	Units	-	6.6
Total Suspended Solids	mg/L	0.5	19.5

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, our instruments did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
Bluewater Road
edford, NS Canada B4B 1G9
el (902) 420-0203
oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0309662H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/06/18
Reported : 2003/06/18

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0310040H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/06/26
Reported : 2003/06/26

Matrix			Water	Water
Philip ID			03-H036745	03-H036746
Client ID			WWP-2	WWP-5
Date Sampled (y/m/d)			03/06/17	03/06/17
Date Received (y/m/d)			03/06/19	03/06/19
Analyte	**Units**	**EQL**		
pH	Units	-	6.6	7.8
Total Suspended Solids	mg/L	0.5	7.0	38.0

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified ...

Inorganic Parameters page : 2

L. Analytical Services
00 Bluewater Road
edford, NS Canada B4B 1G9
el (902) 420-0203
oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0310040H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/06/26
Reported : 2003/06/26

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Analytical Test Results

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0310040H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/06/26
Reported : 2003/06/26

Matrix	Water
Philip ID	03-H036746
Description	
Client ID	WWP-5
Date Sampled (y/m/d)	03/06/17
Date Received (y/m/d)	03/06/19

Analyte	Units	EQL	
Salinity in Water		2.	32.

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND ( ) = Not Detected, our instruments did not detect anything above EQL. Raised EQL listed in Parenthesis.
- = Dash is reported when parameter not requested in sample.
Event # = PSC Quality Control Reference number for QC samples run with your sample.
%REC = Surrogate Recovery Values are results of PSC quality control tests.
Note : Soil results are expressed on a dry weight basis.
: Food results are expressed on a wet weight basis.

page verified

Analytical Test Results page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0

KERN, DAVID

PSC Project Number : 0310040H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/06/26
Reported : 2003/06/26

Certificate of Analysis

Method Summaries:

- Salinity, Electrical Conductivity Method, Standard Method for the Examination of Water and Wastewater 20th ed., 2-48, 2-49. Unitless results are consistent with past results reported using parts per thousand units.

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Industrial Chemistry Parameters:
Industrial Chemistry Manager : Robert K. Boss

ANALYTICAL SERVICES

Inorganic Parameters

lient : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0310513H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/07/02
Reported : 2003/07/02

Matrix	Water
Philip ID	03-H038586
Client ID	WWP-2-A & B
Date Sampled (y/m/d)	03/06/24
Date Received (y/m/d)	03/06/26

Analyte	Units	EQL	
pH	Units	-	6.8
Total Suspended Solids	mg/L	0.5	33.8

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, our instruments did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
5 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0310513H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/07/02
Reported : 2003/07/02

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0310957H
Client Project Number :

PAUL BUXTON

FAX # : 902-532-7707
Printed : 2003/07/09
Reported : 2003/07/09

Matrix	Water
Philip ID	03-H040395
Client ID	WWP-2-Aand B
Date Sampled (y/m/d)	03/07/02
Date Received (y/m/d)	03/07/04

Analyte	Units	EQL	
pH	Units	-	7.0
Total Suspended Solids	mg/L	0.5	23.3

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0310957H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/07/09
Reported : 2003/07/09

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Terry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0311369H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/07/17
Reported : 2003/07/17

Matrix	Water
Philip ID	03-H042253
Client ID	WWP-2-A and WWP-2-B
Date Sampled (y/m/d)	03/07/09
Date Received (y/m/d)	03/07/11

Analyte	Units	EQL	
pH	Units	-	6.9
Total Suspended Solids	mg/L	0.5	13.0

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
0 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0311369H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/07/17
Reported : 2003/07/17

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0311780H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/07/24
Reported : 2003/07/24

Matrix	Water
Philip ID	03-H044168
Client ID	WWP-2-A and WWP-2-B
Date Sampled (y/m/d)	03/07/17
Date Received (y/m/d)	03/07/18

Analyte	Units	EQL	
pH	Units	-	7.2
Total Suspended Solids	mg/L	0.5	14.0

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0311780H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/07/24
Reported : 2003/07/24

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0312243H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/07/31
Reported : 2003/07/31

Matrix			Water	Water
Philip ID			03-H046216	03-H046217
Client ID			WWP-2-A&B	WWP-8-A&B
Date Sampled (y/m/d)			03/07/23	03/07/23
Date Received (y/m/d)			03/07/25	03/07/25
Analyte	**Units**	**EQL**		
pH	Units	-	6.5	6.2
Total Suspended Solids	mg/L	0.5	14.2	27.5

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
00 Bluewater Road
edford, NS Canada B4B 1G9
el (902) 420-0203
oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0312243H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/07/31
Reported : 2003/07/31

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0312541H
Client Project Number :

BUXTON, PAUL

FAX # : 902-532-7707
Printed : 2003/08/07
Reported : 2003/08/07

Matrix	Water
Philip ID	03-H047615
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/07/29
Date Received (y/m/d)	03/07/31

Analyte	Units	EQL	
Total Water Digest		-	20030801-C
Sodium	mg/L	0.1	24.2
Potassium	mg/L	0.1	2.2
Calcium	mg/L	0.1	6.5
Magnesium	mg/L	0.1	4.5
Alkalinity (as CaCO3)	mg/L	5.	59.
Sulfate	mg/L	2.	20.
Chloride	mg/L	1.	26.
Reactive Silica (as SiO2)	mg/L	0.5	10.
Ortho Phosphate (as P)	mg/L	0.01	0.02
Phosphorus	mg/L	0.1	nd
Nitrate + Nitrite (as N)	mg/L	0.05	nd
Nitrate (as N)	mg/L	0.05	nd
Nitrite	mg/L	0.01	nd
Ammonia (as N)	mg/L	0.05	0.21
Color	TCU	5.	130
Total Org. Carbon (by UV)	mg/L	0.5	18.2
Turbidity	NTU	0.1	4.4
Conductance (RCAp)	uS/cm	1.	177.

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
(902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation BUXTON, PAUL
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0312541H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/07
Reported : 2003/08/07

Matrix	Water
Philip ID	03-H047615
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/07/29
Date Received (y/m/d)	03/07/31

Analyte	Units	EQL	(Continued from previous page)
pH	Units	-	7.6
Hardness (as CaCO3)	mg/L	0.1	34.8
Bicarbonate (as CaCO3)	mg/L	1.	59.
Carbonate (as CaCO3)	mg/L	1.	nd
TDS (Calculated)	mg/L	1.	129.
Cation Sum	meq/L	0.10	1.82
Anion Sum	meq/L	0.10	2.33
Ion Balance	%	-	12.4
Langlier Index @ 4C		-	-1.66
Langlier Index @ 20C		-	-1.26
Saturation pH @ 4C	Units	-	9.26
Saturation pH @ 20C	Units	-	8.86
Total Suspended Solids	mg/L	0.5	5.2
Aluminum	ug/L	10	360
Antimony	ug/L	2.	nd
Arsenic	ug/L	2.	nd
Barium	ug/L	5.	12.
Beryllium	ug/L	2.	nd
Bismuth	ug/L	2.	nd
Boron	ug/L	5.	21.
Cadmium	ug/L	0.3	nd

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ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
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Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 3

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
(902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation BUXTON, PAUL
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0312541H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/07
Reported : 2003/08/07

Matrix	Water
Philip ID	03-H047615
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/07/29
Date Received (y/m/d)	03/07/31

Analyte	Units	EQL	(Continued from previous page)
Chromium	ug/L	2.	2.
Cobalt	ug/L	1.	5.
Copper	ug/L	2.	3.
Iron	ug/L	50	4500
Lead	ug/L	0.5	0.7
Manganese	ug/L	2.	2000
Molybdenum	ug/L	2.	nd
Nickel	ug/L	2.	2.
Selenium	ug/L	2.	nd
Silver	ug/L	0.5	nd
Strontium	ug/L	5.	43.
Thallium	ug/L	0.1	nd
Tin	ug/L	2.	nd
Titanium	ug/L	2.	6.
Uranium	ug/L	0.1	nd
Vanadium	ug/L	2.	3.
Zinc	ug/L	5.	nd

03-H047615 WWP-2-A&B Cation sum does not include contribution from Fe and Mn.

