ALBERTA ENVIRONMENT
ATTN: Wendell Koning
2 FL DEERFOOT SQ 2938 11 ST NE
CALGARY AB T2E 7L7

Date Received: 10-JUN-12
Report Date: 11-JUN-12 11:51 (MT)
Version: FINAL

Client Phone: 403-297-8271

Certificate of Analysis

Lab Work Order #: L1159987

Project P.O. #: NOT SUBMITTED
Job Reference: ABS095
C of C Numbers:
Legal Site Desc:

Monica Gibson
Account Manager

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-1	**12SWC80620**								
Group Number:									
Envirodat:	AB05CC170								
Location:	RED DEER RIVER SITE 2 - HWY 54								
Station Type:									
Sampled at:	RED DEER RIVER SITE 2 - HWY 54								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 15:00:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	0.00151		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	0.00378		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	0.00052		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	0.00156		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	0.00208		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0031		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	0.000372		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	0.000058		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-2	**12SWC80622**								
Group Number:									
Envirodat:	AB05CC0010								
Location:	RED DEER RIVER U/S HWY 2								
Station Type:									
Sampled at:	RED DEER RIVER U/S HWY 2								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 15:40:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	0.00059		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0031		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	0.000081		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-3	**12SWC80611**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1A								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1A								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 12:50:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	0.00051		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	0.00110		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	0.00057		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0028		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	0.000115		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-4	**12SWC80612**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1B								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1B								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 12:50:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	0.00487		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	0.0142		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	0.00129		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	0.00208		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	0.00737		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	0.00945		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0045		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	0.000089		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	0.00101		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	0.000104		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-5	**12SWC80613**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1C								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1C								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 13:15:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	0.00055		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0044		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-6	**12SWC80619**								
Group Number:									
Envirodat:	AB05CA0445								
Location:	RED DEER RIVER SITE 1 - GARRINGTON BRIDGE								
Station Type:									
Sampled at:	RED DEER RIVER SITE 1 - GARRINGTON BRIDGE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 14:10:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0029		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	0.000088		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	0.000056		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 11-JUN-12

Lab Workorder Number: L1159987
Project Reference: ABS095
Project P.O. #.:

Date Received: 10-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159987-7	**12SWC80618**								
Group Number:									
Envirodat:	AB05CA0050								
Location:	RED DEER RIVER AT SUNDRE								
Station Type:									
Sampled at:	RED DEER RIVER AT SUNDRE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	09-JUN-12 13:00:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	10-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	10-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	10-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	10-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	10-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	10-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	10-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	10-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	10-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	11-JUN-12	GKT
		Phenols (4AAP)	0.0015		0.0010	mg/L	6537	11-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

Reference Information

ALS Test Code	Test Description	Methodology Reference (In-House Standard Operating Procedures which Generally Follow:)
BTXS,F1-CL	BTEX, Styrene and F1 (C6-C10)	EPA 8260/8015 (PT)
F2,F3,F4-CL	F2, F3, F4	EPA 8015
OGG-CL	Oil and Grease-Gravimetric	APHA 5520 G
PAH-ABT1-CL	PAH & Carcinogenic PAH List	EPA 8270 (SIM)
PHENOLS-4AAP-ED	Phenols (4AAP)	AB ENV.06537

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L1159987

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Page 1 of 4

Report to:			**Report Format / Distribution**			**Service Requested:** (rush - subject to availability)
Company:	Alberta Environment		☐ Standard	☐ Other		○ Regular (Default)
Contact:	Wendell Koning		☑ PDF	☑ Excel	☐ Digital	○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE		Email 1:	Chris.Teichreb@gov.ab.ca		◉ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7		Email 2:	Ray.Walker@gov.ab.ca		○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267	Fax: 403 297-6069				**Analysis Request**
Invoice To:	Same as Report ? ◉ Yes ○ No		**Client / Project Information:**			Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:			Job #:			
Contact:			PO / AFE:			
Address:			Legal Site Description:			
Phone:		Fax:	Quote #:			
[redacted]			**ALS Contact:**		**Sampler:** Ray Walker	

	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
			Water	X	X	X	X	X	
			Water	X	X	X	X	X	

Sample No: 12SWC80620 Group Sample No:
Station No: AB05CC0170 Project No. ABS095
Site Descrip: RED DEER RIVER SITE 2 - Hwy 54
DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1500 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: _ _ M.

Sample No: 12SWC80622 Group Sample No:
Station No: AB05CC0010 Project No. ABS095
Site Descrip: RED DEER RIVER U/S HWY 2
DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1540 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

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SHIPMENT RELEASE (Client)		SHIPMENT RECEPTION (ALS)				SHIPMENT VERIFICATION (ALS)		
Released by:	Date & Time: 1008 10 Jun. 12	Received by:	Date: 10 Jun 12	Time: 10:07	Temperature: 7	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF

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Report to:				**Report Format / Distribution**			**Service Requested:** (rush - subject to availability)
Company:	Alberta Environment			☐ Standard ☐ Other			○ Regular (Default)
Contact:	Wendell Koning			☑ PDF ☑ Excel ☐ Digital			○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE			Email 1: Chris.Teichreb@gov.ab.ca			◉ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7			Email 2: Ray.Walker@gov.ab.ca			○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267	Fax:	403 297-6069				**Analysis Request**
Invoice To:	Same as Report ? ◉ Yes ○ No			**Client / Project Information:**			Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:				Job #:			
Contact:				PO / AFE:			
Address:				Legal Site Description:			
Phone:		Fax:		Quote #:			
[redacted] (lab use only)				**ALS Contact:**	**Sampler:** Ray Walker		

	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
			Water	X	X	X	X	X	
			Water	X	X	X	X	X	

Sample No: 12SWC80611 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST EAST PROFILE 1A
DD-MON-YYYY
Sample Date: 09 - JUN-2012 Time: 1250 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Sample No: 12SWC80612 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1B
DD-MON-YYYY
Sample Date: 09 - JUN-2012 Time: 1250 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

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[redacted] (lab use only)

Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	10-Jun-12		10:07	7	7 Jun 12			

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Report to:				**Report Format / Distribution**			**Service Requested:** (rush - subject to availability)
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Contact:	Wendell Koning			☑ PDF ☑ Excel ☐ Digital			○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE			Email 1:	Chris.Teichreb@gov.ab.ca		◉ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7			Email 2:	Ray.Walker@gov.ab.ca		○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267	Fax:	403 297-6069				**Analysis Request**
Invoice To:	Same as Report ? ◉ Yes ○ No			**Client / Project Information:**			Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:				Job #:			
Contact:				PO / AFE:			
Address:				Legal Site Description:			
Phone:		Fax:		Quote #:			
				ALS Contact:		**Sampler:** Ray Walker	

Sample No: 12SWC80613 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1C

DD-MON-YYYY

Sample Date: 09 - JUN-2012 Time: 1315 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
			Water	X	X	X	X	X	
			Water	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	

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Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	10-Jun-12		10 Jun 12	10:07	7			

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Report to:			
Company:	Alberta Environment		
Contact:	Wendell Koning		
Address:	2938 11 Street NE		
	Calgary, AB T2E 7L7		
Phone:	403 297-8267	Fax:	403 297-6069

Invoice To:	Same as Report ? ◉ Yes ○ No		
Company:			
Contact:			
Address:			
Phone:		Fax:	

Report Format / Distribution

☐ Standard ☐ Other
☑ PDF ☑ Excel ☐ Digital
Email 1: Chris.Teichreb@gov.ab.ca
Email 2: Ray.Walker@gov.ab.ca

Service Requested: (rush - subject to availability)

○ Regular (Default)
○ Priority (2-3 Business Days) - 50% Surcharge
◉ Emergency (1 Business Day) - 100% Surcharge
○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS

Client / Project Information:

Job #:
PO / AFE:
Legal Site Description:
Quote #:

ALS Contact: **Sampler:** Ray Walker

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample No: 12SWC80619 Group Sample No:
Station No: AB05CA0445 Project No. ABS095
Site Descrip: RED DEER RIVER SITE 1 – Garrington Bridge

DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1410 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

Sample No: 12SWC80618 Group Sample No:
Station No: AB05CA0050 Project No. ABS095
Site Descrip: RED DEER RIVER AT SUNDRE

DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1300 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
			Water	X	X	X	X	X	
			Water	X	X	X	X	X	

Special Instructions / Regulations / Hazardous Details

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Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	10-Jun-12 1008		10Jun12	10:07	7°C			

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Your Project #: ABS095

Attention: RAY WALKER
ALBERTA ENVIRONMENT
CALGARY MONITORING TEAM
MONITORING TEAM
1st FLOOR, 2938 - 11 STREET NE
CALGARY, AB
CANADA T2E 7L7

Report Date: 2012/06/11

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B248394
Received: 2012/06/09, 10:15

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	5	N/A	2012/06/10	AB SOP-00005	SM 2320-B
Chloride by Automated Colourimetry	5	N/A	2012/06/11	AB SOP-00020	EPA 325.2
True Colour	5	N/A	2012/06/11	CAL SOP-00049	SM 2120 C
Carbon (DOC)	5	N/A	2012/06/11	CAL SOP-00077	MMCW 119
Conductivity @25C	5	N/A	2012/06/10	AB SOP-00005	SM 2510-B
Fluoride	5	N/A	2012/06/10	AB SOP-00005	SM 4500-F C
Sulphide (as H2S)	5	N/A	2012/06/11	CAL SOP-00062	SM 4500-S2 D
Hardness	5	N/A	2012/06/11	AB WI-00065	SM 2340B
Elements by ICP - Dissolved	4	N/A	2012/06/10	AB SOP-00042	EPA 200.7
Elements by ICP - Dissolved	1	N/A	2012/06/11	AB SOP-00042	EPA 200.7
Ion Balance	5	N/A	2012/06/10	AB WI-00065	SM 1030E
Ammonia-N (Total)	5	N/A	2012/06/11	AB SOP-00007	EPA 350.1
Nitrate + Nitrite-N (calculated)	5	N/A	2012/06/10	AB SOP-00023	SM 4110-B
Nitrogen, (Nitrite, Nitrate) by IC	5	N/A	2012/06/09	AB SOP-00023	SM 4110-B
Oil and Grease by IR	5	2012/06/09	2012/06/11	CAL SOP-00096	SM 5520C
pH @25°C (Alkalinity titrator)	5	N/A	2012/06/10	AB SOP-00005	SM 4500-H+B
Phenols (4-AAP)	5	N/A	2012/06/11	CAL SOP-00067	EPA 420.2
Orthophosphate by Konelab	5	N/A	2012/06/11	AB SOP-00025	SM 4500-P
Sulphide	5	N/A	2012/06/11	CAL SOP-00062	SM 4500-S2 D
Sulphate by Automated Colourimetry	5	N/A	2012/06/11	AB SOP-00018	EPA 375.4
Total Dissolved Solids (Filt. Residue)	5	2012/06/11	2012/06/11	CAL SOP-00074	SM 2540-C
Total Dissolved Solids (Calculated)	5	N/A	2012/06/11	AB WI-00065	SM 1030E
Total Phosphorous	5	2012/06/11	2012/06/11	AB SOP-00024	SM 4500-P
Total Suspended Solids (NFR)	5	2012/06/11	2012/06/11	CAL SOP-00075	SM 2540-D
Turbidity	5	N/A	2012/06/11	CAL SOP-00081	SM 2130B

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

../2

Your Project #: ABS095

Attention: RAY WALKER
ALBERTA ENVIRONMENT
CALGARY MONITORING TEAM
MONITORING TEAM
1st FLOOR, 2938 - 11 STREET NE
CALGARY, AB
CANADA T2E 7L7

Report Date: 2012/06/11

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

Encryption Key

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

Jesse Bourque, Project Manager
Email: JBourque@maxxam.ca
Phone# (403) 291-3077

==========

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. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B248394
Report Date: 2012/06/11

ALBERTA ENVIRONMENT
Client Project #: ABS095

ROUTINE WATER (WATER)

Maxxam ID		DQ0662	DQ0663		DQ0664		
Sampling Date		2012/06/08 18:20	2012/06/08 18:30		2012/06/08 18:40		
	UNITS	**12SWC80601**	**12SWC80601**	**QC Batch**	**12SWC80601**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	180	150	5907725	160	0.50	5907725
Ion Balance	N/A	0.98	0.92	5907726	0.97	0.010	5907726
Nitrate plus Nitrite (N)	mg/L	0.053	0.079	5907728	0.079	0.0030	5907728
Total Dissolved Solids	mg/L	200	180	5907729	170	10	5907729
Misc. Inorganics							
Conductivity	uS/cm	350	300	5908310	270	1.0	5908310
pH	N/A	8.18	8.11	5908311	8.07	N/A	5908311
Anions							
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	5908309	<0.50	0.50	5908309
Alkalinity (Total as CaCO3)	mg/L	150	140	5908309	140	0.50	5908309
Bicarbonate (HCO3)	mg/L	180	170	5908309	170	0.50	5908309
Carbonate (CO3)	mg/L	<0.50	<0.50	5908309	<0.50	0.50	5908309
Hydroxide (OH)	mg/L	<0.50	<0.50	5908309	<0.50	0.50	5908309
Dissolved Sulphate (SO4)	mg/L	42	32	5909600	28	1.0	5909600
Dissolved Chloride (Cl)	mg/L	2.1	1.4	5909556	1.4	1.0	5909556
Nutrients							
Dissolved Nitrite (N)	mg/L	<0.0030	<0.0030	5907928	<0.0030	0.0030	5907928
Dissolved Nitrate (N)	mg/L	0.053	0.079	5907928	0.079	0.0030	5907928
Elements							
Dissolved Calcium (Ca)	mg/L	48	41	5908429	43	0.30	5909943
Dissolved Iron (Fe)	mg/L	<0.060	0.17	5908429	0.29	0.060	5909943
Dissolved Magnesium (Mg)	mg/L	15	12	5908429	12	0.20	5909943
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	5908429	<0.0040	0.0040	5909943
Dissolved Potassium (K)	mg/L	1.4	1.4	5908429	1.3	0.30	5909943
Dissolved Sodium (Na)	mg/L	4.6	3.5	5908429	3.6	0.50	5909943

RDL = Reportable Detection Limit

Maxxam Job #: B248394
Report Date: 2012/06/11

ALBERTA ENVIRONMENT
Client Project #: ABS095

ROUTINE WATER (WATER)

Maxxam ID		DQ0665	DQ0666		
Sampling Date		2012/06/08 18:50	2012/06/08 19:40		
	UNITS	**12SWC80601**	**12SWC80601**	**RDL**	**QC Batch**
Calculated Parameters					
Hardness (CaCO3)	mg/L	140	180	0.50	5907725
Ion Balance	N/A	0.91	0.97	0.010	5907726
Nitrate plus Nitrite (N)	mg/L	0.076	0.059	0.0030	5907728
Total Dissolved Solids	mg/L	160	200	10	5907729
Misc. Inorganics					
Conductivity	uS/cm	270	350	1.0	5908310
pH	N/A	8.07	8.25	N/A	5908311
Anions					
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	0.50	5908309
Alkalinity (Total as CaCO3)	mg/L	130	150	0.50	5908309
Bicarbonate (HCO3)	mg/L	160	180	0.50	5908309
Carbonate (CO3)	mg/L	<0.50	<0.50	0.50	5908309
Hydroxide (OH)	mg/L	<0.50	<0.50	0.50	5908309
Dissolved Sulphate (SO4)	mg/L	27	42	1.0	5909600
Dissolved Chloride (Cl)	mg/L	1.2	2.2	1.0	5909556
Nutrients					
Dissolved Nitrite (N)	mg/L	<0.0030	<0.0030	0.0030	5907928
Dissolved Nitrate (N)	mg/L	0.076	0.059	0.0030	5907928
Elements					
Dissolved Calcium (Ca)	mg/L	37	47	0.30	5908429
Dissolved Iron (Fe)	mg/L	0.28	<0.060	0.060	5908429
Dissolved Magnesium (Mg)	mg/L	11	15	0.20	5908429
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	5908429
Dissolved Potassium (K)	mg/L	1.4	1.3	0.30	5908429
Dissolved Sodium (Na)	mg/L	3.0	4.5	0.50	5908429

RDL = Reportable Detection Limit

Maxxam Job #: B248394
Report Date: 2012/06/11

ALBERTA ENVIRONMENT
Client Project #: ABS095

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		DQ0662	DQ0663	DQ0664	DQ0665		
Sampling Date		2012/06/08 18:20	2012/06/08 18:30	2012/06/08 18:40	2012/06/08 18:50		
	UNITS	**12SWC80601**	**12SWC80601**	**12SWC80601**	**12SWC80601**	**RDL**	**QC Batch**
Calculated Parameters							
Hydrogen Sulphide (H2S)	mg/L	0.0070	0.025	<0.0020	0.050	0.0020	5907860
Misc. Inorganics							
Dissolved Organic Carbon (C)	mg/L	4.2	5.5	6.8	6.8	0.50	5909401
Total Dissolved Solids	mg/L	200	200	180	190	10	5908856
Total Suspended Solids	mg/L	57	220	250	6.0	1.0	5909332
Anions							
Dissolved Fluoride (F)	mg/L	0.17	0.17	0.17	0.16	0.050	5908312
Sulphide	mg/L	0.0070	0.024	<0.0020	0.047	0.0020	5909168
Nutrients							
Total Ammonia (N)	mg/L	<0.050	0.053	0.051	0.070	0.050	5909072
Orthophosphate (P)	mg/L	0.0030	0.0070	0.010	0.011	0.0030	5909251
Total Phosphate (P)	mg/L	0.0070	0.15	0.23	0.30	0.0030	5911387
Misc. Organics							
Oil and grease	mg/L	<2.0	<2.0	<2.0	<2.0	2.0	5907999
Phenols	mg/L	<0.0020	<0.0020	0.0023	0.0034	0.0020	5909026
Physical Properties							
True Colour	PtCo units	8.4	18	26	27	2.0	5910179
Physical Properties							
Turbidity	NTU	9.2	310	510	560	0.10	5908865

RDL = Reportable Detection Limit

Maxxam Job #: B248394
Report Date: 2012/06/11

ALBERTA ENVIRONMENT
Client Project #: ABS095

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		DQ0666		
Sampling Date		2012/06/08 19:40		
	UNITS	**12SWC80601**	**RDL**	**QC Batch**
Calculated Parameters				
Hydrogen Sulphide (H2S)	mg/L	<0.0020	0.0020	5907860
Misc. Inorganics				
Dissolved Organic Carbon (C)	mg/L	4.5	0.50	5909401
Total Dissolved Solids	mg/L	210	10	5908856
Total Suspended Solids	mg/L	15	1.0	5909332
Anions				
Dissolved Fluoride (F)	mg/L	0.18	0.050	5908312
Sulphide	mg/L	<0.0020	0.0020	5909168
Nutrients				
Total Ammonia (N)	mg/L	<0.050	0.050	5909072
Orthophosphate (P)	mg/L	0.0030	0.0030	5909251
Total Phosphate (P)	mg/L	0.013	0.0030	5911387
Misc. Organics				
Oil and grease	mg/L	<2.0	2.0	5907999
Phenols	mg/L	<0.0020	0.0020	5909026
Physical Properties				
True Colour	PtCo units	7.3	2.0	5910179
Physical Properties				
Turbidity	NTU	19	0.10	5908865

RDL = Reportable Detection Limit

Maxxam Job #: B248394
Report Date: 2012/06/11

ALBERTA ENVIRONMENT
Client Project #: ABS095

General Comments

Results relate only to the items tested.

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB248394

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5907928	RP0	Matrix Spike	Dissolved Nitrite (N)	2012/06/09		101	%	80 - 120
			Dissolved Nitrate (N)	2012/06/09		103	%	80 - 120
		Spiked Blank	Dissolved Nitrite (N)	2012/06/09		100	%	90 - 110
			Dissolved Nitrate (N)	2012/06/09		101	%	90 - 110
		Method Blank	Dissolved Nitrite (N)	2012/06/09	<0.0030		mg/L	
			Dissolved Nitrate (N)	2012/06/09	0.0030, RDL=0.0030		mg/L	
		RPD	Dissolved Nitrite (N)	2012/06/09	NC		%	20
			Dissolved Nitrate (N)	2012/06/09	5.7		%	20
5907999	WL	Spiked Blank	Oil and grease	2012/06/11		96	%	70 - 130
		Method Blank	Oil and grease	2012/06/11	<2.0		mg/L	
5908309	BE3	Spiked Blank	Alkalinity (Total as CaCO3)	2012/06/10		98	%	80 - 120
		Method Blank	Alkalinity (PP as CaCO3)	2012/06/10	<0.50		mg/L	
			Alkalinity (Total as CaCO3)	2012/06/10	<0.50		mg/L	
			Bicarbonate (HCO3)	2012/06/10	<0.50		mg/L	
			Carbonate (CO3)	2012/06/10	<0.50		mg/L	
			Hydroxide (OH)	2012/06/10	<0.50		mg/L	
		RPD [DQ0662-01]	Alkalinity (PP as CaCO3)	2012/06/10	NC		%	20
			Alkalinity (Total as CaCO3)	2012/06/10	2.2		%	20
			Bicarbonate (HCO3)	2012/06/10	2.2		%	20
			Carbonate (CO3)	2012/06/10	NC		%	20
			Hydroxide (OH)	2012/06/10	NC		%	20
5908310	BE3	Spiked Blank	Conductivity	2012/06/10		97	%	90 - 110
		Method Blank	Conductivity	2012/06/10	1.0, RDL=1.0		uS/cm	
		RPD [DQ0662-01]	Conductivity	2012/06/10	0.3		%	20
5908311	BE3	Spiked Blank	pH	2012/06/10		100	%	97 - 102
		RPD [DQ0662-01]	pH	2012/06/10	0.8		%	5
5908312	BE3	Matrix Spike [DQ0662-01]	Dissolved Fluoride (F)	2012/06/10		99	%	80 - 120
		Spiked Blank	Dissolved Fluoride (F)	2012/06/10		100	%	80 - 120
		Method Blank	Dissolved Fluoride (F)	2012/06/10	<0.050		mg/L	
		RPD [DQ0662-01]	Dissolved Fluoride (F)	2012/06/10	NC		%	20
5908429	ST1	Matrix Spike	Dissolved Calcium (Ca)	2012/06/10		96	%	80 - 120
			Dissolved Iron (Fe)	2012/06/10		97	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/10		98	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/10		97	%	80 - 120
			Dissolved Potassium (K)	2012/06/10		102	%	80 - 120
			Dissolved Sodium (Na)	2012/06/10		96	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2012/06/10		100	%	80 - 120
			Dissolved Iron (Fe)	2012/06/10		98	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/10		102	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/10		98	%	80 - 120
			Dissolved Potassium (K)	2012/06/10		105	%	80 - 120
			Dissolved Sodium (Na)	2012/06/10		98	%	80 - 120
		Method Blank	Dissolved Calcium (Ca)	2012/06/10	<0.30		mg/L	
			Dissolved Iron (Fe)	2012/06/10	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2012/06/10	<0.20		mg/L	
			Dissolved Manganese (Mn)	2012/06/10	<0.0040		mg/L	
			Dissolved Potassium (K)	2012/06/10	<0.30		mg/L	
			Dissolved Sodium (Na)	2012/06/10	<0.50		mg/L	
		RPD	Dissolved Calcium (Ca)	2012/06/10	0.4		%	20
			Dissolved Iron (Fe)	2012/06/10	NC		%	20
			Dissolved Magnesium (Mg)	2012/06/10	0.05		%	20
			Dissolved Manganese (Mn)	2012/06/10	NC		%	20
			Dissolved Potassium (K)	2012/06/10	NC		%	20
			Dissolved Sodium (Na)	2012/06/10	0.6		%	20

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB248394

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5908856	HE1	Spiked Blank	Total Dissolved Solids	2012/06/11		90	%	80 - 113
		Method Blank	Total Dissolved Solids	2012/06/11	<10		mg/L	
		RPD	Total Dissolved Solids	2012/06/11	3.0		%	20
5908865	HE1	Spiked Blank	Turbidity	2012/06/11		98	%	93 - 99
		Method Blank	Turbidity	2012/06/11	<0.10		NTU	
		RPD	Turbidity	2012/06/11	7.0		%	20
5909026	LY	Matrix Spike						
		[DQ0662-01]	Phenols	2012/06/11		93	%	80 - 120
		Spiked Blank	Phenols	2012/06/11		95	%	80 - 120
		Method Blank	Phenols	2012/06/11	<0.0020		mg/L	
		RPD [DQ0662-01]	Phenols	2012/06/11	NC		%	20
5909072	SK9	Matrix Spike	Total Ammonia (N)	2012/06/11		NC	%	80 - 120
		Spiked Blank	Total Ammonia (N)	2012/06/11		110	%	80 - 120
		Method Blank	Total Ammonia (N)	2012/06/11	<0.050		mg/L	
		RPD	Total Ammonia (N)	2012/06/11	0.8		%	20
5909168	LS0	Spiked Blank	Sulphide	2012/06/11		108	%	80 - 120
		Method Blank	Sulphide	2012/06/11	<0.0020		mg/L	
		RPD	Sulphide	2012/06/11	NC		%	20
5909251	SK9	Matrix Spike						
		[DQ0662-01]	Orthophosphate (P)	2012/06/11		90	%	80 - 120
		Spiked Blank	Orthophosphate (P)	2012/06/11		97	%	80 - 120
		Method Blank	Orthophosphate (P)	2012/06/11	<0.0030		mg/L	
		RPD [DQ0662-01]	Orthophosphate (P)	2012/06/11	NC		%	20
5909332	HE1	Spiked Blank	Total Suspended Solids	2012/06/11		92	%	81 - 105
		Method Blank	Total Suspended Solids	2012/06/11	<1.0		mg/L	
		RPD	Total Suspended Solids	2012/06/11	0		%	20
5909401	AP1	Matrix Spike						
		[DQ0662-01]	Dissolved Organic Carbon (C)	2012/06/11		106	%	80 - 120
		Spiked Blank	Dissolved Organic Carbon (C)	2012/06/11		99	%	84 - 120
		Method Blank	Dissolved Organic Carbon (C)	2012/06/11	<0.50		mg/L	
		RPD [DQ0662-01]	Dissolved Organic Carbon (C)	2012/06/11	9.0		%	20
5909556	ZI	Matrix Spike	Dissolved Chloride (Cl)	2012/06/11		NC	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2012/06/11		102	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2012/06/11	<1.0		mg/L	
		RPD	Dissolved Chloride (Cl)	2012/06/11	3.7		%	20
5909600	ZI	Matrix Spike	Dissolved Sulphate (SO4)	2012/06/11		NC	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2012/06/11		101	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2012/06/11	<1.0		mg/L	
		RPD	Dissolved Sulphate (SO4)	2012/06/11	1.7		%	20
5909943	PL	Matrix Spike	Dissolved Calcium (Ca)	2012/06/11		NC	%	80 - 120
			Dissolved Iron (Fe)	2012/06/11		96	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/11		NC	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/11		NC	%	80 - 120
			Dissolved Potassium (K)	2012/06/11		99	%	80 - 120
			Dissolved Sodium (Na)	2012/06/11		NC	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2012/06/11		107	%	80 - 120
			Dissolved Iron (Fe)	2012/06/11		102	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/11		103	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/11		101	%	80 - 120
			Dissolved Potassium (K)	2012/06/11		100	%	80 - 120
			Dissolved Sodium (Na)	2012/06/11		99	%	80 - 120
		Method Blank	Dissolved Calcium (Ca)	2012/06/11	<0.30		mg/L	
			Dissolved Iron (Fe)	2012/06/11	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2012/06/11	<0.20		mg/L	
			Dissolved Manganese (Mn)	2012/06/11	<0.0040		mg/L	

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB248394

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5909943	PL	Method Blank	Dissolved Potassium (K)	2012/06/11	<0.30		mg/L	
			Dissolved Sodium (Na)	2012/06/11	<0.50		mg/L	
		RPD	Dissolved Sodium (Na)	2012/06/11	1.4		%	20
5910179	ZI	Spiked Blank	True Colour	2012/06/11		99	%	90 - 110
		Method Blank	True Colour	2012/06/11	<2.0		PtCo units	
		RPD [DQ0662-01]	True Colour	2012/06/11	NC		%	20
5911387	SK9	Matrix Spike [DQ0662-01]	Total Phosphate (P)	2012/06/11		103	%	80 - 120
		QC Standard	Total Phosphate (P)	2012/06/11		95	%	80 - 120
		Spiked Blank	Total Phosphate (P)	2012/06/11		102	%	83 - 111
		Method Blank	Total Phosphate (P)	2012/06/11	<0.0030		mg/L	
		RPD [DQ0662-01]	Total Phosphate (P)	2012/06/11	NC		%	20

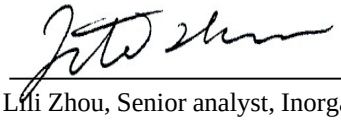
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B248394

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Luba Shymushovska, Senior Analyst, Organic Department



Lili Zhou, Senior analyst, Inorganic department.

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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. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

Calgary: 2021-41st Ave. NE, T2E 6P2. Ph: (403) 291-3077, Fax: (403) 291-9468, Toll free: (800) 386-7247
Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	B248394
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES, OIL AND GREASE, AND** PHENOLS	

SAMPLE INFORMATION

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST EAST PROFILE 1A

DD-MON-YYYY

Sample Date: 08 - JUN-2012 Time: 18:20 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Jesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	1A

2012/06/09
1015
Helen Day
8.6, 7.5 8.6

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

Calgary: 2021-41st Ave. NE, T2E 6P2. Ph: (403) 291-3077, Fax: (403) 291-9468, Toll free: (800) 386-7247
Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	B248394
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES, OIL AND GREASE, AND** PHENOLS	

SAMPLE INFORMATION

Sample No:12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1B
DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 18:30 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Jesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	16

2012/06/09
Heb Day 1015

8.6, 7.5, 8.6

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

Maxxam Analytics Inc

Calgary: 2021-41st Ave. NE, T2E 6P2. Ph: (403) 291-3077, Fax: (403) 291-9468, Toll free: (800) 386-7247
Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Alberta Environment
Chain of Custody / Analytical Request Form

Results to	RAY WALKER	**Maxxam Lab #**	B298394
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES, OIL AND GREASE, AND** PHENOLS	

SAMPLE INFORMATION

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1C

DD-MON-YYYY

Sample Date: 08 - JUN-2012 Time: 18:40 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Jesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	1.C

2012/06/09
Hela Day 10:15

8.6, 7.5, 8.6

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

Calgary: 2021-41st Ave. NE, T2E 6P2. Ph: (403) 291-3077, Fax: (403) 291-9468, Toll free: (800) 386-7247
Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	B248373
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES, OIL AND GREASE, AND** PHENOLS	

SAMPLE INFORMATION

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1D

DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 18:50 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

ori Beerwart - Edmonton (780) 468-3537

esse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	1P

2012/06/09
1015

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

8.6, 7.5, 8.6

Maxxam Analytics Inc

Calgary: 2021-41st Ave. NE, T2E 6P2. Ph: (403) 291-3077, Fax: (403) 291-9468, Toll free: (800) 386-7247
Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Alberta Environment
Chain of Custody / Analytical Request Form

Results to	RAY WALKER	**Maxxam Lab #**	B248373
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES, OIL AND GREASE, AND** PHENOLS	

SAMPLE INFORMATION

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0400 Project No. ABS095
Site Descrip: GLENNIFER LAKE: CENTRAL PROFILE
DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 9:40 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Jesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #: 2

2012/06/09
1015

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

8.6, 7.5, 8.6

ALBERTA ENVIRONMENT
ATTN: WENDELL KONING
2 FL DEERFOOT SQ 2938 11 ST NE
CALGARY AB T2E 7L7

Date Received: 09-JUN-12
Report Date: 12-JUN-12 16:44 (MT)
Version: FINAL REV. 2

Client Phone: 403-297-8271

Certificate of Analysis

Lab Work Order #: L1159927

Project P.O. #: NOT SUBMITTED
Job Reference: ABS095
C of C Numbers:
Legal Site Desc:

Comments:

12-JUN-12: Updated sample ids as per Ray Walker.