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
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Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 4

Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation BUXTON, PAUL
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0312541H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/07
Reported : 2003/08/07

Certificate of Analysis

Method Summaries:

- Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
- Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
- Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
- Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
- Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995
- Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
- NO2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. Ref. USEPA Method #353.1
- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Phosphorus: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
- Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
- Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
- Turbidity: Nephelometric. Ref: USEPA Method #180.1
- Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.1 SOP 2160 V1R2 / 2165 V1R1
- Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8
- Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA 350.1 Determination of Ammonia (Colorimetric, Automated Phenate) Revision 2.0, 1993. SOP 2100 V1R2 / 2105 V1R2
- Nitrite. Roche Cobas/BMC Hitachi 911 Automated Colormetric Analyser. Ref: USEPA Method #354.1
- Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
- Total Metals in Water: Digestion/ICP-MS. Ref: USEPA 200.8

Inorganic Parameters page : 5

Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation BUXTON, PAUL
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0312541H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/07
Reported : 2003/08/07

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Approval of Inorganic Parameters:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0313038H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/08/14
Reported : 2003/08/14

Matrix			Water	Water
Philip ID			03-H049594	03-H049595
Client ID			WWP-2-A&B	WWP-8-A&B
Date Sampled (y/m/d)			03/08/05	03/08/05
Date Received (y/m/d)			03/08/08	03/08/08
Analyte	**Units**	**EQL**		
pH	Units	-	7.0	6.6
Total Suspended Solids	mg/L	0.5	7.8	12.0

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0313038H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/14
Reported : 2003/08/14

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Approval of Inorganic Parameters:

Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0313399H
Client Project Number :

KERN, DAVID
FAX # : 902-532-7707
Printed : 2003/08/22
Reported : 2003/08/22

Matrix		Water	Water
Philip ID		03-H051086	03-H051087
Client ID		WWP-2-A,B	WWP-8-A,B
Date Sampled (y/m/d)		03/08/12	03/08/12
Date Received (y/m/d)		03/08/14	03/08/14
Analyte	Units	EQL	
Total Water Digest	-	-	20030818-C
Sodium	mg/L	0.1	10.4
Potassium	mg/L	0.1	0.4
Calcium	mg/L	0.1	1.5
Magnesium	mg/L	0.1	1.1
Alkalinity (as CaCO3)	mg/L	5.	nd
Sulfate	mg/L	2.	nd(10)
Chloride	mg/L	1.	12.
Reactive Silica (as SiO2)	mg/L	0.5	7.6
Ortho Phosphate (as P)	mg/L	0.01	nd(0.02)
Nitrate + Nitrite (as N)	mg/L	0.05	nd
Ammonia (as N)	mg/L	0.05	nd
Iron	mg/L	0.02	0.32
Manganese	mg/L	0.01	0.01
Copper	mg/L	0.01	nd
Zinc	mg/L	0.05	nd
Color	TCU	5.	72.
Total Org. Carbon (by UV)	mg/L	0.5	12.4
Turbidity	NTU	0.1	0.5

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
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ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expresned on a wet weight basis unless otherwise stated.

page verified /

Inorganic Parameters page : 2

C Analytical Services
0 Bluewater Road
rd, NS Canada B4B 1G9
1 (902) 420-0203
ll free (800) 565-7227
x (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0313399H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/22
Reported : 2003/08/22

Matrix		Water	Water
Philip ID		03-H051086	03-H051087
Client ID		WWP-2-A,B	WWP-9-A,B
Date Sampled (y/m/d)		03/08/12	03/08/12
Date Received (y/m/d)		03/08/14	03/08/14

Analyte	Units	EQL		(Continued from previous page)
Conductance (RCAp)	uS/cm	1.	-	66.
pH	Units	-	6.6	6.4
Hardness (as CaCO3)	mg/L	0.1	-	8.3
Bicarbonate (as CaCO3)	mg/L	1.	-	nd(5.)
Carbonate (as CaCO3)	mg/L	1.	-	nd(5.)
TDS (Calculated)	mg/L	1.	-	46.
Cation Sum	meq/L	0.10	-	0.63
Anion Sum	meq/L	0.10	-	0.65
Ion Balance	%	-	-	1.40
Langlier Index @ 4C		-	-	-4.55
Langlier Index @ 20C		-	-	-4.15
Saturation pH @ 4C	Units	-	-	10.9
Saturation pH @ 20C	Units	-	-	10.5
Total Suspended Solids	mg/L	0.5	7.5	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
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- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

C Analytical Services
0 Bluewater Road
dford, NS Canada B4B 1G9
l (902) 420-0203
ll free (800) 565-7227
x (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0313399H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/22
Reported : 2003/08/22

Certificate of Analysis

Method Summaries:

Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995
Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
?/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. ..ef. USEPA Method #353.1
pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
Turbidity: Nephelometric. Ref: USEPA Method #180.1
Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.1 SOP 2160 V1R2 / 2165 V1R1
Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA 350.1 Determination of Ammonia (Colorimetric, Automated Phenate) Revision 2.0, 1993. SOP 2100 V1R2 / 2105 V1R2
Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7

Inorganic Parameters page : 4

C Analytical Services
0 Bluewater Road
dford, NS Canada B4B 1G9
1 (902) 420-0203
ll free (800) 565-7227
x (902) 420-8612

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0

KERN, DAVID

PSC Project Number : 0313399H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/22
Reported : 2003/08/22

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0313852H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/08/27
Reported : 2003/08/27

Matrix	Water
Philip ID	03-H052990
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/08/19
Date Received (y/m/d)	03/08/21

Analyte	Units	EQL	
pH	Units	-	7.1
Total Suspended Solids	mg/L	0.5	13.5

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0313852H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/08/27
Reported : 2003/08/27

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0314448H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/09/10 (Event 503)
Reported : 2003/09/10

Matrix			Water	Water
Philip ID			03-H055936	03-H055937
Client ID			WWP-2 A&B	WWP-8 A&B
Date Sampled (y/m/d)			03/08/27	03/08/27
Date Received (y/m/d)			03/08/29	03/08/29
Analyte	**Units**	**EQL**		
Total Water Digest		-	20030904-B	20030904-B
Sodium	mg/L	0.1	17.2	12.3
Potassium	mg/L	0.1	1.6	0.8
Calcium	mg/L	0.1	4.0	2.1
Magnesium	mg/L	0.1	2.7	1.6
Alkalinity (as CaCO3)	mg/L	5.	28.	10.
Sulfate	mg/L	2.	nd(5.)	14.
Chloride	mg/L	1.	16.	13.
Reactive Silica (as SiO2)	mg/L	0.5	7.8	6.4
Ortho Phosphate (as P)	mg/L	0.01	nd	0.03
Nitrate + Nitrite (as N)	mg/L	0.05	nd	nd
Ammonia (as N)	mg/L	0.05	0.29	0.09
Iron	mg/L	0.02	5.22	0.45
Manganese	mg/L	0.01	1.48	0.09
Copper	mg/L	0.01	0.01	nd
Zinc	mg/L	0.05	nd	nd
Color	TCU	5.	90.	35.
Total Org. Carbon (by UV)	mg/L	0.5	16.6	8.8
Turbidity	NTU	0.1	5.8	0.6