Monica Gibson
Account Manager

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 12-JUN-12

Lab Workorder Number: L1159927
Project Reference: ABS095
Project P.O. #.:

Date Received: 09-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159927-1	**12SWC80601**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1A								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1A								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	08-JUN-12 18:20:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	09-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	09-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	09-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	09-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	09-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	09-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	09-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	09-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	09-JUN-12	JDV
Misc									
		Oil And Grease (Visible Sheen)	NEGATIVE				NA	09-JUN-12	
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 12-JUN-12

Lab Workorder Number: L1159927
Project Reference: ABS095
Project P.O. #.:

Date Received: 09-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159927-2	**12SWC80602**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1B								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1B								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	08-JUN-12 18:30:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	09-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	09-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	09-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	09-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	09-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	09-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	09-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	09-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	09-JUN-12	JDV
Misc									
		Oil And Grease (Visible Sheen)	NEGATIVE				NA	09-JUN-12	
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 12-JUN-12

Lab Workorder Number: L1159927
Project Reference: ABS095
Project P.O. #.:

Date Received: 09-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159927-3	**12SWC80603**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1C								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1C								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	08-JUN-12 18:40:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	09-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	09-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	09-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	09-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	09-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	09-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	09-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	09-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	09-JUN-12	JDV
Misc									
		Oil And Grease (Visible Sheen)	NEGATIVE				NA	09-JUN-12	
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000020	DLM	0.000020	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 12-JUN-12

Lab Workorder Number: L1159927
Project Reference: ABS095
Project P.O. #.:

Date Received: 09-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159927-4	**12SWC80604**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1D								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1D								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	08-JUN-12 18:50:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	09-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	09-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	09-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	09-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	09-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	09-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	09-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	09-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	09-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	09-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	09-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	09-JUN-12	JDV
Misc									
		Oil And Grease (Visible Sheen)	NEGATIVE				NA	09-JUN-12	
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	0.000052		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 12-JUN-12

Lab Workorder Number: L1159927
Project Reference: ABS095
Project P.O. #.:

Date Received: 09-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1159927-5	**12SWC80605**								
Group Number:									
Envirodat:	AB05CB0400								
Location:	GLENNIFER LAKE: CENTRAL PROFILE 2								
Station Type:									
Sampled at:	GLENNIFER LAKE: CENTRAL PROFILE 2								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	08-JUN-12 19:40:00								
BTEX with Styrene, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	10-JUN-12	VRP
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	10-JUN-12	VRP
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	10-JUN-12	VRP
BTEX, Styrene and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	80086	09-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	80092	09-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	80096	09-JUN-12	JDV
		o-Xylene	<0.00050		0.00050	mg/L	80097	09-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	80095	09-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	97904	09-JUN-12	JDV
		Styrene	<0.0010		0.0010	mg/L	97895	09-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L	107874	09-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L	107875	09-JUN-12	JDV
Misc									
		Oil And Grease (Visible Sheen)	NEGATIVE				NA	09-JUN-12	
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	10-JUN-12	VRP
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	10-JUN-12	VRP
		Anthracene	<0.000010		0.000010	mg/L	103764	10-JUN-12	VRP
		Fluoranthene	<0.000020		0.000020	mg/L	103772	10-JUN-12	VRP
		Fluorene	<0.000050		0.000050	mg/L	103723	10-JUN-12	VRP
		Naphthalene	<0.000050		0.000050	mg/L	103776	10-JUN-12	VRP
		Phenanthrene	<0.000050		0.000050	mg/L	103777	10-JUN-12	VRP
		Pyrene	<0.000020		0.000020	mg/L	103776	10-JUN-12	VRP
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	10-JUN-12	VRP
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	10-JUN-12	VRP
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	10-JUN-12	VRP
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	10-JUN-12	VRP
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	10-JUN-12	VRP
		Chrysene	<0.000050		0.000050	mg/L	103770	10-JUN-12	VRP
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	10-JUN-12	VRP
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	10-JUN-12	VRP
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	10-JUN-12	VRP

Reference Information

ALS Test Code	Test Description	Methodology Reference (In-House Standard Operating Procedures which Generally Follow:)
BTXS,F1-CL	BTEX, Styrene and F1 (C6-C10)	EPA 8260/8015 (PT)
F2,F3,F4-CL	F2, F3, F4	EPA 8015
OGG-VISIBLE-SHEEN-CL	Oil and Grease - Visible Sheen	ALBERTA ENV. REGS
PAH-ABT1-CL	PAH & Carcinogenic PAH List	EPA 8270 (SIM)

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects

Rev# 1.00

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

COC # L1159927

Page 1 of 1

Report to:		**Report Format / Distribution**		**Service Requested:** (rush - subject to availability)
Company:	Alberta Environment	☐ Standard ☐ Other		◉ Regular (Default)
Contact:	Wendell Koning	☑ PDF ☑ Excel ☐ Digital		○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE	Email 1:	Wendell.Koning@gov.ab.ca	○ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7	Email 2:	Ray.Walker@gov.ab.ca	○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267 Fax: 403 297-6069			**Analysis Request**
Invoice To:	Same as Report ? ◉ Yes ○ No	**Client / Project Information:**		Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:		Job #:		
Contact:		PO / AFE:		
Address:		Legal Site Description:		
Phone:	Fax:	Quote #:		

Lab Work Order #

S
ntact:

Sampler: Ray Walker

	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	Number of Containers
			Water	X	X	X	6
			Water	X	X	X	6
			Water	X	X	X	6

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1B
DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 1635 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1C
DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 1840 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

ial Instructions / Regulations / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)		SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)		
Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
		MM.	9-JUN-12	10:10	10			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - REPORT COPY, PINK - FILE COPY, YELLOW - CLIENT COPY

GENF 18.00 Front

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

COC # L1159927

Page 1 of 1

Report to:		**Report Format / Distribution**		**Service Requested:** (rush - subject to availability)
Company:	Alberta Environment	☐ Standard ☐ Other		◉ Regular (Default)
Contact:	Wendell Koning	☑ PDF ☑ Excel ☐ Digital		○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE	Email 1:	Wendell.Koning@gov.ab.ca	○ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7	Email 2:	Ray.Walker@gov.ab.ca	○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267 Fax: 403 297-6069			**Analysis Request**
Invoice To:	Same as Report ? ◉ Yes ○ No	**Client / Project Information:**		Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:		Job #:		
Contact:		PO / AFE:		
		Site Description:		
		#:		
		Contact:	**Sampler:** Ray Walker	

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1D
DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 1850 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

1) GLENNIFER LAKE EAST 1B

Sample No: 12SWC80601 Group Sample No:
Station No: AB05CB0400 Project No. ABS095
Site Descrip: GLENNIFER LAKE: CENTRAL PROFILE 2
DD-MON-YYYY
Sample Date: 08 - JUN-2012 Time: 1940 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	Number of Containers
			Water	X	X	X	
			Water	X	X	X	
			Water	X	X	X	

Special Instructions / Regulations / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)		SHIPMENT RECEPTION (lab use only)			SHIPMENT VERIFICATION (lab use only)		
Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
		MM	9-JUN-12	10:10	10			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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GENF 18.00 Front

Your Project #: ABS095

Attention: RAY WALKER
ALBERTA ENVIRONMENT
CALGARY MONITORING TEAM
MONITORING TEAM
1st FLOOR, 2938 - 11 STREET NE
CALGARY, AB
CANADA T2E 7L7

Report Date: 2012/06/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B248517
Received: 2012/06/10, 10:30

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	7	N/A	2012/06/10	AB SOP-00005	SM 2320-B
Chloride by Automated Colourimetry	7	N/A	2012/06/11	AB SOP-00020	EPA 325.2
True Colour	7	N/A	2012/06/11	CAL SOP-00049	SM 2120 C
Carbon (DOC)	7	N/A	2012/06/11	CAL SOP-00077	MMCW 119
Conductivity @25C	7	N/A	2012/06/10	AB SOP-00005	SM 2510-B
Fluoride	7	N/A	2012/06/10	AB SOP-00005	SM 4500-F C
Sulphide (as H2S)	7	N/A	2012/06/11	CAL SOP-00062	SM 4500-S2 D
Hardness	7	N/A	2012/06/11	AB WI-00065	SM 2340B
Elements by ICP - Dissolved	5	N/A	2012/06/10	AB SOP-00042	EPA 200.7
Elements by ICP - Dissolved	2	N/A	2012/06/11	AB SOP-00042	EPA 200.7
Ion Balance	7	N/A	2012/06/11	AB WI-00065	SM 1030E
Nitrogen (total), Calc. TKN, NO3, NO2	7	N/A	2012/06/12	AB WI-00065	SM 4500-N A
Ammonia-N (Total)	7	N/A	2012/06/11	AB SOP-00007	EPA 350.1
Nitrate + Nitrite-N (calculated)	7	N/A	2012/06/11	AB SOP-00023	SM 4110-B
Nitrogen, (Nitrite, Nitrate) by IC	7	N/A	2012/06/10	AB SOP-00023	SM 4110-B
pH @25°C (Alkalinity titrator)	7	N/A	2012/06/10	AB SOP-00005	SM 4500-H+B
Orthophosphate by Konelab	7	N/A	2012/06/11	AB SOP-00025	SM 4500-P
Sulphide	7	N/A	2012/06/11	CAL SOP-00062	SM 4500-S2 D
Silica (Reactive)	7	N/A	2012/06/12	AB SOP-00011	EPA 370.1
Sulphate by Automated Colourimetry	7	N/A	2012/06/11	AB SOP-00018	EPA 375.4
Total Dissolved Solids (Filt. Residue)	7	2012/06/11	2012/06/11	CAL SOP-00074	SM 2540-C
Total Dissolved Solids (Calculated)	7	N/A	2012/06/11	AB WI-00065	SM 1030E
Total Kjeldahl Nitrogen	7	2012/06/11	2012/06/12	AB SOP-00008	EPA 351.1, 351.2
Phosphorous -P (Total, Dissolved)	7	2012/06/11	2012/06/11	AB SOP-00024	SM 4500-P
Total Phosphorous	7	2012/06/11	2012/06/11	AB SOP-00024	SM 4500-P
Total Suspended Solids (NFR)	7	2012/06/11	2012/06/11	CAL SOP-00075	SM 2540-D
Turbidity	7	N/A	2012/06/11	CAL SOP-00081	SM 2130B

../2

Your Project #: ABS095

Attention: RAY WALKER
ALBERTA ENVIRONMENT
CALGARY MONITORING TEAM
MONITORING TEAM
1st FLOOR, 2938 - 11 STREET NE
CALGARY, AB
CANADA T2E 7L7

Report Date: 2012/06/13

CERTIFICATE OF ANALYSIS

Encryption Key

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

Jesse Bourque, Project Manager
Email: JBourque@maxxam.ca
Phone# (403) 291-3077

==========

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. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - PartialRush Results

Sample Description	:	12SWC80611	Maxxam Sample Number	:	DQ1586
Sample Date & Time	:	2012/06/09 12:30	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	160	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.0040	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.96	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.067	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	190	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	330	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	5.2	mg/L		5909401	0.50	0.50
pH	8.11	N/A		5908497	N/A	N/A
Reactive Silica	5.5	mg/L		5913284	0.050	0.050
Total Dissolved Solids	190	mg/L		5908856	10	10
Total Suspended Solids	54	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	140	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	170	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.17	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	35	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.0042	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	1.5	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.060	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0040	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	<0.050	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.35	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.42	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.069	mg/L		5911387	0.0030	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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Success Through Science®

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80611	Maxxam Sample Number	:	DQ1586
Sample Date & Time	:	2012/06/09 12:50	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.067	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	13	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	110	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80611	Maxxam Sample Number	:	DQ1586
Sample Date & Time	:	2012/06/09 12:50	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	43	mg/L	ICPA	020111	5908429	0.30	0.30
Dissolved Iron (Fe)	0.094	mg/L	ICPA	102090	5908429	0.060	0.060
Dissolved Magnesium (Mg)	13	mg/L	ICPA	012111	5908429	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	5908429	0.0040	0.0040
Dissolved Potassium (K)	1.3	mg/L	ICPA	019111	5908429	0.30	0.30
Dissolved Sodium (Na)	4.0	mg/L	ICPA	011111	5908429	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - PartialRush Results

Sample Description : 12SWC80612
Sample Date & Time : 2012/06/09 12:50
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/10
Sample Station Code : AB05CB0390

Maxxam Sample Number : DQ1591
Maxxam Job Number : CB248517
Sample Access : GLENNIFER LAKE:EAST PROFIL
Sample Matrix : Water
Report Date : 2012/06/13

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	150	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.047	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.94	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.075	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	170	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	280	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	7.5	mg/L		5909401	0.50	0.50
pH	8.09	N/A		5908497	N/A	N/A
Reactive Silica	5.4	mg/L		5913284	0.050	0.050
Total Dissolved Solids	190	mg/L		5908856	10	10
Total Suspended Solids	180	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	140	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	170	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.17	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	28	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.044	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	1.3	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.12	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0080	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	<0.050	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.72	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.80	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.19	mg/L		5911387	0.0030	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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Attention: RAY WALKER
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P.O. #:
Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80612	Maxxam Sample Number	:	DQ1591
Sample Date & Time	:	2012/06/09 12:50	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.075	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	25	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	340	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Sample Description	:	12SWC80612	Maxxam Sample Number	:	DQ1591
Sample Date & Time	:	2012/06/09 12:50	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	40	mg/L	ICPA	020111	5904963	0.30	0.30
Dissolved Iron (Fe)	0.28	mg/L	ICPA	102090	5904963	0.060	0.060
Dissolved Magnesium (Mg)	11	mg/L	ICPA	012111	5904963	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	5904963	0.0040	0.0040
Dissolved Potassium (K)	1.2	mg/L	ICPA	019111	5904963	0.30	0.30
Dissolved Sodium (Na)	3.3	mg/L	ICPA	011111	5904963	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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Attention: RAY WALKER
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Maxxam Analytics - PartialRush Results

Sample Description : 12SWC80613
Sample Date & Time : 2012/06/09 13:1
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/10
Sample Station Code : AB05CB0390

Maxxam Sample Number : DQ1592
Maxxam Job Number : CB248517
Sample Access : GLENNIFER LAKE:EAST PROFIL
Sample Matrix : Water
Report Date : 2012/06/13