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

SC Analytical Services
10 Bluewater Road
rd, NS Canada B4B 1G9
el (902) 420-0203
oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0314448H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/09/10 E503
Reported : 2003/09/10

			Water	Water
Matrix			Water	Water
Philip ID			03-H055936	03-H055937
Client ID			WWP-2 A&B	WWP-8 A&B
Date Sampled (y/m/d)			03/08/27	03/08/27
Date Received (y/m/d)			03/08/29	03/08/29
Analyte	Units	EQL	(Continued from previous page)	
Conductance (RCAp)	uS/cm	1.	117.	84.
pH	Units	-	6.9	6.4
Hardness (as CaCO3)	mg/L	0.1	21.1	11.8
Bicarbonate (as CaCO3)	mg/L	1.	28.	10.
Carbonate (as CaCO3)	mg/L	1.	nd	nd
TDS (Calculated)	mg/L	1.	72.	57.
Cation Sum	meq/L	0.10	1.23	0.80
Anion Sum	meq/L	0.10	1.12	0.86
Ion Balance	%	-	4.81	3.77
Langlier Index @ 4C		-	-2.88	-4.11
Langlier Index @ 20C		-	-2.48	-3.71
Saturation pH @ 4C	Units	-	9.78	10.5
Saturation pH @ 20C	Units	-	9.38	10.1

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 3

C Analytical Services
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0314448H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/09/10 E503
Reported : 2003/09/10

Certificate of Analysis

Method Summaries:

Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
Conductance (RCAp): Electrometric @ 25 C, values >300 uS/cm diluted for validation purposes. Ref: Standard Methods 4500-H+, 19th Edition, 1995.
Total Organic Carbon: UV Digestion/Technicon AA1 Analyser. Ref: Standard Methods, 19th Edition, 1995
Total Recoverable Metals Digest: Homogenization/Digestion. Ref: USEPA Method #200.2
2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colormetric Analyser. ..ef. USEPA Method #353.1
pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
Sulfate: Roche Cobas Fara/BMC Hitachi 911 Automated Turbidimetric. Ref: USEPA Method #375.4
Turbidity: Nephelometric. Ref: USEPA Method #180.1
Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.1 SOP 2160 V1R2 / 2165 V1R1
Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA 350.1 Determination of Ammonia (Colorimetric, Automated Phenate) Revision 2.0, 1993. SOP 2100 V1R2 / 2105 V1R2
Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7

Inorganic Parameters page : 4

L Analytical Services
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ll free (800) 565-7227
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0314448H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/09/10 E503
Reported : 2003/09/10

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:

Inorganics Manager : _____

Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0314658H
Client Project Number :

PAUL BUXTON
KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/09/10 (Event 690)
Reported : 2003/09/10

Matrix	Water
Philip ID	03-H056835
Client ID	WWP-2-A and B
Date Sampled (y/m/d)	03/09/02
Date Received (y/m/d)	03/09/04

Analyte	Units	EQL	
pH	Units	-	7.3
Total Suspended Solids	mg/L	0.5	nd(10)

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
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Toll free (800) 565-7227
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Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0314658H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/09/10 E69
Reported : 2003/09/10

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:
Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0315233H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/09/18 (Event 394)
Reported : 2003/09/18

Matrix	Water
Philip ID	03-H059665
Client ID	WWP-2A and B
Date Sampled (y/m/d)	03/09/10
Date Received (y/m/d)	03/09/12

Analyte	Units	EQL	
pH	Units	-	6.8
Total Suspended Solids	mg/L	0.5	3.0

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
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Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
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Annapolis Royal
NS B0S 1A0

PSC Project Number : 0315233H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/09/18 E394
Reported : 2003/09/18

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:
Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0315731H
Client Project Number :

PAUL BUXTON

FAX # : 902-532-7707
Printed : 2003/09/25 (Event 402)
Reported : 2003/09/25

Matrix	Water
Philip ID	03-H061666
Client ID	WWP-2A and 2B
Date Sampled (y/m/d)	03/09/17
Date Received (y/m/d)	03/09/19

Analyte	Units	EQL	
pH	Units	-	7.0
Total Suspended Solids	mg/L	0.5	7.5

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
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Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0315731H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/09/25 E40:
Reported : 2003/09/25

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:
Inorganics Manager : Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0316060H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/10/07 (Event 669)
Reported : 2003/10/02

Matrix	Water
Philip ID	03-H063126
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/09/23
Date Received (y/m/d)	03/09/25

Analyte	Units	EQL	
pH	Units	-	7.1
Total Suspended Solids	mg/L	0.5	5.0
03-H063126 WWP-2-A&B		Due to a power outage associated with Hurricane Juan, TSS sample aliquot exceeded the maximum recommended storage temperature for approximately twelve hours.	

REVISED REPORT

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0316060H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/10/07 E66
Reported : 2003/10/02

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

REVISED REPORT

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0316467H
Client Project Number :

PAUL BUXTON
KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/10/10 (Event 402)
Reported : 2003/10/10

Matrix	Water
Philip ID	03-H064890
Client ID	WWP-2-A and B
Date Sampled (y/m/d)	03/10/01
Date Received (y/m/d)	03/10/03

Analyte	Units	EQL	
pH	Units	-	7.2
Total Suspended Solids	mg/L	0.5	nd(5.)

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
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Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
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Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0316467H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/10/10 E402
Reported : 2003/10/10

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0316908H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/10/17 (Event 388)
Reported : 2003/10/17

Matrix	Water
Philip ID	03-H066602
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/10/08
Date Received (y/m/d)	03/10/10

Analyte	Units	EQL	
pH	Units	-	7.4
Total Suspended Solids	mg/L	0.5	2.5

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

SC Analytical Services
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0316908H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/10/17 E388
Reported : 2003/10/17

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : _____
Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0317239H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/10/24 (Event 406)
Reported : 2003/10/24

Matrix	Water
Philip ID	03-H067873
Client ID	WWP-2A&B
Date Sampled (y/m/d)	03/10/15
Date Received (y/m/d)	03/10/17

Analyte	Units	EQL	
pH	Units	-	7.4
Total Suspended Solids	mg/L	0.5	4.0

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

C Analytical Services
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x (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0317239H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/10/24 E406
Reported : 2003/10/24

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:
Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0317681H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/10/31 (Event 700)
Reported : 2003/10/31

Matrix	Water
Philip ID	03-H069829
Client ID	WWP-2-A and B
Date Sampled (y/m/d)	03/10/22
Date Received (y/m/d)	03/10/24

Analyte	Units	EQL	
pH	Units	-	6.9
Total Suspended Solids	mg/L	0.5	27.8

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

Analytical Services
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Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0317681H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/10/31 E700
Reported : 2003/10/31

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0318121H
Client Project Number :

KERN, DAVID
BUXTON, PAUL

FAX # : 902-532-7707
Printed : 2003/11/07 (Event 601)
Reported : 2003/11/07

Matrix			Water	Water
Philip ID			03-H071861	03-H071862
Client ID			WWP-2-A&B	WWP-8-A&B
Date Sampled (y/m/d)			03/10/29	03/10/29
Date Received (y/m/d)			03/10/31	03/10/31
Analyte	Units	EQL		
pH	Units	-	6.7	6.2
Total Suspended Solids	mg/L	0.5	3.5	5.5

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

? Analytical Services
200 Bluewater Road
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Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0318121H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/11/07 E60
Reported : 2003/11/07

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:
Inorganics Manager : _____
Jerry Arenovich

ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0318542H
Client Project Number :

PAUL BUXTON
KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/11/17 (Event 656)
Reported : 2003/11/17

Matrix	Water
Philip ID	03-H073429
Client ID	WWP-2A and 2B
Date Sampled (y/m/d)	03/11/05
Date Received (y/m/d)	03/11/07

Analyte	Units	EQL	
pH	Units	-	6.8
Total Suspended Solids	mg/L	0.5	2.8

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified ___

Inorganic Parameters page : 2

C Analytical Services
0 Bluewater Road
dford, NS Canada B4B 1G9
1 (902) 420-0203
11 free (800) 565-7227
x (902) 420-8612

Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0318542H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/11/17 E656
Reported : 2003/11/17

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Gerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0318870H
Client Project Number :

KERN, DAVID
BUXTON, PAUL

FAX # : 902-532-7707
Printed : 2003/11/21 (Event 495)
Reported : 2003/11/21

Matrix	Water
Philip ID	03-H074796
Client ID	WWP-2-A
Date Sampled (y/m/d)	03/11/12
Date Received (y/m/d)	03/11/14

Analyte	Units	EQL	
pH	Units	-	6.7
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

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Inorganic Parameters page : 2

Analytical Services
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Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
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Annapolis Royal
NS B0S 1A0

PSC Project Number : 0318870H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/11/21 E495
Reported : 2003/11/21

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0319264H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/11/28 (Event 685)
Reported : 2003/11/28

Matrix	Water
Philip ID	03-H076594
Client ID	WWP-2A&B
Date Sampled (y/m/d)	03/11/19
Date Received (y/m/d)	03/11/21

Analyte	Units	EQL	
pH	Units	-	6.8
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
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Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0319264H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/11/28 E68
Reported : 2003/11/28

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0319742H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/12/05 (Event 499)
Reported : 2003/12/05

Matrix			Water	Water
Philip ID			03-H078413	03-H078414
Client ID			WWP-2-A & B	WWP-8-A & B
Date Sampled (y/m/d)			03/11/26	03/11/26
Date Received (y/m/d)			03/11/28	03/11/28
Analyte	**Units**	**EQL**		
pH	Units	-	6.8	6.4
Total Suspended Solids	mg/L	0.5	nd(2.)	3.2

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

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Inorganic Parameters page : 2

Analytical Services
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Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0319742H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/12/05 E49
Reported : 2003/12/05

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0320218H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/12/15 (Event 402)
Reported : 2003/12/15

Matrix	Water
Philip ID	03-H080262
Client ID	WWP-2 A & B
Date Sampled (y/m/d)	03/12/04
Date Received (y/m/d)	03/12/08

Analyte	Units	EQL	
pH	Units	-	6.7
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend
EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

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Inorganic Parameters page : 2

PSC Analytical Services
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Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/12/15 E40
Reported : 2003/12/15

PSC Project Number : 0320218H
Client Project Number :

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0320719H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/12/22 (Event 393)
Reported : 2003/12/22

Matrix	Water
Philip ID	03-H082398
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	03/12/11
Date Received (y/m/d)	03/12/15

Analyte	Units	EQL	
pH	Units	-	6.8
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

SC Analytical Services
200 Bluewater Road
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Tel (902) 420-0203
Toll free (800) 565-7227
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Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0320719H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/12/22 E3
Reported : 2003/12/22

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0321073H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2003/12/23 (Event 597)
Reported : 2003/12/23

Matrix	Water
Philip ID	03-H084041
Client ID	WWP-2 A&B
Date Sampled (y/m/d)	03/12/17
Date Received (y/m/d)	03/12/19

Analyte	Units	EQL	
pH	Units	-	6.4
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

. Analytical Services
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edford, NS Canada B4B 1G9
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oll free (800) 565-7227
ax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0321073H
Client Project Number :

FAX # : 902-532-7707
Printed : 2003/12/23 E597
Reported : 2003/12/23

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0321455H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2004/01/07 (Event 388)
Reported : 2004/01/07

Matrix			Water	Water
Philip ID			03-H086013	03-H086014
Client ID			WWP-2-A&B	WWP-8-A&B
Date Sampled (y/m/d)			03/12/24	03/12/24
Date Received (y/m/d)			03/12/30	03/12/30
Analyte	**Units**	**EQL**		
pH	Units	-	7.0	5.8
Total Suspended Solids	mg/L	0.5	nd(2.)	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

: Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
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Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0321455H
Client Project Number :

FAX # : 902-532-7707
Printed : 2004/01/07 E38
Reported : 2004/01/07

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:
Inorganics Manager : Jerry Arenovich

WATER SAMPLE ANALYSIS

2004

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0400023H
Client Project Number :

KERN, DAVID
BUXTON, PAUL

FAX # : 902-532-7707
Printed : 2004/01/08 (Event 593)
Reported : 2004/01/08

Matrix	Water
Philip ID	04-H000072
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	04/01/01
Date Received (y/m/d)	04/01/05

Analyte	Units	EQL	
pH	Units	-	6.2
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Analytical Services
200 Bluewater Road
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Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0400023H
Client Project Number :

FAX # : 902-532-7707
Printed : 2004/01/08 E593
Reported : 2004/01/08

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:
Inorganics Manager : _____
Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0400273H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2004/01/15 (Event 595)
Reported : 2004/01/15

Matrix	Water
Philip ID	04-H000904
Client ID	WWP-2-A&B
Date Sampled (y/m/d)	04/01/07
Date Received (y/m/d)	04/01/09

Analyte	Units	EQL	
pH	Units	-	6.5
Total Suspended Solids	mg/L	0.5	2.5

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

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:dford, NS Canada B4B 1G9
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:ll free (800) 565-7227
:x (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0400273H
Client Project Number :

FAX # : 902-532-7707
Printed : 2004/01/15 E595
Reported : 2004/01/15

Certificate of Analysis

Method Summaries:

pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:
Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters page : 1

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0407341H
Client Project Number :

PAUL BUXTON
KERN, DAVID

FAX # : 902-532-7707
Printed : 2004/05/13 (Event 623)
Reported : 2004/05/13

Matrix			Water	Water	Water
Philip ID			04-H028141	04-H028142	04-H028143
Client ID			WWP-1-A and B	WWP-2-A and B	WWP-8-A and B
Date Sampled (y/m/d)			04/05/05	04/05/05	04/05/05
Date Received (y/m/d)			04/05/07	04/05/07	04/05/07
Analyte	Units	EQL			
pH	Units	-	6.4	6.4	5.9
Total Suspended Solids	mg/L	0.5	2.2	nd(2.)	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
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Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation PAUL BUXTON
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0407341H
Client Project Number :

FAX # : 902-532-7707
Printed : 2004/05/13 E623
Reported : 2004/05/13

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0407839H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2004/05/20 (Event 688)
Reported : 2004/05/20

Matrix	Water
Philip ID	04-H030226
Client ID	WWP-2A&B
Date Sampled (y/m/d)	04/05/11
Date Received (y/m/d)	04/05/13

Analyte	Units	EQL	
pH	Units	-	6.7
Total Suspended Solids	mg/L	0.5	nd(2.)

Legend EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard EQL.
ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
\- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0

PSC Project Number : 0407839H
Client Project Number :

FAX # : 902-532-7707
Printed : 2004/05/20 E688
Reported : 2004/05/20

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Inorganics Manager : Jerry Arenovich

PSC ANALYTICAL SERVICES

Inorganic Parameters

Client : Eastern Canada Bioremediation
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0410132H
Client Project Number :

KERN, DAVID

FAX # : 902-532-7707
Printed : 2004/06/17 (Event 605)
Reported : 2004/06/17

Matrix		Water	Water
Philip ID		04-H038168	04-H038169
Client ID		WWP-2-A&B	WWP-8-A&B
Date Sampled (y/m/d)		04/06/09	04/06/09
Date Received (y/m/d)		04/06/11	04/06/11
Analyte	**Units**	**EQL**	
pH	Units	-	7.0	6.5
Total Suspended Solids	mg/L	0.5	3.0	14.4

Legend
- EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND ( ) = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- \- = Dash is reported when parameter not requested in sample.