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	150	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.031	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.99	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.078	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	170	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	270	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	8.4	mg/L		5909401	0.50	0.50
pH	8.08	N/A		5908497	N/A	N/A
Reactive Silica	5.2	mg/L		5913284	0.050	0.050
Total Dissolved Solids	180	mg/L		5908856	10	10
Total Suspended Solids	320	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	130	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	160	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.16	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	25	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.029	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	1.3	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.19	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0090	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	0.053	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.49	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.57	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.28	mg/L		5911387	0.0030	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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Attention: RAY WALKER
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Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80613	Maxxam Sample Number	:	DQ1592
Sample Date & Time	:	2012/06/09 13:15	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.078	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	29	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	440	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Sample Description	:	12SWC80613	Maxxam Sample Number	:	DQ1592
Sample Date & Time	:	2012/06/09 13:15	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	GLENNIFER LAKE:EAST PROFIL
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CB0390			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	42	mg/L	ICPA	020111	5904963	0.30	0.30
Dissolved Iron (Fe)	0.24	mg/L	ICPA	102090	5904963	0.060	0.060
Dissolved Magnesium (Mg)	12	mg/L	ICPA	012111	5904963	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	5904963	0.0040	0.0040
Dissolved Potassium (K)	1.2	mg/L	ICPA	019111	5904963	0.30	0.30
Dissolved Sodium (Na)	3.4	mg/L	ICPA	011111	5904963	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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ALBERTA ENVIRONMENT
Attention: RAY WALKER
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Site Location:

Maxxam Analytics - PartialRush Results

Sample Description	:	12SWC80618	Maxxam Sample Number	:	DQ1593
Sample Date & Time	:	2012/06/09 13:00	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER AT SUNDRE
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CA0050			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	150	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.013	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.92	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.14	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	170	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	300	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	5.7	mg/L		5909401	0.50	0.50
pH	8.15	N/A		5908497	N/A	N/A
Reactive Silica	5.9	mg/L		5913284	0.050	0.050
Total Dissolved Solids	180	mg/L		5908856	10	10
Total Suspended Solids	370	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	130	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	160	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.15	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	30	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.013	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	3.4	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.046	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0040	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	<0.050	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.24	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.38	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.25	mg/L		5911387	0.0030	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80618	Maxxam Sample Number	:	DQ1593
Sample Date & Time	:	2012/06/09 13:00	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER AT SUNDRE
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CA0050			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.14	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	17	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	240	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

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Attention: RAY WALKER
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Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80618	Maxxam Sample Number	:	DQ1593
Sample Date & Time	:	2012/06/09 13:00	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER AT SUNDRE
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CA0050			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	39	mg/L	ICPA	020111	5908429	0.30	0.30
Dissolved Iron (Fe)	0.076	mg/L	ICPA	102090	5908429	0.060	0.060
Dissolved Magnesium (Mg)	12	mg/L	ICPA	012111	5908429	0.20	0.20
Dissolved Manganese (Mn)	0.0043	mg/L	ICPA	102089	5908429	0.0040	0.0040
Dissolved Potassium (K)	0.89	mg/L	ICPA	019111	5908429	0.30	0.30
Dissolved Sodium (Na)	3.4	mg/L	ICPA	011111	5908429	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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ALBERTA ENVIRONMENT
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Site Location:

Maxxam Analytics - PartialRush Results

Sample Description : 12SWC80619
Sample Date & Time : 2012/06/09 14:
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/10
Sample Station Code : AB05CA

Maxxam Sample Number : DQ1599
Maxxam Job Number : CB248517
Sample Access : RED DEER RIVER SITE 1-GARR
Sample Matrix : Water
Report Date : 2012/06/13

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	130	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.010	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.94	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.070	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	160	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	270	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	6.6	mg/L		5909401	0.50	0.50
pH	8.15	N/A		5908497	N/A	N/A
Reactive Silica	6.1	mg/L		5913284	0.050	0.050
Total Dissolved Solids	170	mg/L		5908856	10	10
Total Suspended Solids	480	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	120	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	150	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.16	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	27	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.0098	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	1.1	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.082	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0050	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	<0.050	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.70	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.77	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.61 (1)	mg/L		5911387	0.015	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

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Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80619	Maxxam Sample Number	:	DQ1599
Sample Date & Time	:	2012/06/09 14:10	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER SITE 1-GARR
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CA			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.070	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	22	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	390	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

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Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80619	Maxxam Sample Number	:	DQ1599
Sample Date & Time	:	2012/06/09 14:10	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER SITE 1-GARR
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CA			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	36	mg/L	ICPA	020111	5908429	0.30	0.30
Dissolved Iron (Fe)	0.15	mg/L	ICPA	102090	5908429	0.060	0.060
Dissolved Magnesium (Mg)	11	mg/L	ICPA	012111	5908429	0.20	0.20
Dissolved Manganese (Mn)	0.0062	mg/L	ICPA	102089	5908429	0.0040	0.0040
Dissolved Potassium (K)	0.90	mg/L	ICPA	019111	5908429	0.30	0.30
Dissolved Sodium (Na)	3.0	mg/L	ICPA	011111	5908429	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

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Site Location:

Maxxam Analytics - PartialRush Results

Sample Description	:	12SWC80620	Maxxam Sample Number	:	DQ1600
Sample Date & Time	:	2012/06/09 1[illegible]	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER SITE 2- HWY
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CC0170			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	150	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.0070	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.90	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.076	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	180	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	300	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	7.4	mg/L		5909401	0.50	0.50
pH	8.15	N/A		5908497	N/A	N/A
Reactive Silica	5.8	mg/L		5913284	0.050	0.050
Total Dissolved Solids	190	mg/L		5908856	10	10
Total Suspended Solids	250	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	140	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	170	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.17	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	28	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.0070	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	4.2	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.15	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0080	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	0.12	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.77	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.84	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.28	mg/L		5911387	0.0030	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80620	Maxxam Sample Number	:	DQ1600
Sample Date & Time	:	2012/06/09 15:00	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER SITE 2- HWY
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CC0170			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.076	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	25	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	330	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

Maxxam

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ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80620	Maxxam Sample Number	:	DQ1600
Sample Date & Time	:	2012/06/09 15:00	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER SITE 2- HWY
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CC0170			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	39	mg/L	ICPA	020111	5908429	0.30	0.30
Dissolved Iron (Fe)	0.23	mg/L	ICPA	102090	5908429	0.060	0.060
Dissolved Magnesium (Mg)	12	mg/L	ICPA	012111	5908429	0.20	0.20
Dissolved Manganese (Mn)	0.0044	mg/L	ICPA	102089	5908429	0.0040	0.0040
Dissolved Potassium (K)	1.6	mg/L	ICPA	019111	5908429	0.30	0.30
Dissolved Sodium (Na)	4.6	mg/L	ICPA	011111	5908429	0.50	0.50

RDL = Reportable Detection Limit
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ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - PartialRush Results

Sample Description	:	12SWC80622	Maxxam Sample Number	:	DQ1601
Sample Date & Time	:	2012/06/09 15:40	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER U/S HWY 2
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CC0010			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Calculated Parameters						
Hardness (CaCO3)	150	mg/L		5908286	0.50	0.50
Hydrogen Sulphide (H2S)	0.023	mg/L	-60.0 TO -60.0	5910337	0.0020	N/A
Ion Balance	0.91	N/A		5908287	0.010	0.010
Nitrate plus Nitrite (N)	0.090	mg/L		5908290	0.0030	0.0030
Total Dissolved Solids	190	mg/L		5908416	10	10
Misc. Inorganics						
Conductivity	310	uS/cm		5908495	1.0	1.0
Dissolved Organic Carbon (C)	6.8	mg/L		5909401	0.50	0.50
pH	8.16	N/A		5908497	N/A	N/A
Reactive Silica	5.9	mg/L		5913284	0.050	0.050
Total Dissolved Solids	200	mg/L		5908856	10	10
Total Suspended Solids	280	mg/L		5909332	1.0	1.0
Anions						
Alkalinity (PP as CaCO3)	<0.50	mg/L		5908492	0.50	0.50
Alkalinity (Total as CaCO3)	140	mg/L		5908492	0.50	0.50
Bicarbonate (HCO3)	170	mg/L		5908492	0.50	0.50
Carbonate (CO3)	<0.50	mg/L		5908492	0.50	0.50
Dissolved Fluoride (F)	0.17	mg/L		5908498	0.050	0.050
Dissolved Sulphate (SO4)	31	mg/L		5909710	1.0	1.0
Hydroxide (OH)	<0.50	mg/L		5908492	0.50	0.50
Sulphide	0.022	mg/L		5910899	0.0020	0.0020
Dissolved Chloride (Cl)	4.7	mg/L		5909707	1.0	1.0
Nutrients						
Dissolved Phosphate (P)	0.11	mg/L		5911615	0.0030	0.0030
Orthophosphate (P)	0.0080	mg/L		5909251	0.0030	0.0030
Total Ammonia (N)	0.056	mg/L		5909072	0.050	0.050
Total Kjeldahl Nitrogen	0.74	mg/L		5912113	0.050	0.050
Total Nitrogen (N)	0.83	mg/L		5908415	0.050	0.050
Total Phosphate (P)	0.29	mg/L		5911387	0.0030	0.0030

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Maxxam

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ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - PartialRush Results

Sample Description	:	12SWC80622	Maxxam Sample Number	:	DQ1601
Sample Date & Time	:	2012/06/09 15:40	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER U/S HWY 2
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CC0010			

PARAMETER DESCRIPTION	Results	Units	BOILING RANGE °C	QA/QC Batch	MDL	RDL
Nutrients						
Dissolved Nitrite (N)	<0.0030	mg/L		5908494	0.0030	0.0030
Dissolved Nitrate (N)	0.090	mg/L		5908494	0.0030	0.0030
Physical Properties						
True Colour	23	PtCo units		5910179	2.0	2.0
Physical Properties						
Turbidity	310	NTU		5908865	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

Maxxam

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ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Maxxam Analytics - Partial/Rush Results

Sample Description	:	12SWC80622	Maxxam Sample Number	:	DQ1601
Sample Date & Time	:	2012/06/09 15:40	Maxxam Job Number	:	CB248517
Sampled By	:		Sample Access	:	RED DEER RIVER U/S HWY 2
Sample Type	:	AEP Type 1	Sample Matrix	:	Water
Sample Received Date		2012/06/10	Report Date	:	2012/06/13
Sample Station Code	:	AB05CC0010			

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	40	mg/L	ICPA	020111	5908429	0.30	0.30
Dissolved Iron (Fe)	0.21	mg/L	ICPA	102090	5908429	0.060	0.060
Dissolved Magnesium (Mg)	12	mg/L	ICPA	012111	5908429	0.20	0.20
Dissolved Manganese (Mn)	0.0048	mg/L	ICPA	102089	5908429	0.0040	0.0040
Dissolved Potassium (K)	1.6	mg/L	ICPA	019111	5908429	0.30	0.30
Dissolved Sodium (Na)	4.9	mg/L	ICPA	011111	5908429	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Maxxam Job #: B248517
Report Date: 2012/06/13

ALBERTA ENVIRONMENT
Client Project #: ABS095

Package 1	4.8°C

Each temperature is the average of up to three cooler temperatures taken at receipt

Results relate only to the items tested.

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB248517

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5904963	PL	Matrix Spike	Dissolved Calcium (Ca)	2012/06/08		NC	%	80 - 120
			Dissolved Iron (Fe)	2012/06/08		103	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/08		101	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/08		102	%	80 - 120
			Dissolved Potassium (K)	2012/06/08		104	%	80 - 120
			Dissolved Sodium (Na)	2012/06/08		NC	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2012/06/08		109	%	80 - 120
			Dissolved Iron (Fe)	2012/06/08		104	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/08		103	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/08		104	%	80 - 120
			Dissolved Potassium (K)	2012/06/08		103	%	80 - 120
			Dissolved Sodium (Na)	2012/06/08		101	%	80 - 120
		Method Blank	Dissolved Calcium (Ca)	2012/06/08	<0.30		mg/L	
			Dissolved Iron (Fe)	2012/06/08	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2012/06/08	<0.20		mg/L	
			Dissolved Manganese (Mn)	2012/06/08	<0.0040		mg/L	
			Dissolved Potassium (K)	2012/06/08	<0.30		mg/L	
			Dissolved Sodium (Na)	2012/06/08	<0.50		mg/L	
		RPD	Dissolved Calcium (Ca)	2012/06/08	0.8		%	20
			Dissolved Iron (Fe)	2012/06/08	NC		%	20
			Dissolved Magnesium (Mg)	2012/06/08	0.3		%	20
			Dissolved Manganese (Mn)	2012/06/08	NC		%	20
			Dissolved Potassium (K)	2012/06/08	0.4		%	20
			Dissolved Sodium (Na)	2012/06/08	1.1		%	20
5908429	ST1	Matrix Spike [DQ1586-01]	Dissolved Calcium (Ca)	2012/06/10		96	%	80 - 120
			Dissolved Iron (Fe)	2012/06/10		97	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/10		98	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/10		97	%	80 - 120
			Dissolved Potassium (K)	2012/06/10		102	%	80 - 120
			Dissolved Sodium (Na)	2012/06/10		96	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2012/06/10		100	%	80 - 120
			Dissolved Iron (Fe)	2012/06/10		98	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/10		102	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/10		98	%	80 - 120
			Dissolved Potassium (K)	2012/06/10		105	%	80 - 120
			Dissolved Sodium (Na)	2012/06/10		98	%	80 - 120
		Method Blank	Dissolved Calcium (Ca)	2012/06/10	<0.30		mg/L	
			Dissolved Iron (Fe)	2012/06/10	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2012/06/10	<0.20		mg/L	
			Dissolved Manganese (Mn)	2012/06/10	<0.0040		mg/L	
			Dissolved Potassium (K)	2012/06/10	<0.30		mg/L	
			Dissolved Sodium (Na)	2012/06/10	<0.50		mg/L	
		RPD [DQ1586-01]	Dissolved Calcium (Ca)	2012/06/10	0.4		%	20
			Dissolved Iron (Fe)	2012/06/10	NC		%	20
			Dissolved Magnesium (Mg)	2012/06/10	0.05		%	20
			Dissolved Manganese (Mn)	2012/06/10	NC		%	20
			Dissolved Potassium (K)	2012/06/10	NC		%	20
			Dissolved Sodium (Na)	2012/06/10	0.6		%	20
5908492	BE3	Spiked Blank	Alkalinity (Total as CaCO3)	2012/06/10		98	%	80 - 120
		Method Blank	Alkalinity (PP as CaCO3)	2012/06/10	<0.50		mg/L	
			Alkalinity (Total as CaCO3)	2012/06/10	<0.50		mg/L	
			Bicarbonate (HCO3)	2012/06/10	<0.50		mg/L	
			Carbonate (CO3)	2012/06/10	<0.50		mg/L	
			Hydroxide (OH)	2012/06/10	<0.50		mg/L	
		RPD [DQ1586-01]	Alkalinity (PP as CaCO3)	2012/06/10	NC		%	20