Note : Soil results are expressed as air dry weight basis.
: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Eastern Canada Bioremediation KERN, DAVID
P.O. Box 98
Annapolis Royal
NS B0S 1A0
PSC Project Number : 0410132H
Client Project Number :

FAX # : 902-532-7707
Printed : 2004/06/17 E605
Reported : 2004/06/17

Certificate of Analysis

Method Summaries:

- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:
Inorganics Manager : Jerry Arenovich

** TOTAL PAGE.03 **

WATER SAMPLE ANALYSIS

2005

Maxxam Analytics Inc

Eastern Canadian Bioremediation
PO Box 98
Annapolis Royal, NS
CANADA B0S 1A0

Attention: David Kern

Report Date: 2005/07/26

ANALYTICAL REPORT

MAXXAM JOB #: A567738
Received: 2005/07/19, 9:23

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Mercury (Total)	3	N/A	2005/07/21	3425_1_2	CVAA

MAXXAM ANALYTICS INC.

TROY MACKAY
Project Manager

TMA/mke
encl.

Total cover pages: 1

Maxxam Analytics Inc

Maxxam Job #: A567738
Report Date: 2005/07/26

Eastern Canadian Bioremediation
Client Project #:
Project name:
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		H24241	H24242	H24243		
Sampling Date		2005/07/14 13:00	2005/07/14 13:00	2005/07/14 13:00		
	Units	**WWP-2**	**WWP-5 SEDWATER**	**WWP-8**	**DL**	**QC Batch**
Elements						
Total Mercury (Hg)	ug/L	ND	ND	ND	0.05	784320

ND = Not detected
QC Batch = Quality Control Batch
Please check for attached comments

Maxxam Analytics Inc

Maxxam Job #: A567738
Report Date: 2005/07/26

Eastern Canadian Bioremediation
Client Project #:
Project name:
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics Inc

Eastern Canadian Bioremediation
Attention: David Kern
Client Project #:
P.O. #:
Project name:

Quality Assurance Report

Maxxam Job Number: DA567738

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
784320	SSI	MATRIX SPIKE	Total Mercury (Hg)	2005/07/21		96	%	80 - 120
		QC STANDARD	Total Mercury (Hg)	2005/07/21		103	%	80 - 120
		Spiked Blank	Total Mercury (Hg)	2005/07/21		101	%	80 - 120
		Method Blank	Total Mercury (Hg)	2005/07/21	ND, DL=0.05		ug/L	
		RPD	Total Mercury (Hg)	2005/07/21	NC		%	25

ND = Not detected
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample

Bedford: 200 Bluewater Road Bedford NS B4B 1G9 Telephone(902)420-0203 FAX(902)420-8612

Attention: Paul Buxton
Bilcon of Nova Scotia
305 Hwy 303 Suite 3
PO Box 2113
Digby, NS
B0V 1A0

Report Date: 2006/07/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A668779
Received: 2006/07/11, 10:56

Sample Matrix: Leachate
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Tot ICPMS Metals in Leachates	1	N/A	2006/07/19	ATL SOP 00024	Based on EPA6020A

Sample Matrix: Solid Waste
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
CGSB extraction - Init and Final pH	1	N/A	2006/07/19	SOP 4091_1_1	CGSB 164-GP-1 MP
CGSB extraction - volume of extractant	1	N/A	2006/07/19	SOP 4091_1_1	CGSB 164-GP-1 MP
CGSB extraction - Dry Weight	1	N/A	2006/07/19	SOP 4091_1_2	CGSB 164-GP-1 MP
Moisture	1	N/A	2006/07/14		MOE Handbook 1983

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MARIE MCNAIR, Project Manager
Email: marie.mcnair.reports@maxxamanalytics.com
Phone# (902) 420-0203

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A668779
Report Date: 2006/07/20

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

ATLANTIC CGSB LEACHATE+ METALS (LEACHATE)

Maxxam ID		N03377	
Sampling Date			
	Units	**BASALT SAMPLE**	**RDL**
Elements (ICP-MS)			
Leachable Aluminum (Al)	ug/L	130	100
Leachable Antimony (Sb)	ug/L	ND	20
Leachable Arsenic (As)	ug/L	ND	20
Leachable Barium (Ba)	ug/L	67	50
Leachable Beryllium (Be)	ug/L	ND	20
Leachable Boron (B)	ug/L	ND	500
Leachable Cadmium (Cd)	ug/L	ND	3
Leachable Chromium (Cr)	ug/L	ND	20
Leachable Cobalt (Co)	ug/L	14	10
Leachable Copper (Cu)	ug/L	21	20
Leachable Iron (Fe)	ug/L	84000	500
Leachable Lead (Pb)	ug/L	ND	5
Leachable Lithium (Li)	ug/L	ND	20
Leachable Manganese (Mn)	ug/L	2900	20
Leachable Molybdenum (Mo)	ug/L	ND	20
Leachable Nickel (Ni)	ug/L	2200	20
Leachable Selenium (Se)	ug/L	ND	20
Leachable Silver (Ag)	ug/L	ND	5
Leachable Strontium (Sr)	ug/L	290	50
Leachable Thallium (Tl)	ug/L	ND	1
Leachable Tin (Sn)	ug/L	ND	20
Leachable Uranium (U)	ug/L	ND	1
Leachable Vanadium (V)	ug/L	ND	20
Leachable Zinc (Zn)	ug/L	65	50

ND = Not detected
RDL = Reportable Detection Limit

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: A668779
Report Date: 2006/07/20

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

ATLANTIC CGSB LEACHATE+ METALS (SOLID WASTE)

Maxxam ID		N03377	
Sampling Date			
	Units	**BASALT SAMPLE**	**RDL**
CONVENTIONALS			
Final pH	N/A	4.8	N/A
Initial pH	N/A	10	N/A
INDUSTRIAL			
Dry Weight	g	50	0.01
INORGANICS			
Volume of Acetic Acid	mL/L	39	N/A
INORGANICS			
Moisture	%	1	1

RDL = Reportable Detection Limit

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Maxxam Job #: A668779
Report Date: 2006/07/20

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Attention: Josephine Lowry
Bilcon of Nova Scotia
305 Hwy 303 Suite 3
PO Box 2113
Digby, NS
B0V 1A0

Report Date: 2006/10/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A6A3801
Received: 2006/09/28, 10:12

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Elements by ICPMS (FIAS) (1)	3	N/A	2006/10/04	ATL SOP 00024	Based on EPA6020A
Acid Rock Drain. in S (Sub from Bedford) (2)	3	2006/10/02	2006/10/13		

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bedford
(2) This test was performed by Bedford to RPC Subcontract

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MARIE MCNAIR, Project Manager
Email: marie.mcnair.reports@maxxamanalytics.com
Phone# (902) 420-0203

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A6A3801
Report Date: 2006/10/13

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

RESULTS OF ANALYSES OF SOIL

Maxxam ID		O56860	O56870	O56875	
Sampling Date		2006/09/28	2006/09/28	2006/09/28	
	Units	**NS-02-01**	**NS-02-02**	**NS-02-03**	**RDL**
MISCELLANEOUS					
Subcontract Parameter	N/A	COMMENT	COMMENT	COMMENT	N/A