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB248517

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5908492	BE3	RPD [DQ1586-01]	Alkalinity (Total as CaCO3)	2012/06/10	3.3		%	20
			Bicarbonate (HCO3)	2012/06/10	3.3		%	20
			Carbonate (CO3)	2012/06/10	NC		%	20
			Hydroxide (OH)	2012/06/10	NC		%	20
5908494	RP0	Matrix Spike	Dissolved Nitrite (N)	2012/06/10		96	%	80 - 120
			Dissolved Nitrate (N)	2012/06/10		99	%	80 - 120
		Spiked Blank	Dissolved Nitrite (N)	2012/06/10		106	%	90 - 110
			Dissolved Nitrate (N)	2012/06/10		107	%	90 - 110
		Method Blank	Dissolved Nitrite (N)	2012/06/10	<0.0030		mg/L	
			Dissolved Nitrate (N)	2012/06/10	0.0050, RDL=0.0030		mg/L	
		RPD	Dissolved Nitrite (N)	2012/06/10	NC		%	20
			Dissolved Nitrate (N)	2012/06/10	NC		%	20
5908495	BE3	Spiked Blank	Conductivity	2012/06/10		100	%	90 - 110
		Method Blank	Conductivity	2012/06/10	<1.0		uS/cm	
		RPD [DQ1586-01]	Conductivity	2012/06/10	0.3		%	20
5908497	BE3	Spiked Blank	pH	2012/06/10		100	%	97 - 102
		RPD [DQ1586-01]	pH	2012/06/10	0.9		%	5
5908498	BE3	Matrix Spike [DQ1586-01]	Dissolved Fluoride (F)	2012/06/10		98	%	80 - 120
		Spiked Blank	Dissolved Fluoride (F)	2012/06/10		101	%	80 - 120
		Method Blank	Dissolved Fluoride (F)	2012/06/10	<0.050		mg/L	
		RPD [DQ1586-01]	Dissolved Fluoride (F)	2012/06/10	NC		%	20
5908856	HE1	Spiked Blank	Total Dissolved Solids	2012/06/11		90	%	80 - 113
		Method Blank	Total Dissolved Solids	2012/06/11	<10		mg/L	
		RPD	Total Dissolved Solids	2012/06/11	3.0		%	20
5908865	HE1	Spiked Blank	Turbidity	2012/06/11		98	%	93 - 99
		Method Blank	Turbidity	2012/06/11	<0.10		NTU	
		RPD	Turbidity	2012/06/11	7.0		%	20
5909072	SK9	Matrix Spike	Total Ammonia (N)	2012/06/11		NC	%	80 - 120
		Spiked Blank	Total Ammonia (N)	2012/06/11		110	%	80 - 120
		Method Blank	Total Ammonia (N)	2012/06/11	<0.050		mg/L	
		RPD	Total Ammonia (N)	2012/06/11	0.8		%	20
5909251	SK9	Matrix Spike	Orthophosphate (P)	2012/06/11		90	%	80 - 120
		Spiked Blank	Orthophosphate (P)	2012/06/11		97	%	80 - 120
		Method Blank	Orthophosphate (P)	2012/06/11	<0.0030		mg/L	
		RPD	Orthophosphate (P)	2012/06/11	NC		%	20
5909332	HE1	Spiked Blank	Total Suspended Solids	2012/06/11		92	%	81 - 105
		Method Blank	Total Suspended Solids	2012/06/11	<1.0		mg/L	
		RPD	Total Suspended Solids	2012/06/11	0		%	20
5909401	AP1	Matrix Spike	Dissolved Organic Carbon (C)	2012/06/11		106	%	80 - 120
		Spiked Blank	Dissolved Organic Carbon (C)	2012/06/11		99	%	84 - 120
		Method Blank	Dissolved Organic Carbon (C)	2012/06/11	<0.50		mg/L	
		RPD	Dissolved Organic Carbon (C)	2012/06/11	9.0		%	20
5909707	ZI	Matrix Spike	Dissolved Chloride (Cl)	2012/06/11		NC	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2012/06/11		107	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2012/06/11	<1.0		mg/L	
		RPD	Dissolved Chloride (Cl)	2012/06/11	3.5		%	20
5909710	ZI	Matrix Spike	Dissolved Sulphate (SO4)	2012/06/11		111	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2012/06/11		103	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2012/06/11	<1.0		mg/L	
		RPD	Dissolved Sulphate (SO4)	2012/06/11	NC		%	20
5910179	ZI	Spiked Blank	True Colour	2012/06/11		99	%	90 - 110
		Method Blank	True Colour	2012/06/11	<2.0		PtCo units	
		RPD	True Colour	2012/06/11	NC		%	20
5910899	LS0	Spiked Blank	Sulphide	2012/06/11		94	%	80 - 120
		Method Blank	Sulphide	2012/06/11	<0.0020		mg/L	

ALBERTA ENVIRONMENT
Attention: RAY WALKER
Client Project #: ABS095
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB248517

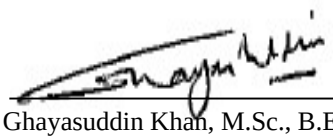
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5910899	LS0	RPD	Sulphide	2012/06/11	NC		%	20
5911387	SK9	Matrix Spike	Total Phosphate (P)	2012/06/11		103	%	80 - 120
		QC Standard	Total Phosphate (P)	2012/06/11		95	%	80 - 120
		Spiked Blank	Total Phosphate (P)	2012/06/11		102	%	83 - 111
		Method Blank	Total Phosphate (P)	2012/06/11	<0.0030		mg/L	
		RPD	Total Phosphate (P)	2012/06/11	NC		%	20
5911615	SK9	Matrix Spike						
		[DQ1586-01]	Dissolved Phosphate (P)	2012/06/11		98	%	80 - 120
		QC Standard	Dissolved Phosphate (P)	2012/06/11		95	%	80 - 120
		Spiked Blank	Dissolved Phosphate (P)	2012/06/11		100	%	83 - 111
		Method Blank	Dissolved Phosphate (P)	2012/06/11	<0.0030		mg/L	
		RPD [DQ1586-01]	Dissolved Phosphate (P)	2012/06/11	0		%	20
5912113	IA0	Matrix Spike						
		[DQ1592-01]	Total Kjeldahl Nitrogen	2012/06/12		105	%	80 - 120
		QC Standard	Total Kjeldahl Nitrogen	2012/06/12		93	%	75 - 125
		Spiked Blank	Total Kjeldahl Nitrogen	2012/06/12		115	%	80 - 120
		Method Blank	Total Kjeldahl Nitrogen	2012/06/12	<0.050		mg/L	
		RPD [DQ1592-01]	Total Kjeldahl Nitrogen	2012/06/12	2.9		%	20
5913284	ZI	Matrix Spike						
		[DQ1586-01]	Reactive Silica	2012/06/12		NC	%	80 - 120
		Spiked Blank	Reactive Silica	2012/06/12		105	%	80 - 120
		Method Blank	Reactive Silica	2012/06/12	<0.050		mg/L	
		RPD [DQ1586-01]	Reactive Silica	2012/06/12	0.3		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

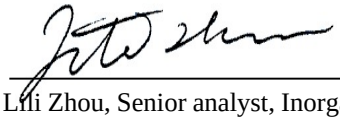
Validation Signature Page

Maxxam Job #: B248517

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Ghayasuddin Khan, M.Sc., B.Ed., P.Chem, Scientific Specialist



Lili Zhou, Senior analyst, Inorganic department.

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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. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

Calgary: 2021-41st Ave. NE, T2E 6P2. Ph: (403) 291-3077, Fax: (403) 291-9468, Toll free: (800) 386-7247
Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80611 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1A

DD-MON-YYYY

Sample Date: 09 - JUN-2012 Time: 1251 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

ori Beerwart - Edmonton (780) 468-3537

esse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	1

ANDREW BRAJIC
20121061(0, 10:30
3.3, 3.7, 7.4

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

B248517

Maxxam Analytics Inc

Alberta Environment
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Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80612 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1B
DD-MON-YYYY
Sample Date: 09 - JUN-2012 Time: 1250 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

ori Beerwart - Edmonton (780) 468-3537

esse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	2

ANDREJ BRATIC

2012/06/10 10:30

3, 3, 3, 7, 7.4

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

B248577

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

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Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80613 Group Sample No:
Station No: AB05CB0390 Project No. ABS095
Site Descrip: GLENNIFER LAKE: EAST PROFILE 1C

DD-MON-YYYY

Sample Date: 09 - JUN-2012 Time: 1315 MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Josse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	3

ANDREJ BRAJIC
2012/06/10, 10:30
3.3, 3.7, 7.4

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

B248517

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

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Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80618 Group Sample No:
Station No: AB05CA0050 Project No. ABS095
Site Descrip: RED DEER RIVER AT SUNDRE

DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1300 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Jesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	8

AND PTO BRADIC
2012/06/10, 10:30
3.3, 3.7, 7.4,

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

B248517

Maxxam Analytics Inc

Alberta Environment
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Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80619 Group Sample No:
Station No: AB05CA Project No. ABS095
Site Descrip: RED DEER RIVER SITE 1 - Garrington Bridge
DD-MON-YYYY
Sample Date: 09 -JUN-2012 Time: ~~1300~~ MST 1410
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

.ori Beerwart - Edmonton (780) 468-3537

lesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	9

ANDREJ BRATOIC
2012/06/09, 10:30
3, 3, 3, 7, 7.4

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

B248577

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Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80620 Group Sample No:
Station No: AB05CC0170 Project No. ABS095
Site Descrip: RED DEER RIVER SITE 2 - Hwy 54
DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1500 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: Time: MST
Sample Depth: M.

Customer Service Representatives

ori Beerwart - Edmonton (780) 468-3537

esse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	10

ANDREJ BOLTJIC
2012/06/10, 10:30
3.3, 3.7, 7.4.

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

#248517

Maxxam Analytics Inc

Alberta Environment
Chain of Custody / Analytical Request Form

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Edmonton: 9331 - 48th Street, T6B 2R4. Ph: (780) 468-3500, Fax: (780) 466-3332, Toll free: (800) 386-7247

Results to	RAY WALKER	**Maxxam Lab #**	
Company	AENV, MONITORING, REPORTING, AND INN	**Maxxam Quote**	A40293 GROUP SR
Address	Main Floor, 2938 11 St. NE	**Received By**	
City	CALGARY, AB	**Date Received**	
Postal Code	T2E 7L7	**Bottle Types**	
Phone	297-5922	**G2F IS UNFILTERED AND UNPRESERVED.**	
Fax	297-5669	**REGULAR TSS, PLUS SULPHIDES**	

SAMPLE INFORMATION

Sample No: 12SWC80622 Group Sample No:
Station No: AB05CC0010 Project No. ABS095
Site Descrip: RED DEER RIVER U/S HWY 2

DD-MON-YYYY
Sample Date: 09-JUN-2012 Time: 1540 MST
Samplers ID1: 282178 ID2: 146409
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

Customer Service Representatives

Lori Beerwart - Edmonton (780) 468-3537

Jesse Bourque, - Calgary (403) 735-2205

BOTTLE SET #:	12

ANDREJ BRATIC
2012/06/10, 10:30
5, 3, 3.7, 7.4.

PRESERVATIVE TABLE

BOTTLE NAME	BOTTLE CODE	BOTTLE TYPE	PRESERVATIVE COLOR CODE	PRESERVATIVE
Metals	M	250 mL Plastic	Red w/ X	1.25mL 50% HNO_3
MS Metals	MS	250 mL Plastic	Red w/ dot	1.25mL 50% HNO_3
Nutrients	G2	250 mL Plastic	Yellow w/ X	5mL 12.5% H_2SO_4
Oil & Grease	OG	500 mL Glass	Yellow	10mL 12.5 H_2SO_4
Mercury	Hg	125 mL Nalgene	Purple	2mL K_2CrO_7-HNO_3
Phenol	P	125 mL Glass	Blue	2mL 12.5% H_2SO_4
Sulphide	S	250 mL Plastic	Green	2mL ZnAc
Cyanide	CN	250 mL Plastic	Orange	2mL 6N NaOH
AOX	AOX	1L Amber Glass	Red	4mL 50% HNO_3
Routine / Nutrients	R/NC	500 mL Plastic	NA	4 Deg C
General	G1	500 mL Plastic	NA	4 Deg C

B248517

ALBERTA ENVIRONMENT
ATTN: Wendell Koning
2938 11 ST NE
CALGARY AB T2E 7L7

Date Received: 15-JUN-12
Report Date: 17-JUN-12 15:28 (MT)
Version: FINAL

Client Phone: 403-297-8267

Certificate of Analysis

Lab Work Order #: L1163394

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 10-189839
Legal Site Desc:

Monica Gibson
Account Manager

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163394
Project Reference:
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code:
Sampled By:

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163394-1	**ESRD STETTLER WTP**								
Group Number:									
Envirodat:									
Location:									
Station Type:									
Sampled at:									
Sample Matrix:									
Collection Type:									
Sample Type:									
Date Collected:	14-JUN-12 11:00:00								
Total Metals (ABT1)									
Total Metals in Water by ICPOES									
		Calcium (Ca)-Total	52.4		0.10	mg/L	NA	17-JUN-12	JBH
		Iron (Fe)-Total	5.36		0.030	mg/L	NA	17-JUN-12	JBH
		Magnesium (Mg)-Total	15.3		0.10	mg/L	NA	17-JUN-12	JBH
		Manganese (Mn)-Total	0.200		0.0050	mg/L	NA	17-JUN-12	JBH
		Potassium (K)-Total	4.02		0.50	mg/L	NA	17-JUN-12	JBH
		Sodium (Na)-Total	9.9		1.0	mg/L	NA	17-JUN-12	JBH
Total Metals in Water by ICPMS									
		Aluminum (Al)-Total	3.98	DLA	0.050	mg/L	NA	17-JUN-12	JBH
		Antimony (Sb)-Total	<0.0010	DLA	0.0010	mg/L	NA	17-JUN-12	JBH
		Arsenic (As)-Total	0.0024	DLA	0.0010	mg/L	NA	17-JUN-12	JBH
		Barium (Ba)-Total	0.169	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Boron (B)-Total	<0.25	DLA	0.25	mg/L	NA	17-JUN-12	JBH
		Cadmium (Cd)-Total	<0.0010	DLA	0.0010	mg/L	NA	17-JUN-12	JBH
		Chromium (Cr)-Total	0.0052	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Copper (Cu)-Total	0.0082	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Lead (Pb)-Total	<0.0050	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Nickel (Ni)-Total	0.0066	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Selenium (Se)-Total	<0.0050	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Silver (Ag)-Total	<0.00050	DLA	0.00050	mg/L	NA	17-JUN-12	JBH
		Uranium (U)-Total	0.00102	DLA	0.000050	mg/L	NA	17-JUN-12	JBH
		Zinc (Zn)-Total	0.028	DLA	0.025	mg/L	NA	17-JUN-12	JBH
Total Mercury in Water by CVAFS									
		Mercury (Hg)-Total	<0.000050		0.000050	mg/L	NA	16-JUN-12	SHT
Routine Water Analysis									
		Nitrate and Nitrite (as N)	0.170		0.071	mg/L	NA	16-JUN-12	
pH, Conductivity and Total Alkalinity									
		pH	7.82		0.10	pH	10301	16-JUN-12	SHT
		Conductivity (EC)	302		3.0	uS/cm	2041	16-JUN-12	SHT
		Bicarbonate (HCO3)	146		5.0	mg/L	6201	16-JUN-12	SHT
		Carbonate (CO3)	<5.0		5.0	mg/L	6301	16-JUN-12	SHT
		Hydroxide (OH)	<5.0		5.0	mg/L	08501	16-JUN-12	SHT
		Alkalinity, Total (as CaCO3)	120		5.0	mg/L	10165	16-JUN-12	SHT
Sulfate (SO4)									
		Sulfate (SO4)	25.8		0.50	mg/L	450	16-JUN-12	MAT
Nitrite-N									
		Nitrite (as N)	<0.050		0.050	mg/L	7207	16-JUN-12	MAT
Nitrate-N									
		Nitrate (as N)	0.170		0.050	mg/L	102961	16-JUN-12	MAT
Ion Balance Calculation									
		Ion Balance	110			%	118	17-JUN-12	

Rev# 1.00

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163394
Project Reference:
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code:
Sampled By:

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163394-1	**ESRD STETTLER WTP**								
Group Number:									
Envirodat:									
Location:									
Station Type:									
Sampled at:									
Sample Matrix:									
Collection Type:									
Sample Type:									
Date Collected:	14-JUN-12 11:00:00								
Routine Water Analysis									
Ion Balance Calculation									
		TDS (Calculated)	164			mg/L	0203	17-JUN-12	
		Hardness (as CaCO3)	143			mg/L	10602	17-JUN-12	
Dissolved Metals by ICPOES									
		Calcium (Ca)-Dissolved	38.71		0.050	mg/L	NA	16-JUN-12	JBH
		Magnesium (Mg)-Dissolved	11.3		0.10	mg/L	NA	16-JUN-12	JBH
		Potassium (K)-Dissolved	2.1		0.50	mg/L	NA	16-JUN-12	JBH
		Sodium (Na)-Dissolved	9.75		1.0	mg/L	NA	16-JUN-12	JBH
Chloride (Cl)									
		Chloride (Cl)	3.16		0.10	mg/L	17203	16-JUN-12	MAT
Misc									
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV

Rev# 1.00

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163394
Project Reference:
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code:
Sampled By:

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163394-2	**ESRD STETTLER WPT**								
Group Number:									
Envirodat:									
Location:									
Station Type:									
Sampled at:									
Sample Matrix:									
Collection Type:									
Sample Type:									
Date Collected:	14-JUN-12 11:10:00								
Total Metals (ABT1)									
Total Metals in Water by ICPOES									
		Calcium (Ca)-Total	48.7		0.10	mg/L	NA	17-JUN-12	JBH
		Iron (Fe)-Total	<0.030		0.030	mg/L	NA	17-JUN-12	JBH
		Magnesium (Mg)-Total	12.8		0.10	mg/L	NA	17-JUN-12	JBH
		Manganese (Mn)-Total	0.0298		0.0050	mg/L	NA	17-JUN-12	JBH
		Potassium (K)-Total	2.24		0.50	mg/L	NA	17-JUN-12	JBH
		Sodium (Na)-Total	30.5		1.0	mg/L	NA	17-JUN-12	JBH
Total Metals in Water by ICPMS									
		Aluminum (Al)-Total	<0.050	DLA	0.050	mg/L	NA	17-JUN-12	JBH
		Antimony (Sb)-Total	<0.0010	DLA	0.0010	mg/L	NA	17-JUN-12	JBH
		Arsenic (As)-Total	<0.0010	DLA	0.0010	mg/L	NA	17-JUN-12	JBH
		Barium (Ba)-Total	0.119	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Boron (B)-Total	<0.25	DLA	0.25	mg/L	NA	17-JUN-12	JBH
		Cadmium (Cd)-Total	<0.0010	DLA	0.0010	mg/L	NA	17-JUN-12	JBH
		Chromium (Cr)-Total	<0.0050	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Copper (Cu)-Total	<0.0050	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Lead (Pb)-Total	<0.0050	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Nickel (Ni)-Total	0.0051	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Selenium (Se)-Total	<0.0050	DLA	0.0050	mg/L	NA	17-JUN-12	JBH
		Silver (Ag)-Total	<0.00050	DLA	0.00050	mg/L	NA	17-JUN-12	JBH
		Uranium (U)-Total	<0.000050	DLA	0.000050	mg/L	NA	17-JUN-12	JBH
		Zinc (Zn)-Total	<0.025	DLA	0.025	mg/L	NA	17-JUN-12	JBH
Total Mercury in Water by CVAFS									
		Mercury (Hg)-Total	<0.000050		0.000050	mg/L	NA	16-JUN-12	SHT
Routine Water Analysis									
		Nitrate and Nitrite (as N)	0.130		0.071	mg/L	NA	16-JUN-12	
pH, Conductivity and Total Alkalinity									
		pH	8.15		0.10	pH	10301	16-JUN-12	SHT
		Conductivity (EC)	305		3.0	uS/cm	2041	16-JUN-12	SHT
		Bicarbonate (HCO3)	182		5.0	mg/L	6201	16-JUN-12	SHT
		Carbonate (CO3)	<5.0		5.0	mg/L	6301	16-JUN-12	SHT
		Hydroxide (OH)	<5.0		5.0	mg/L	08501	16-JUN-12	SHT
		Alkalinity, Total (as CaCO3)	149		5.0	mg/L	10165	16-JUN-12	SHT
Sulfate (SO4)									
		Sulfate (SO4)	108		0.50	mg/L	450	16-JUN-12	MAT
Nitrite-N									
		Nitrite (as N)	<0.050		0.050	mg/L	7207	16-JUN-12	MAT
Nitrate-N									
		Nitrate (as N)	0.130		0.050	mg/L	102961	16-JUN-12	MAT
Ion Balance Calculation									
		Ion Balance	94.6			%	118	17-JUN-12	

Rev# 1.00

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163394
Project Reference:
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code:
Sampled By:

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163394-2	**ESRD STETTLER WPT**								
Group Number:									
Envirodat:									
Location:									
Station Type:									
Sampled at:									
Sample Matrix:									
Collection Type:									
Sample Type:									
Date Collected:	14-JUN-12 11:10:00								
Routine Water Analysis									
Ion Balance Calculation									
		TDS (Calculated)	303			mg/L	0203	17-JUN-12	
		Hardness (as CaCO3)	185			mg/L	10602	17-JUN-12	
Dissolved Metals by ICPOES									
		Calcium (Ca)-Dissolved	52.1		0.050	mg/L	NA	16-JUN-12	JBH
		Magnesium (Mg)-Dissolved	13.3		0.10	mg/L	NA	16-JUN-12	JBH
		Potassium (K)-Dissolved	2.47		0.50	mg/L	NA	16-JUN-12	JBH
		Sodium (Na)-Dissolved	31.4		1.0	mg/L	NA	16-JUN-12	JBH
Chloride (Cl)									
		Chloride (Cl)	6.22		0.10	mg/L	17203	16-JUN-12	MAT
Misc									
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	0.00052		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV

Reference Information

ALS Test Code	Test Description	Methodology Reference (In-House Standard Operating Procedures which Generally Follow:)
BTX,F1-CL	BTEX and F1 (C6-C10)	EPA 8260/8015 (PT)
CL-CL	Chloride (Cl)	APHA 4110 B

Inorganic Anions by ion chromatography (IC) in water and aqueaous extracts of soils.

HG-TOT-CVAFS-CL	Total Mercury in Water by CVAFS	HG-TOT-CVAFS

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

IONBALANCE-CL	Ion Balance Calculation	Method unavailable at time of printing
MET-DIS-ICP-CL	Dissolved Metals by ICPOES	MET-DIS-ICP

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-ICP-CL	Total Metals in Water by ICPOES	MET-TOT-ICP

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion using a hotblock (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-MS-CL	Total Metals in Water by ICPMS	MET-TOT-MS

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

N2N3-CALC-CL	Nitrate+Nitrite	Method unavailable at time of printing
NO2-CL	Nitrite-N	APHA 4110 B
NO3-IC-CL	Nitrate-N	APHA 4110 B
PH/EC/ALK-CL	pH, Conductivity and Total Alkalinity	APHA 4500H,2510,2320

All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)
pH measurement is determined from the activity of the hydrogen ions using a hydrogen electrode and a reference electrode.
Alkalinity measurement is based on the sample's capacity to neutralize acid
Conductivity measurement is based on the sample's capacity to convey an electric current

SO4-CL	Sulfate (SO4)	APHA 4110 B

Sample Parameter Qualifier key listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution

10-189839

L116 3394

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

Page 1 of 1

Environmental

Alberta Environment
Wendell Koning

Fax:

Same as Report ? (circle) Yes or No (If No, provide details)

Copy of Invoice with Report? (circle) Yes or No

Fax:

Report Format / Distribution
Standard: Other (specify):
Select: PDF Excel Digital Fax
Email 1: chris.teichreb@gov.ab.ca
Email 2:

Client / Project Information
Job #:
PO / AFE:
LSD:
Quote #:

Order # (lab use only)

ALS Contact:

Sampler:

Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
- Regular (Standard Turnaround Times - Business Days)
- Priority (2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
- X Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
- Same Day or Weekend Emergency - Contact ALS to confirm TAT

Analysis Request
(Indicate Filtered or Preserved, F/P)

#	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals (DW)	Routine	BTX/F1	Number of Containers
	ESRD Stettler WTP	14-Jun-12	11:00	water	X	X	X	3
	ESRD Stettler WPT	14 Jun-12	11:10	water	X	X	X	3

Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
	15 Jun 12	1800	RW	15Jun12	17:55	12 °C				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

GENF 18.01 Front

ALBERTA ENVIRONMENT
ATTN: WENDELL KONING
2938 11 STREET NE
CALGARY AB T2E 7L7

Date Received: 15-JUN-12
Report Date: 17-JUN-12 14:55 (MT)
Version: FINAL

Client Phone: 403-297-8267

Certificate of Analysis

Lab Work Order #: L1163380

Project P.O. #: NOT SUBMITTED
Job Reference: ABS095
C of C Numbers:
Legal Site Desc:

Monica Gibson
Account Manager

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-1	**12SWC80631**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1A								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1A								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 10:30:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	0.00055		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	0.00113		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	0.00157		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0018		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	0.000176		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-2	**12SWC80632**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1B								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1B								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 10:40:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	0.00053		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	0.00051		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	0.00131		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	0.00182		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0022		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	0.000215		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	0.000053		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-3	**12SWC80635**								
Group Number:									
Envirodat:	AB05CB0410								
Location:	GLENNIFER LAKE: WEST PROFILE 1B								
Station Type:									
Sampled at:	GLENNIFER LAKE: WEST PROFILE 1B								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 12:35:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0021		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-4	**12SWC80636**								
Group Number:									
Envirodat:	AB05CB0410								
Location:	GLENNIFER LAKE: WEST PROFILE 1C								
Station Type:									
Sampled at:	GLENNIFER LAKE: WEST PROFILE 1C								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 12:45:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0016		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-5	**12SWC80633**								
Group Number:									
Envirodat:	AB05CB0390								
Location:	GLENNIFER LAKE: EAST PROFILE 1C								
Station Type:									
Sampled at:	GLENNIFER LAKE: EAST PROFILE 1C								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 13:05:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	0.00050		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	0.00089		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	0.00126		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0025		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	0.000169		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	0.000057		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-6	**12SWC80634**								
Group Number:									
Envirodat:	AB05CB0410								
Location:	GLENNIFER LAKE: WEST PROFILE 1A								
Station Type:									
Sampled at:	GLENNIFER LAKE: WEST PROFILE 1A								
Sample Matrix:	Water (00)								
Collection Type:									
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 12:25:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0020		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-7	**12SWC80641**								
Group Number:									
Envirodat:	AB05CA0050								
Location:	RED DEER RIVER AT SUNDRE								
Station Type:									
Sampled at:	RED DEER RIVER AT SUNDRE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 08:50:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0014		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-8	**12SWC80642**								
Group Number:									
Envirodat:	AB05CA0445								
Location:	RED DEER RIVER AT GARRINGTON BRIDGE								
Station Type:									
Sampled at:	RED DEER RIVER AT GARRINGTON BRIDGE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 09:50:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0011		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-9	**12SWC80643**								
Group Number:									
Envirodat:	AB05CC0170								
Location:	RED DEER RIVER AT INNISFAIL HWY 54 BRIDGE								
Station Type:									
Sampled at:	RED DEER RIVER AT INNISFAIL HWY 54 BRIDGE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 11:00:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	0.00073		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	0.00103		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0028		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	0.000136		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-10	**12SWC80644**								
Group Number:									
Envirodat:	AB05CC0010								
Location:	RED DEER RIVER U/S HWY 2 ABOVE RED DEER								
Station Type:									
Sampled at:	RED DEER RIVER U/S HWY 2 ABOVE RED DEER								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 11:55:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	0.00052		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	0.00075		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0022		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	0.000130		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-11	**12SWC80645**								
Group Number:									
Envirodat:	AB05CD0250								
Location:	RED DEER RIVER AT NEVIS BRIDGE								
Station Type:									
Sampled at:	RED DEER RIVER AT NEVIS BRIDGE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 11:20:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0021		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	0.000061		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-12	**12SWC80646**								
Group Number:									
Envirodat:	AB05CE0009								
Location:	RED DEER RIVER AT MORRIN BRIDGE								
Station Type:									
Sampled at:	RED DEER RIVER AT MORRIN BRIDGE								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 09:45:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	17-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	17-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	17-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	17-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	17-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		17-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		17-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0017		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

ALS ENVIRONMENTAL CHEMICAL ANALYSIS REPORT

DATE: 17-JUN-12

Lab Workorder Number: L1163380
Project Reference: ABS095
Project P.O. #.:

Date Received: 15-JUN-12
Agency Code: 211
Sampled By: 00065139

LAB ID	SAMPLE ID	TEST DESCRIPTIOI	RESULT	QUAL	D.L.	UNITS	ENVIRODAT	ANALYZED	BY
L1163380-13	**12SWC80647**								
Group Number:									
Envirodat:	AB05CJ0070								
Location:	RED DEER RIVER AT HWY 884 NEAR JENNER								
Station Type:									
Sampled at:	RED DEER RIVER AT HWY 884 NEAR JENNER								
Sample Matrix:	Water (00)								
Collection Type:	Hand Collection (16)								
Sample Type:	Discrete Sample (Grab) (01)								
Date Collected:	15-JUN-12 00:00:00								
BTX, F1, F2, F3, F4									
F2, F3, F4									
		F2 (>C10-C16)	<0.25		0.25	mg/L	107876	16-JUN-12	MAQ
		F3 (C16-C34)	<0.25		0.25	mg/L	107878	16-JUN-12	MAQ
		F4 (C34-C50)	<0.25		0.25	mg/L	107880	16-JUN-12	MAQ
BTEX and F1 (C6-C10)									
		Benzene	<0.00050		0.00050	mg/L	101278	16-JUN-12	JDV
		Toluene	<0.00050		0.00050	mg/L	101279	16-JUN-12	JDV
		Ethylbenzene	<0.00050		0.00050	mg/L	101280	16-JUN-12	JDV
		o-xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		m+p-Xylene	<0.00050		0.00050	mg/L	NA	16-JUN-12	JDV
		Xylenes	<0.00050		0.00050	mg/L	101281	16-JUN-12	JDV
		F1(C6-C10)	<0.10		0.10	mg/L		16-JUN-12	JDV
		F1-BTEX	<0.10		0.10	mg/L		16-JUN-12	JDV
Misc									
		Oil and Grease	<1.0		1.0	mg/L	6521	17-JUN-12	PW
		Phenols (4AAP)	0.0013		0.0010	mg/L	6537	17-JUN-12	JHN
PAH & Carcinogenic PAH List									
		Acenaphthene	<0.000050		0.000050	mg/L	103762	15-JUN-12	MAQ
		Acenaphthylene	<0.000050		0.000050	mg/L	103763	15-JUN-12	MAQ
		Anthracene	<0.000010		0.000010	mg/L	103764	15-JUN-12	MAQ
		Fluoranthene	<0.000020		0.000020	mg/L	103772	15-JUN-12	MAQ
		Fluorene	<0.000050		0.000050	mg/L	103723	15-JUN-12	MAQ
		Naphthalene	<0.000050		0.000050	mg/L	103776	15-JUN-12	MAQ
		Phenanthrene	<0.000050		0.000050	mg/L	103777	15-JUN-12	MAQ
		Pyrene	<0.000020		0.000020	mg/L	103776	15-JUN-12	MAQ
		Benzo(a)anthracene	<0.000010		0.000010	mg/L	103814	15-JUN-12	MAQ
		Benzo(k)fluoranthene	<0.000050		0.000050	mg/L	103769	15-JUN-12	MAQ
		Benzo(b&j)fluoranthene	<0.000050		0.000050	mg/L	NA	15-JUN-12	MAQ
		Benzo(g,h,i)perylene	<0.000050		0.000050	mg/L	103768	15-JUN-12	MAQ
		Benzo(a)pyrene	<0.000010		0.000010	mg/L	103766	15-JUN-12	MAQ
		Chrysene	<0.000050		0.000050	mg/L	103770	15-JUN-12	MAQ
		Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	103771	15-JUN-12	MAQ
		Indeno(1,2,3-cd)pyrene	<0.000050		0.000050	mg/L	103774	15-JUN-12	MAQ
		B(A)P Total Potency Equivalent	<0.000039		0.000039	mg/L	NA	15-JUN-12	MAQ