RDL = Reportable Detection Limit

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: A6A3801
Report Date: 2006/10/13

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		O56860	O56870	O56875	
Sampling Date		2006/09/28	2006/09/28	2006/09/28	
	Units	**NS-02-01**	**NS-02-02**	**NS-02-03**	**RDL**
Elements (ICP-MS)					
Available Aluminum (Al)	mg/kg	18000	19000	10000	10
Available Antimony (Sb)	mg/kg	ND	ND	ND	2
Available Arsenic (As)	mg/kg	ND	3	ND	2
Available Barium (Ba)	mg/kg	89	8	20	5
Available Beryllium (Be)	mg/kg	ND	ND	ND	2
Available Boron (B)	mg/kg	ND	ND	ND	5
Available Cadmium (Cd)	mg/kg	ND	ND	ND	0.3
Available Chromium (Cr)	mg/kg	52	25	25	2
Available Cobalt (Co)	mg/kg	13	9	6	1
Available Copper (Cu)	mg/kg	39	230	91	2
Available Iron (Fe)	mg/kg	20000	20000	13000	50
Available Lead (Pb)	mg/kg	0.6	0.5	2.1	0.5
Available Manganese (Mn)	mg/kg	110	140	160	2
Available Molybdenum (Mo)	mg/kg	8	7	14	2
Available Nickel (Ni)	mg/kg	70	45	90	2
Available Selenium (Se)	mg/kg	ND	ND	ND	2
Available Silver (Ag)	mg/kg	ND	ND	ND	0.5
Available Strontium (Sr)	mg/kg	43	36	23	5
Available Thallium (Tl)	mg/kg	ND	ND	ND	0.1
Available Uranium (U)	mg/kg	0.1	0.2	0.2	0.1
Available Vanadium (V)	mg/kg	36	53	20	2
Available Zinc (Zn)	mg/kg	16	22	16	5

ND = Not detected
RDL = Reportable Detection Limit

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: A6A3801
Report Date: 2006/10/13

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

GENERAL COMMENTS

Antimony recovery in the applicable digested reference material is 20% for worksheet # 1069942.

Results relate only to the items tested.

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Your C.O.C. #: B 18467

Attention: Josephine Lowry
Bilcon of Nova Scotia
305 Hwy 303 Suite 3
PO Box 2113
Digby, NS
B0V 1A0

Report Date: 2006/10/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A6B0331
Received: 2006/10/16, 14:25

Sample Matrix: LIQUID
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Tot ICPMS Metals in Leachates (1)	3	N/A	2006/10/24	ATL SOP 00024	Based on EPA6020A

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
CGSB extraction - Init and Final pH (1)	3	N/A	2006/10/24	SOP 4091_1_1	CGSB 164-GP-1 MP
CGSB extraction - volume of extractant (1)	3	N/A	2006/10/24	SOP 4091_1_1	CGSB 164-GP-1 MP
CGSB extraction - Dry Weight (1)	3	N/A	2006/10/24	SOP 4091_1_2	CGSB 164-GP-1 MP
Moisture (1)	3	N/A	2006/10/19		MOE Handbook 1983

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bedford

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MARIE MCNAIR, Project Manager
Email: marie.mcnair.reports@maxxamanalytics.com
Phone# (902) 420-0203

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Total cover pages: 1

Maxxam Job #: A6B0331
Report Date: 2006/10/25

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

ATLANTIC CGSB LEACHATE+ METALS (LIQUID)

Maxxam ID		O87412	O87419	O87421	
Sampling Date		2006/09/28	2006/09/28	2006/09/28	
COC Number		B 18467	B 18467	B 18467	
	Units	**NS-02-01 (O56860)**	**NS-02-02 (O56870)**	**NS-02-03 (O56875)**	**RDL**
Elements (ICP-MS)					
Leachable Copper (Cu)	ug/L	ND	480	35	20

ND = Not detected
RDL = Reportable Detection Limit

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: A6B0331
Report Date: 2006/10/25

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

ATLANTIC CGSB LEACHATE+ METALS (SOIL)

Maxxam ID		O87412	O87419	O87421	
Sampling Date		2006/09/28	2006/09/28	2006/09/28	
COC Number		B 18467	B 18467	B 18467	
	Units	**NS-02-01 (O56860)**	**NS-02-02 (O56870)**	**NS-02-03 (O56875)**	**RDL**
CONVENTIONALS					
Final pH	N/A	4.9	4.9	4.9	N/A
Initial pH	N/A	9.7	9.7	9.6	N/A
INDUSTRIAL					
Dry Weight	g	50	50	50	0.01
INORGANICS					
Volume of Acetic Acid	mL/L	46	20	10	N/A
INORGANICS					
Moisture	%	2	ND	ND	1

ND = Not detected
RDL = Reportable Detection Limit

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: A6B0331
Report Date: 2006/10/25

Bilcon of Nova Scotia
Client Project #:
Project name:
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

4.2 EIS Format

EIS Reference: EIS Volume IV, Chapter 4, Section 4.2

INDEX OF COMMENTS

4.0 Standards and Format

4.2 EIS Format

4.2 EIS Format

WP 1452 - Joint Review Panel
EIS Format

It is unfortunate that the Proponent did not follow the structure of the EIS Guidelines as issued by the Panel in March 2005. The proposed format was to begin by describing the Project and proceed to describing the existing environment. Where there was potential for interaction between an environmental component and Project component, the potential effects were to be assessed. Mitigation, monitoring and management were then to be presented collectively to limit repetition and recognize the interrelated nature of both the environmental components and the Project components.

This suggested format would have allowed the Panel to verify the information gaps more efficiently in its review of the EIS and to better understand the Proponent's opinions concerning the potential of the Project to cause environmental effects.

To assist the Panel in this regard, at this stage of the process, the Proponent is instructed to provide an environmental component (VEC)/ Project component matrix that will clearly demonstrate where components of the Project may interact with the environment to cause effects. Ensure that all phases of the proposed Project are included.

For examples from other assessments, see the web site of the Canadian Environmental Assessment Agency. Two instructive examples have been reproduced in this document as Appendix 1 and Appendix 2 for illustration only.

The Proponent's analysis of VECs mixes ecosystem components and project effects. It omits some species identified by government authorities as potentially of concern. It omits ecosystems like the coastal bog which it has identified as playing an important role in managing effluent from the site. It omits consideration of human environment components. Clarify the VECs.

RESPONSE

In response to the Panel's request, an issue scoping/pathway analysis summary matrix has been generated. This is presented in the attached Table 1. The table lists Environmental Components of Concern (ECC) and identifies whether there is a potential that these components could interact with the Project. The Environmental Components of Concern have been based on the team's understanding of the site and its local and regional context and public and regulator input and concerns. Interactions are based on the proposed Project works and activities. The potential interactions have been identified by the Bilcon's study team based on professional judgment and experience with comparable projects. Wherever a plausible interaction has been identified, the ECC was determined to be a Valued Ecosystem Component (VEC). VECs were used in the EIS to focus the assessment on key issues.

4.2 EIS Format

The issue scoping/pathway analysis summary matrix clarifies the approach to the establishment of the VECs as well as the rationale. Table 2 clarifies the final VEC list through a summary listing of what has been considered a VEC in the EA process.

"Light" and "Noise and Vibration", although often addressed in the EA process as effects rather than VECs have been treated as VECs since the EIS Guidelines ask explicitly for a description of the project's effects on these factors (EIS Guideline Section 10.1.6 and 10.1.7).

Species of concern are addressed in either the "Species at Risk" VEC or the "Marine Species at Risk". The coastal bog is included in the "Wetland" VEC.

Human Environment components have been addressed by the VECs related to Heritage Resources, Aboriginal Land and Resource Use, Aesthetics, Transportation, Economy, Human Health and Wellness and Socio-Cultural Environment.

A summary listing of the resulting VECS is presented in Table 2.

4.2 EIS Format

Table 1: Issue Scoping/Pathway Analysis Summary Matrix Valued Environmental Components (VECs)

Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
Climate	Greenhouse Gases Microclimate	X		Construction and Operation: • Exhaust emissions from operation of heavy equipment • Exhaust emissions from and truck and marine traffic • Change in the microclimate of the area due to the vegetation removal (site clearing, quarry face preparation).	X		• Protected by statute/regulation • Significant public concern • Required under the EIS guidelines
Geology and Hydrogeology	Basalt Rock	X		Operation: • Removal of part of basalt rock resource	X		• Significant public concern • Required under the EIS guidelines
	Residential Well Water Yields	X		Operation: • Blasting effects on well stability • Effects of blasting, dewatering and groundwater withdrawal on groundwater flow and quantity	X		• Protected by statute/regulation • Significant public concern • Required under the EIS guidelines
	Residential Well Water Quality	X		Operation: • Migration of blasting residues into groundwater • Effects of blasting on well water turbidity and chemistry	X		See above
Surficial Geology and Soils	Soil	X		Operation: • Effects of soil recycling and site reclamation work on soil quality and nutrient levels	X		See above
Surface Water (Freshwater)	Little River Watershed	X		Construction and Operation: • Impairment of surface water quality through run-off from Quarry lands located within the watershed • Loss of groundwater to north branch of Little River	X		See above

4.2 EIS Format

Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
	On-site surface water drainage/wetlands	X		Construction and Operation: • Change of on-site drainage pattern and water-regime of on-site wetland (coastal bog)	X		See above
	On-site surface water quality	X		Construction and Operation: • Impairment of water quality in on and off-site receiving environment (incl. marine) from on-site drainage and discharges	X		See above
Marine Environments & Physical oceanography	Turbidity	X		Construction: • Increased turbidity from marine terminal construction	X		See above
	Tides and currents	X		Operation: • Alteration of near-shore currents and sediment transport	X		See above
Air Quality	Dust levels (Visibility, Nuisance Soiling)			Construction and Operation: • Fugitive particulate from site preparation, earthwork, blasting, crushing, screening, stockpiling and loading	X		See above
	Odours		X	• None identified		X	• No source and interaction identified
Noise and Vibration	Noise	X		Construction • Operation of heavy equipment during construction of marine terminal. Operation: • Blasting and crushing noise from operation of quarry.	X		• Municipal Bylaw; • Provincial noise guidelines • Required under the EIS guidelines
	Concussion and ground vibration	X		Operation: • Blasting activities are associated with concussions and ground vibration		X	• Considered an effect rather than a VEC. Addressed by other VECs (VECs of Hydrogeology, Terrestrial and Marine Environments)
Light		X		Construction and Operation: • Attraction of birds to lights associated with the marine terminal and quarry.	X		• Significant public concern • Required under the EIS guidelines

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Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
Terrestrial Ecology	Habitat , Flora, Fauna	X		Construction and Operation: • Initial site clearing and on-going quarry face development will cause removal of existing vegetation/habitat • Noise will exclude sensitive fauna from on-site and near-by habitat • Incremental and final quarry reclamation will establish new habitat/vegetation	X		• Protected by statute/regulation • Significant public concern • Required under the EIS guidelines
	Wetlands	X		Operation: • Alteration of water regime of on-site wetland (coastal bog) • Incremental and final quarry reclamation will establish new wetland habitat	X		See above
	Migratory Birds	X		Construction and Operation: • lighting could adversely affect migratory bird species	X		See above
	Species at Risk	X		Construction and Operation: • Habitat loss, noise and lighting could adversely affect species at risk using or passing over the site	X		See above
Aquatic Environment (Freshwater)	Fish habitat (freshwater)		X	Construction and Operation: • Habitat alteration off-site (Little River Watershed) due to change in on-site surface water drainage.		X	See above
	Fish species (freshwater)		X	Construction and Operation: • Effects on fish species in off-site environments (Little River Watershed) due to Project induced habitat alteration.		X	See above

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Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
Aquatic Environment (Marine)	Marine fish habitat (Intertidal, nearshore)	X		Construction: • HADD resulting from construction of berthing, ship loader and conveyor supports • Potential for increase in Total Suspended Solids (TSS) Construction and Operation: • Accidental spills on-site and/or at marine terminal Operation • Marine water quality impairment due to storm water and waste water discharges to marine environment • Marine water quality impairment and/or introduction of invasive species due to ballast water discharges	X		• Protected by statute/regulation • Significant public concern • Required under the EIS guidelines
	Marine mammals (incl. NARW)	X		Operation: • Whale– vessel collisions can injure or kill whale individuals	X		See above
	American lobster	X		Construction and Operation: • HADD (see above) can reduce or displace lobster population	X		See above
	Marine waterbirds	X		Construction and Operation: • Activities at the marine terminal can disturb and displace water birds	X		See above

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Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
	Marine species at risk (fish, mammals, reptiles, waterfowl)	X		Construction and Operation: • Whale– vessel collisions may cause whale injury or mortality • Activities at the marine terminal and blasting at the site can disturb and displace water birds Operation: • Marine terminal may disrupt migration route of iBoF Atlantic Salmon • Blasting and water quality effects on iBoF Atlantic Salmon • Vessel collisions with Right Whale may cause injury or mortality • Whale behavioral change, injury or mortality resulting from blast event	X		See above
	Water Quality (Marine)	X		Construction and Operation: • Accidental spills on-site and/or at marine terminal • Marine water quality impairment due to storm water and waste water discharges to marine environment	X		See above
Heritage Resources	Marine Archaeology	X		Construction: • Disruption of archaeological features (shipwreck, artifacts)	X		See above
	Land Archaeology	X		Construction and Operation: • Disruption or archaeological features (e.g., foundations, artifacts, human remains)	X		See above
	Heritage Properties	X		Construction and Operation: • Impairment of heritage value of heritage properties as a result of direct effects (site development) or indirect effects (impairment of visual quality within offsite viewshed)	X		See above

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Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
	Site History	X		Construction and Operation: • Disruption ofhistoric features (e.g., foundations, artifacts, human remains)	X		• Some aspects protected by statute/regulation • Significant public concern • Required under the EIS guidelines
Aboriginal land and resource use		X		Construction and Operation: • Potential for disruption of traditional land and resource uses and impairment of resources (as discussed through other VECs)	X		• Significant public concern • Significant concern of First Nations • Required under the EIS guidelines
Aesthetics	On-shore (HWY #217)	X		Construction and Operation: • Change of visual landscape character • Impairment of near-site recreation and tourism • Potential for improved visual qualities resulting from site reclamation	X		• Significant public concern • Required under the EIS guidelines
	Bay of Fundy	X		Construction and Operation: • Change of visual coastal character • Impairment of marine-based recreation and tourism • Potential for improved visual qualities resulting from site reclamation	X		See above
Transportation	Land	X		Construction and Operation: • Increase in traffic on HWY #217	X		• Protected by statute/regulation • Significant public concern • Required under the EIS guidelines
	Sea	X		Operation: • Increase in vessel traffic near Project site • Potential for interference with other marine traffic (fishing vessels, whale watching tour boats)	X		See above
Economy	Employment	X		Construction and Operation: • Provision of new employment opportunities	X		• Significant public concern • Required under the EIS guidelines
	GDP	X		Construction and Operation: • Increase in local Gross Domestic Product	X		See above