Reference Information

ALS Test Code	Test Description	Methodology Reference (In-House Standard Operating Procedures which Generally Follow:)
BTX,F1-CL	BTEX and F1 (C6-C10)	EPA 8260/8015 (PT)
F2,F3,F4-CL	F2, F3, F4	EPA 8015
OGG-CL	Oil and Grease-Gravimetric	APHA 5520 G
PAH-ABT1-CL	PAH & Carcinogenic PAH List	EPA 8270 (SIM)
PHENOLS-4AAP-ED	Phenols (4AAP)	AB ENV.06537

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878
www.alsglobal.com

L1163380

COC # _____

Page 1 of 1

Report to:			
Company:	Alberta Environment		
Contact:	Wendell Koning		
Address:	2938 11 Street NE		
	Calgary, AB T2E 7L7		
Phone:	403 297-8267	Fax:	403 297-6069

Invoice To:	Same as Report ? (●) Yes ( ) No		
Company:			
Contact:			
Address:			
Phone:		Fax:	

Report Format / Distribution
☐ Standard ☐ Other
☑ PDF ☑ Excel ☐ Digital
Email 1: Chris.Teichreb@gov.ab.ca
Email 2: Ray.Walker@gov.ab.ca

Client / Project Information:
Job #:
PO / AFE:
Legal Site Description:
Quote #:

ALS Contact: **Sampler:** Ray Walker

Service Requested: (rush - subject to availability)
( ) Regular (Default)
( ) Priority (2-3 Business Days) - 50% Surcharge
(●) Emergency (1 Business Day) - 100% Surcharge
( ) For Emergency < 1 Day, ASAP or Weekend - Contact ALS

Analysis Request
Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample Identification	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
Sample No:12SWC80631 Group Sample No: Station No: AB05CB0390 Project No. ABS095 Site Descrip: GLENNIFER LAKE: EAST PROFILE 1A (1) DD-MON-YYYY Sample Date: 15 - JUN-2012 Time: 1030 MST Samplers ID1: 65139 ID2: Agency: 211 SampMatrix: 0 SampType: 1 Collection: 17 End Date: _ Time: _ MST Sample Depth: M.			Water	X	X	X	X	X	
Sample No:12SWC80632 Group Sample No: Station No: AB05CB0390 Project No. ABS095 (2) Site Descrip: GLENNIFER LAKE: EAST PROFILE 1B DD-MON-YYYY Sample Date: 15 - JUN-2012 Time: 1040 MST Samplers ID1: 65139 ID2: Agency: 211 SampMatrix: 0 SampType: 1 Collection: 17 End Date: _ Time: _ MST Sample Depth: M.			Water	X	X	X	X	X	

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ons of this form may delay analysis. Please fill in this form LEGIBLY.
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Released by:	Date & Time:	Received by:
	15-Jun-12	

SHIPMENT RECEPTION (lab use only)

Date:	Time:	Temperature:
15Jun12	17:55	12

SHIPMENT VERIFICATION (lab use only)

Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF

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Page 1 of 1

Report to:			
Company:	Alberta Environment		
Contact:	Wendell Koning		
Address:	2938 11 Street NE		
	Calgary, AB T2E 7L7		
Phone:	403 297-8267	Fax:	403 297-6069

Report Format / Distribution

☐ Standard ☐ Other

☑ PDF ☑ Excel ☐ Digital

Email 1: Chris.Teichreb@gov.ab.ca

Email 2: Ray.Walker@gov.ab.ca

Service Requested: (rush - subject to availability)

○ Regular (Default)

○ Priority (2-3 Business Days) - 50% Surcharge

◉ Emergency (1 Business Day) - 100% Surcharge

○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS

Invoice To:	Same as Report ? ◉ Yes ○ No		
Company:			
Contact:			
Address:			
Phone:		Fax:	

Client / Project Information:

Job #:

PO / AFE:

Legal Site Description:

Quote #:

ALS Contact: [redacted] **Sampler:** Ray Walker

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample ID	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
Sample No:12SWC80635 Group Sample No: Station No: AB05CB0410 Project No. ABS095 Site Descrip: GLENNIFER LAKE: WEST PROFILE 1B DD-MON-YYYY Sample Date: 15 - JUN-2012 Time: 1235 MST Samplers ID1: 65139 ID2: Agency: 211 SampMatrix: 0 SampType: 1 Collection: 17 End Date: _ Time: _ MST Sample Depth: M. (3)			Water	X	X	X	X	X	
Sample No:12SWC80636 Group Sample No: Station No: AB05CB0410 Project No. ABS095 Site Descrip: GLENNIFER LAKE: WEST PROFILE 1C DD-MON-YYYY Sample Date: 15 - JUN-2012 Time: 1215 MST Samplers ID1: 65139 ID2: Agency: 211 SampMatrix: 0 SampType: 1 Collection: 17 End Date: _ Time: _ MST Sample Depth: M. (9)			Water	X	X	X	X	X	

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e Terms and Conditions as specified on the back page of the white - report copy.

Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	15-Jun-12	BW	15/Jun/12	17:55	12			

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Report to:

Company: Alberta Environment

Contact: Wendell Koning

Address: 2938 11 Street NE

Calgary, AB T2E 7L7

Phone: 403 297-8267 Fax: 403 297-6069

Invoice To: Same as Report ? (•) Yes ( ) No

Company:

Contact:

Address:

Phone: Fax:

Report Format / Distribution

☐ Standard ☐ Other

☑ PDF ☑ Excel ☐ Digital

Email 1: Chris.Teichreb@gov.ab.ca

Email 2: Ray.Walker@gov.ab.ca

Client / Project Information:

Job #:

PO / AFE:

Legal Site Description:

Quote #:

ALS Contact:

Sampler: Ray Walker

Service Requested: (rush - subject to availability)

( ) Regular (Default)

( ) Priority (2-3 Business Days) - 50% Surcharge

(•) Emergency (1 Business Day) - 100% Surcharge

( ) For Emergency < 1 Day, ASAP or Weekend - Contact ALS

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
		Water	X	X	X	X	X	
		Water	X	X	X	X	X	

Sample No: 12SWC80633

Station No: AB05CB0390 Group Sample No:

Site Descrip: GLENNIFER LAKE: EAST PROFILE 1C Project No. ABS095

DD-MON-YYYY

Sample Date: 15 - JUN - 2012 Time: 1055 MST

Samplers ID1: 65139 ID2:

Agency: 211 SampMatrix: 0

SampType: 1 Collection: 17

End Date: - Time: - MST

Sample Depth: M.

Sample No: 12SWC80634

Station No: AB05CB0410 Group Sample No:

Site Descrip: GLENNIFER LAKE: WEST PROFILE 1A Project No. ABS095

DD-MON-YYYY

Sample Date: 15 - JUN - 2012 Time: 1225 MST

Samplers ID1: 65139 ID2:

Agency: 211 SampMatrix: 0

SampType: 1 Collection: 17

End Date: - Time: - MST

Sample Depth: M.

Restrictions / Regulations / Hazardous Details

Number of Containers

SHIPMENT RELEASE (Client use)

Released by:

Date & Time: 15-Jun-12 1800

SHIPMENT RECEPTION (ALS use only)

Received by: Ron

Date: 15-Jun-12

Time: 17:55

Temperature: 12

Verified by:

Date & Time:

Observations: Yes / No ? If Yes attach SIF

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Report to:			
Company:	Alberta Environment		
Contact:	Wendell Koning		
Address:	2938 11 Street NE		
	Calgary, AB T2E 7L7		
Phone:	403 297-8267	Fax:	403 297-6069

Invoice To:	Same as Report ? (●) Yes ( ) No		
Company:			
Contact:			
Address:			
Phone:		Fax:	

Report Format / Distribution
☐ Standard ☐ Other
☑ PDF ☑ Excel ☐ Digital
Email 1: Chris.Teichreb@gov.ab.ca
Email 2: Ray.Walker@gov.ab.ca

Client / Project Information:
Job #:
PO / AFE:
Legal Site Description:
Quote #:

Service Requested: (rush - subject to availability)
( ) Regular (Default)
( ) Priority (2-3 Business Days) - 50% Surcharge
(●) Emergency (1 Business Day) - 100% Surcharge
( ) For Emergency < 1 Day, ASAP or Weekend - Contact ALS

Analysis Request
Please indicate below Filtered, Preserved or both (F, P, F/P)

ALS Contact:

Sampler: ~~Kate Forbes~~ ~~Ray Walker~~ Jon Podlar

Sample No: 12SWC80641 Group Sample No:
Station No: AB05CA0050 Project No. ABS095 (11)
Site Descrip: RED DEER RIVER AT SUNDRE
DD-MON-YYYY
Sample Date: 15-JUN-2012 Time: 4:50 MST
Samplers ID1: 248379 ID2: 277183
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

Sample No: 12SWC80642 Group Sample No:
Station No: AB05CA0445 Project No. ABS095 (12)
Site Descrip: RED DEER RIVER AT GARRINGTON BRIDGE
DD-MON-YYYY
Sample Date: 15-JUN-2012 Time: 9:50 MST
Samplers ID1: 248379 ID2: 277183
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 16
End Date: _ Time: _ MST
Sample Depth: M.

te (dd-mm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
		Water	X	X	X	X	X	
		Water	X	X	X	X	X	

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SHIPMENT RECEPTION (lab use only)

Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	15-Jun-12 1860		15Jun12	17:55	12			

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Report to:		Report Format / Distribution			Service Requested: (rush - subject to availability)
Company:	Alberta Environment	☐ Standard	☐ Other		○ Regular (Default)
Contact:	Wendell Koning	☑ PDF	☑ Excel	☐ Digital	○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE	Email 1:	Chris.Teichreb@gov.ab.ca		◉ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7	Email 2:	Ray.Walker@gov.ab.ca		○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267 Fax: 403 297-6069				**Analysis Request**
Invoice To:	Same as Report ? ◉ Yes ○ No	**Client / Project Information:**			Please Indicate below Filtered, Preserved or both (F, P, F/P)
Company:		Job #:			
Contact:		PO / AFE:			
Address:		Legal Site Description:			
Phone:	Fax:	Quote #:			

ALS Contact: Sampler: ~~Ray Walker~~ Jon Pollon

Sample No:	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
Sample No: 12SWC80643 Group Sample No: (13) Station No: AB05CC0170 Project No: ABS095 **Site Descrip: RED DEER RIVER AT INNISFAIL HWY 54 BRIDGE** DD-MON-YYYY Sample Date: 15-JUN-2012 Time: 11:00 MST Samplers ID1: 248379 ID2: 277183 Agency: 211 SampMatrix: 0 SampType: 1 Collection: 16 End Date: _ Time: _ MST Sample Depth: _ M.		Water	X	X	X	X	X	
Sample No: 12SWC80644 Group Sample No: (14) Station No: AB05CC0010 Project No: ABS095 **Site Descrip: RED DEER RIVER U/S HWY 2 ABOVE RED DEER** DD-MON-YYYY Sample Date: 15-JUN-2012 Time: 11:55 MST Samplers ID1: 248379 ID2: 277153 Agency: 211 SampMatrix: 0 SampType: 1 Collection: 16 End Date: _ Time: _ MST Sample Depth: _ M.		Water	X	X	X	X	X	

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Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	15-Jun-12 1800		15 Jun 12	17:55	12			

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Page 1 of 1

Report to:		Report Format / Distribution	Service Requested: (rush - subject to availability)
Company:	Alberta Environment	☐ Standard ☐ Other	○ Regular (Default)
Contact:	Wendell Koning	☑ PDF ☑ Excel ☐ Digital	○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE	Email 1: Chris.Teichreb@gov.ab.ca	◉ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7	Email 2: Ray.Walker@gov.ab.ca	○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267 Fax: 403 297-6069		
Invoice To:	Same as Report ? ◉ Yes ○ No	Client / Project Information:	Analysis Request
Company:		Job #:	Please indicate below Filtered, Preserved or both (F, P, F/P)
Contact:		PO / AFE:	
Address:		Legal Site Description:	
Phone:	Fax:	Quote #:	
		ALS Contact:	Sampler: Jay Parsons ~~Ray Walker~~

	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
Sample No: 12SWC80645 Group Sample No: (15)		Water	X	X	X	X	X	
Station No: AB05CD0250 Project No. ABS095								
Site Descrip: RED DEER RIVER AT NEVIS BRIDGE								
DD-MON-YYYY								
Sample Date: 15-JUN-2012 Time: 1120 MST		Water	X	X	X	X	X	
Samplers ID1: 232627 ID2: 67418								
Agency: 211 SampMatrix: 0								
SampType: 1 Collection: 16								
End Date: _ Time: _ MST								
Sample Depth: M								
Sample No: 12SWC80646 Group Sample No:								
Station No: AB05CE0009 Project No. ABS095 (16)								
Site Descrip: RED DEER RIVER AT MORRIN BRIDGE								
DD-MON-YYYY								
Sample Date: 15-JUN-2012 Time: 945 MST								
Samplers ID1: 232627 ID2: 67418								
Agency: 211 SampMatrix: 0								
SampType: 1 Collection: 16								
End Date: _ Time: _ MST								
Sample Depth: M.								

/ Regulations / Hazardous Details

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Released by:	Date & Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF
	15-Jun-12 1800		15Jun12	17:55	12			

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Report to:		Report Format / Distribution	Service Requested: (rush - subject to availability)
Company:	Alberta Environment	☐ Standard ☐ Other	○ Regular (Default)
Contact:	Wendell Koning	☑ PDF ☑ Excel ☐ Digital	○ Priority (2-3 Business Days) - 50% Surcharge
Address:	2938 11 Street NE	Email 1: Chris.Teichreb@gov.ab.ca	◉ Emergency (1 Business Day) - 100% Surcharge
	Calgary, AB T2E 7L7	Email 2: Ray.Walker@gov.ab.ca	○ For Emergency < 1 Day, ASAP or Weekend - Contact ALS
Phone:	403 297-8267 Fax: 403 297-6069		
Invoice To:	Same as Report ? ◉ Yes ○ No	Client / Project Information:	Analysis Request
Company:		Job #:	Please indicate below Filtered, Preserved or both (F, P, F/P)
Contact:		PO / AFE:	
Address:		Legal Site Description:	
Phone:	Fax:	Quote #:	
		ALS Contact:	Sampler: ~~Ray Walker~~ James Rigas

Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTXS, F1	F2-F4	PAH	PHENOLS	OIL AND GREASE	Number of Containers
			Water	X	X	X	X	X	
Sample No: 12SWC80647 Group Sample No: (17)									
Station No: AB05CJ0070 Project No. ABS095									
Site Descrip: RED DEER RIVER AT HWY 884 NEAR JENNER			Water	X	~~X~~	~~X~~	~~X~~	X	
DD-MON-YYYY									
Sample Date: 15-JUN-2012 Time: MST									
Samplers ID1: 229722 ID2: ~~67~~									
Agency: 211 SampMatrix: 0									
SampType: 1 Collection: 16									
End Date: Time: MST									
Sample Depth: M.									