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Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
	Taxes	X		Construction and Operation: • New federal, provincial and municipal tax payments	X		See above
	Fishery - Aquaculture	X		Operation: • Underwater noise effects from blasting may affect productivity	X		See above
	Fishery -Intertidal	X		Construction and Operation: • Decreased land-based access to intertidal zone may impact opportunities fro harvesting periwinkle and dulse	X		See above
	Fishery - Nearshore	X		Construction and Operation: • Disruption of fishing activities (lobster and gill net herring fishing) during vessel approach and departure	X		See above
	Tourism	X		Operation: • Impairment of tourism due to impairments of the visual quality of surrounding landscape and coastal environment/ change in landscape or coastal character	X		See above
	Land Value	X		Operation: • Decrease in property value within site vicinity as a result of actual and perceived effects	X		See above
	Recreation	X		Operation: • Reduced opportunities for land access to coast • Reduced enjoyment of outdoors based on actual and perceived effects	X		See above
Socio-cultural Environment	Quality of Life	X		Construction and Operation: • Potential impairments as a result of actual and/or perceived environmental degradation (key factor for Quality of Life)	X		See above
	Social Capital	X		Construction and Operation: • Controversy about the Project may affect trust, social cohesion, social support and civic engagement	X		See above

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Environment/ Resource	Environmental Components of Concern (ECC)	Pathway of Concern/ Project-Environment Interaction		Possible Pathways/Project-Environment Interactions	Determined to be a VEC?		Key Rationale for Inclusion/Exclusion as Valued Environmental (VEC)
		Yes	No		Yes	No	
	Commercial Patterns	X		Construction and Operation: • The proposed works and activities may affect current commercial activities such as near-shore fishing and tour boat operations	X		See above
	Community Infrastructure; Institutional Capacity	X		Construction and Operation: • Potential for improved infrastructure due to increase in municipal tax base and local employment opportunities.	X		See above
	Education, Training, Skills	X		Construction and Operation: • Increase in training opportunities and local skills set with employment opportunities at the quarry	X		See above
Human Health and Wellness	Drinking Water Quality	X		Operation: • Health effects through impaired well water quality at near-by residences	X		• Protected by statute/regulation • Significant public concern • Required under the EIS guidelines
	Marine Contaminants	X		Operation: • Health effects through consumption of marine biota with elevated contaminant concentrations	X		See above
	Land Contaminants	X		Operation: • Health effects through consumption of terrestrial biota with elevated contaminant concentrations	X		See above
	Country Foods	X		Operation: • Health effects through consumption of terrestrial biota with elevated contaminant concentrations	X		See above

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Table 2 Valued Environmental Components Assessed (Please see tables in Section 8.1 Methods)

Table	VEC	Table	VEC
3.1	**Climate**	3.13	**Aboriginal Land and Resource Use**
3.2	**Geology & Hydrogeology**	3.14	**Aesthetics**
	Basalt Rock		On-shore (HWY #217)
	Residential Well Water Yields		Bay of Fundy
	Residential Well Water Quality	3.15	**Transportation**
3.3	**Surficial Geology and Soils**		Land
3.4	**Surface Water**		Sea
	Little River Watershed	3.16	**Economy**
	On-site Surface Water Drainage/Wetlands		Employment
	On-site Surface Water Quality		GDP
3.5	**Physical Oceanography**		Municipal Taxes
	Turbidity		Economy – Fishery (/Aquaculture)
	Tides and currents		Economy – Fishery/Intertidal
3.6	**Air Quality**		Economy – Fishery/Nearshore
3.7	**Noise and Vibration**		Economy – Tourism
3.8	**Light**		Economy – Land Value
3.9	**Terrestrial Ecology**		Recreation
	Habitat (incl. plants, wildlife)	3.17	**Human Health, Wellness and Socio-Cultural Environment**
	Wetlands		Drinking Water Quality
	Migratory Birds		Marine Contaminants
	Species at Risk		Land Contaminants
3.10	**Aquatic Ecology – Freshwater**		Country Foods
	Fish habitat		Quality of Life
	Fish Species		Social Capital
3.11	**Aquatic Ecology - Marine**		Commercial Patterns
	Marine Fish Habitat (Intertidal, nearshore)		Community Infrastructure; Institutional Capacity
	Marine Mammals (incl. NARW)		Education, Training, Skills
	American Lobster		
	Marine Waterbirds		
	Marine Species at Risk (fish, mammals, reptiles, waterfowl)		
3.12	**Heritage Resources**		
	Marine Archaeology		
	Land Archaeology		
	Heritage Properties and Site History		
	Please see tables in Section 8.1 Impact Assessment Methodology		

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WP 1498 - NS Department of Environment and Labour
John Drage – Hydrogeologist
The EIS is well organized, well written and well presented...

RESPONSE
Comment noted.

WP 1524 - Transport Canada
1)Proponent to ensure any changes made in EIS are carried through the document where applicable and that changes are reflected in the Plain Language Summary....

RESPONSE
Comment noted.

WP 1525 - Natural Resources Canada
Comments from Reviewer 3:
...the information in the documents was not particularly well organized and as a result, some significant pieces of information may have been missed...

RESPONSE
Comment noted.

Comments from Reviewer 4:
Title of Vol. VI, section 9.1.7
...the title should be changed to Marine Environments and Physical Oceanography to reflect the contents.

RESPONSE
Comment noted and change made. Please refer to Bilcon's response in Section 9.1.5, Marine Environment and Physical Oceanography.

WP 1542 - Health Canada
The project EIS report includes many pictures and maps; unfortunately, many processes that will be used have not been described schematically...

RESPONSE
Please refer to Section 7.0 Revised Project Description and Section 9.1.6 Air Quality.

1625 – Partnership for Sustainable Development
Deficiency Statement 14
EIS Guidelines
4.2 – EIS Format – "For clarity and ease of reference, present the EIS in the same general order as the Guidelines." "Write the EIS in the clearest language possible." "Produce maps

4.2 EIS Format

using a limited number of common scales in order to permit inter-comparison and overlay of mapped features."

EIS

The EIS was not presented in the same order as the EIS Guidelines, requiring the reader to search through previous sections to try to find relevant reference sources. It would have been more user friendly to have the figures showing geology, hydrogeology, existing and future topography, locations of monitoring wells and residential wells, etc. on identical scales so that they could have been more easily compared.

RESPONSE

Comment noted. Please refer to Bilcon's response to Panel in this Section.

Deficiency Statement 15

EIS Guidelines

4.2 - EIS Format - 'A key subject index, glossary of technical terms and acronyms, and detailed table of contents are required."

EIS

The EIS does not include a Key Subject Index, as required by the Guidelines. This omission has the effect of hampering the reviewer's search of key topics and issues with the EIS, and should be rectified.

RESPONSE

Comment noted.

Deficiency Statement 16

EIS Guidelines

4.2 – EIS Format - 'Write the EIS in the clearest language possible." 'Produce maps using a limited number of common scales in order to permit inter-comparison and overlay of mapped features."

EIS

Metric units are only occasionally and inconsistently used. For example, Section 7.3 makes use of length measurements in inches and volume measurements in acre/feet. This is particularly confusing when describing units of mass in tons, as it is unclear if metric or imperial units are being used.[44] *The Proponent should revise the EIS to ensure that metric units should be used consistently throughout document. Information is repeated in multiple places, and lots of irrelevant information is provided, all of which obfuscates the useful content, and makes the EIA more difficult to assess.*

RESPONSE

Comment noted. Please refer to Bilcon's response to the Panel in this section.