13

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SHIPMENT RELEASE (client use)		SHIPMENT RECEPTION (lab use ONLY)				SHIPMENT VERIFICATION (lab use ONLY)		
Released by:	Date & Time: 1800 15-Jun-12	Received by:	Date: 15 Jun 12	Time: 17:55	Temperature: 12	Verified by:	Date & Time:	Observations: Yes / No ? If Yes attach SIF

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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GENF 18.00 Front

Your Project #: ABSR34

Attention: CHRIS TEICHREB
ALBERTA ENVIRONMENT
3RD FLOOR, PROVINCIAL BLDG.
4920-51 STREET
RED DEER, AB
CANADA T4N-6K8

Report Date: 2012/06/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B251135
Received: 2012/06/15, 18:10

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	2	N/A	2012/06/16	AB SOP-00005	SM 2320-B
Chloride by Automated Colourimetry	2	N/A	2012/06/18	AB SOP-00020	EPA 325.2
True Colour	2	N/A	2012/06/18	CAL SOP-00049	SM 2120 C
Carbon (DOC)	2	N/A	2012/06/18	CAL SOP-00077	MMCW 119
Conductivity @25C	2	N/A	2012/06/16	AB SOP-00005	SM 2510-B
Fluoride	2	N/A	2012/06/16	AB SOP-00005	SM 4500-F C
Hardness	2	N/A	2012/06/18	AB WI-00065	SM 2340B
Elements by ICP - Dissolved	2	N/A	2012/06/17	AB SOP-00042	EPA 200.7
Ion Balance	2	N/A	2012/06/17	AB WI-00065	SM 1030E
Sum of cations, anions	2	N/A	2012/06/18	AB WI-00065	SM 1030E
Nitrogen (total), Calc. TKN, NO3, NO2	2	N/A	2012/06/18	AB WI-00065	SM 4500-N A
Ammonia-N (Total)	2	N/A	2012/06/18	AB SOP-00007	EPA 350.1
Nitrate + Nitrite-N (calculated)	2	N/A	2012/06/18	AB SOP-00023	SM 4110-B
Nitrogen, (Nitrite, Nitrate) by IC	2	N/A	2012/06/18	AB SOP-00023	SM 4110-B
pH @25°C (Alkalinity titrator)	2	N/A	2012/06/16	AB SOP-00005	SM 4500-H+B
Sulphate by Automated Colourimetry	2	N/A	2012/06/18	AB SOP-00018	EPA 375.4
Total Dissolved Solids (Filt. Residue)	2	2012/06/17	2012/06/17	CAL SOP-00074	SM 2540-C
Total Dissolved Solids (Calculated)	2	N/A	2012/06/18	AB WI-00065	SM 1030E
Total Kjeldahl Nitrogen	2	2012/06/18	2012/06/18	AB SOP-00008	EPA 351.1, 351.2
Carbon (Total Organic)	2	N/A	2012/06/18	CAL SOP-00077	MMCW 119
Phosphorous -P (Total, Dissolved)	2	2012/06/18	2012/06/18	AB SOP-00024	SM 4500-P
Total Phosphorous	2	2012/06/18	2012/06/18	AB SOP-00024	SM 4500-P
Total Suspended Solids (NFR)	2	2012/06/17	2012/06/17	CAL SOP-00075	SM 2540-D
Turbidity	2	N/A	2012/06/17	CAL SOP-00081	SM 2130B

../2

Your Project #: ABSR34

Attention: CHRIS TEICHREB
ALBERTA ENVIRONMENT
3RD FLOOR, PROVINCIAL BLDG.
4920-51 STREET
RED DEER, AB
CANADA T4N-6K8

Report Date: 2012/06/18

CERTIFICATE OF ANALYSIS

Encryption Key

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

Jesse Bourque, Project Manager
Email: JBourque@maxxam.ca
Phone# (403) 291-3077

==========

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Total cover pages: 2

Maxxam

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ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Sample Description : 12SWE04843
Sample Date & Time : 2012/06/15 09:45
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/15
Sample Station Code : AB05CE0009

Maxxam Sample Number : DR7705
Maxxam Job Number : CB251135
Sample Access : RED DEER RIVER AT MORRIN E
Sample Matrix : Water
Report Date : 2012/06/18

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Calculated Parameters							
Anion Sum	3.5	meq/L	CALC		5928135	N/A	N/A
Cation Sum	3.8	meq/L	CALC		5928135	N/A	N/A
Hardness (CaCO3)	140	mg/L	CALC	010602	5928133	0.50	0.50
Ion Balance	1.1	N/A	CALC	000111	5928134	0.010	0.010
Nitrate plus Nitrite (N)	0.31	mg/L	CALC	102649	5928136	0.0030	0.0030
Total Dissolved Solids	190	mg/L	CALC	000201	5928137	10	10
Misc. Inorganics							
Conductivity	320	uS/cm	ECEL	002041	5928207	1.0	1.0
Dissolved Organic Carbon (C)	10	mg/L	CFA	006104	5929871	0.50	0.50
pH	8.22	N/A	TITR/ALK	010301	5928208	N/A	N/A
Total Organic Carbon (C)	11	mg/L	CFA	006005	5929873	0.50	0.50
Total Dissolved Solids	220 (1)	mg/L	BAL	010451	5928779	20	10
Total Suspended Solids	1000 (1)	mg/L	BAL	010405	5928780	4.0	1.0
Anions							
Alkalinity (PP as CaCO3)	<0.50	mg/L	WATR/ALK	010151	5928204	0.50	0.50
Alkalinity (Total as CaCO3)	140	mg/L	WATR/ALK	010111	5928204	0.50	0.50
Bicarbonate (HCO3)	170	mg/L	WATR/ALK	006201	5928204	0.50	0.50
Carbonate (CO3)	<0.50	mg/L	WATR/ALK	006301	5928204	0.50	0.50
Dissolved Fluoride (F)	0.16	mg/L	ISE	009105	5928209	0.050	0.050
Dissolved Sulphate (SO4)	31	mg/L	KONE	106150	5929617	1.0	1.0
Hydroxide (OH)	<0.50	mg/L	WATR/ALK	008501	5928204	0.50	0.50
Dissolved Chloride (Cl)	3.6	mg/L	KONE	017206	5929613	1.0	1.0
Nutrients							
Dissolved Phosphate (P)	0.030	mg/L	KONE	015423	5930669	0.0030	0.0030
Total Ammonia (N)	0.073	mg/L	KONE	007505	5929616	0.050	0.050
Total Kjeldahl Nitrogen	1.0	mg/L	KONE	007015	5931345	0.050	0.050

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Sample Description : 12SWE04843
Sample Date & Time : 2012/06/15 09:45
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/15
Sample Station Code : AB05CE0009

Maxxam Sample Number : DR7705
Maxxam Job Number : CB251135
Sample Access : RED DEER RIVER AT MORRIN B
Sample Matrix : Water
Report Date : 2012/06/18

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Nutrients							
Total Nitrogen (N)	1.3	mg/L	CALC	007602	5928152	0.050	0.050
Total Phosphate (P)	0.17	mg/L	KONE	015406	5930748	0.0030	0.0030
Dissolved Nitrite (N)	<0.0030	mg/L	IC/UV	102648	5928836	0.0030	0.0030
Dissolved Nitrate (N)	0.31	mg/L	IC/UV	102647	5928836	0.0030	0.0030
Physical Properties							
True Colour	32	PtCo units	SPEC/COL	002021	5929296	2.0	2.0
Physical Properties							
Turbidity	860	NTU	TURB	002074	5928783	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Sample Description : 12SWE04843
Sample Date & Time : 2012/06/15 09:45
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/15
Sample Station Code : AB05CE0009

Maxxam Sample Number : DR7705
Maxxam Job Number : CB251135
Sample Access : RED DEER RIVER AT MORRIN E
Sample Matrix : Water
Report Date : 2012/06/18

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	39	mg/L	ICPA	020111	5928885	0.30	0.30
Dissolved Iron (Fe)	0.072	mg/L	ICPA	102090	5928885	0.060	0.060
Dissolved Magnesium (Mg)	11	mg/L	ICPA	012111	5928885	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	5928885	0.0040	0.0040
Dissolved Potassium (K)	2.4	mg/L	ICPA	019111	5928885	0.30	0.30
Dissolved Sodium (Na)	20	mg/L	ICPA	011111	5928885	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Sample Description : 12SWE04847
Sample Date & Time : 2012/06/15 12:46
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/15
Sample Station Code : AB05CJ0070

Maxxam Sample Number : DR7706
Maxxam Job Number : CB251135
Sample Access : RERED DEER RIVER AT HWY 88
Sample Matrix : Water
Report Date : 2012/06/18

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Calculated Parameters							
Anion Sum	3.9	meq/L	CALC		5928135	N/A	N/A
Cation Sum	4.2	meq/L	CALC		5928135	N/A	N/A
Hardness (CaCO3)	150	mg/L	CALC	010602	5928133	0.50	0.50
Ion Balance	1.1	N/A	CALC	000111	5928134	0.010	0.010
Nitrate plus Nitrite (N)	0.48	mg/L	CALC	102649	5928136	0.0030	0.0030
Total Dissolved Solids	220	mg/L	CALC	000201	5928137	10	10
Misc. Inorganics							
Conductivity	360	uS/cm	ECEL	002041	5928207	1.0	1.0
Dissolved Organic Carbon (C)	8.8	mg/L	CFA	006104	5929871	0.50	0.50
pH	8.12	N/A	TITR/ALK	010301	5928208	N/A	N/A
Total Organic Carbon (C)	25	mg/L	CFA	006005	5929873	0.50	0.50
Total Dissolved Solids	180 (1)	mg/L	BAL	010451	5928779	25	10
Total Suspended Solids	1800 (1)	mg/L	BAL	010405	5928780	5.0	1.0
Anions							
Alkalinity (PP as CaCO3)	<0.50	mg/L	WATR/ALK	010151	5928204	0.50	0.50
Alkalinity (Total as CaCO3)	140	mg/L	WATR/ALK	010111	5928204	0.50	0.50
Bicarbonate (HCO3)	170	mg/L	WATR/ALK	006201	5928204	0.50	0.50
Carbonate (CO3)	<0.50	mg/L	WATR/ALK	006301	5928204	0.50	0.50
Dissolved Fluoride (F)	0.17	mg/L	ISE	009105	5928209	0.050	0.050
Dissolved Sulphate (SO4)	47 (2)	mg/L	KONE	106150	5929617	2.0	1.0
Hydroxide (OH)	<0.50	mg/L	WATR/ALK	008501	5928204	0.50	0.50
Dissolved Chloride (Cl)	4.9	mg/L	KONE	017206	5929613	1.0	1.0
Nutrients							
Dissolved Phosphate (P)	0.031	mg/L	KONE	015423	5930669	0.0030	0.0030
Total Ammonia (N)	0.090	mg/L	KONE	007505	5929616	0.050	0.050

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly
(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Sample Description : 12SWE04847
Sample Date & Time : 2012/06/15 12:46
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/15
Sample Station Code : AB05CJ0070

Maxxam Sample Number : DR7706
Maxxam Job Number : CB251135
Sample Access : RERED DEER RIVER AT HWY 8
Sample Matrix : Water
Report Date : 2012/06/18

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Nutrients							
Total Kjeldahl Nitrogen	2.5 (1)	mg/L	KONE	007015	5931345	0.25	0.050
Total Nitrogen (N)	2.9	mg/L	CALC	007602	5928152	0.050	0.050
Total Phosphate (P)	1.0 (2)	mg/L	KONE	015406	5930748	0.030	0.0030
Dissolved Nitrite (N)	<0.0030	mg/L	IC/UV	102648	5928836	0.0030	0.0030
Dissolved Nitrate (N)	0.48	mg/L	IC/UV	102647	5928836	0.0030	0.0030
Physical Properties							
True Colour	32	PtCo units	SPEC/COL	002021	5929296	2.0	2.0
Physical Properties							
Turbidity	>1000 (3)	NTU	TURB	002074	5928783	0.10	0.10

N/A = Not Applicable
RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Oven Maxxam ID: 00541

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly
(3) Sample contains sediment

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Sample Description : 12SWE04847
Sample Date & Time : 2012/06/15 12:46
Sampled By :
Sample Type : AEP Type 1
Sample Received Date : 2012/06/15
Sample Station Code : AB05CJ0070

Maxxam Sample Number : DR7706
Maxxam Job Number : CB251135
Sample Access : RERED DEER RIVER AT HWY 88
Sample Matrix : Water
Report Date : 2012/06/18

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	Units	INST.	VMV Code	QA/QC Batch	MDL	RDL
Elements							
Dissolved Calcium (Ca)	39	mg/L	ICPA	020111	5928885	0.30	0.30
Dissolved Iron (Fe)	0.11	mg/L	ICPA	102090	5928885	0.060	0.060
Dissolved Magnesium (Mg)	13	mg/L	ICPA	012111	5928885	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	5928885	0.0040	0.0040
Dissolved Potassium (K)	2.6	mg/L	ICPA	019111	5928885	0.30	0.30
Dissolved Sodium (Na)	25	mg/L	ICPA	011111	5928885	0.50	0.50

RDL = Reportable Detection Limit
MDL = Method Detection Limit - Calculated on the basis of the instrument detection level, the dilution used, and the weight of the sample.
Results are not corrected for surrogate or moisture values unless otherwise stated.

Maxxam Job #: B251135
Report Date: 2012/06/18

ALBERTA ENVIRONMENT
Client Project #: ABSR34

Package 1	4.2°C

Each temperature is the average of up to three cooler temperatures taken at receipt

Results relate only to the items tested.

Maxxam

Success Through Science®

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB251135

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5928204	BE3	Spiked Blank	Alkalinity (Total as CaCO3)	2012/06/16		96	%	80 - 120
		Method Blank	Alkalinity (PP as CaCO3)	2012/06/16	<0.50		mg/L	
			Alkalinity (Total as CaCO3)	2012/06/16	<0.50		mg/L	
			Bicarbonate (HCO3)	2012/06/16	<0.50		mg/L	
			Carbonate (CO3)	2012/06/16	<0.50		mg/L	
			Hydroxide (OH)	2012/06/16	<0.50		mg/L	
		RPD	Alkalinity (PP as CaCO3)	2012/06/16	NC		%	20
			Alkalinity (Total as CaCO3)	2012/06/16	2.3		%	20
			Bicarbonate (HCO3)	2012/06/16	2.3		%	20
			Carbonate (CO3)	2012/06/16	NC		%	20
			Hydroxide (OH)	2012/06/16	NC		%	20
5928207	BE3	Spiked Blank	Conductivity	2012/06/16		99	%	90 - 110
		Method Blank	Conductivity	2012/06/16	<1.0		uS/cm	
		RPD	Conductivity	2012/06/16	1.2		%	20
5928208	BE3	Spiked Blank	pH	2012/06/16		100	%	97 - 102
		RPD	pH	2012/06/16	0.3		%	5
5928209	BE3	Matrix Spike	Dissolved Fluoride (F)	2012/06/16		NC	%	80 - 120
		Spiked Blank	Dissolved Fluoride (F)	2012/06/16		101	%	80 - 120
		Method Blank	Dissolved Fluoride (F)	2012/06/16	<0.050		mg/L	
		RPD	Dissolved Fluoride (F)	2012/06/16	1.4		%	20
5928779	HE1	Spiked Blank	Total Dissolved Solids	2012/06/17		92	%	80 - 113
		Method Blank	Total Dissolved Solids	2012/06/17	<10		mg/L	
		RPD	Total Dissolved Solids	2012/06/17	0.6		%	20
5928780	HE1	Spiked Blank	Total Suspended Solids	2012/06/17		90	%	81 - 105
		Method Blank	Total Suspended Solids	2012/06/17	<1.0		mg/L	
		RPD	Total Suspended Solids	2012/06/17	8.7		%	20
5928783	HE1	Spiked Blank	Turbidity	2012/06/17		98	%	93 - 99
		Method Blank	Turbidity	2012/06/17	<0.10		NTU	
		RPD	Turbidity	2012/06/17	9.5		%	20
5928836	RP0	Matrix Spike	Dissolved Nitrite (N)	2012/06/17		98	%	80 - 120
			Dissolved Nitrate (N)	2012/06/17		101	%	80 - 120
		Spiked Blank	Dissolved Nitrite (N)	2012/06/17		100	%	90 - 110
			Dissolved Nitrate (N)	2012/06/17		101	%	90 - 110
		Method Blank	Dissolved Nitrite (N)	2012/06/17	<0.0030		mg/L	
			Dissolved Nitrate (N)	2012/06/17	<0.0030		mg/L	
		RPD	Dissolved Nitrite (N)	2012/06/17	NC		%	20
			Dissolved Nitrate (N)	2012/06/17	NC		%	20
5928885	STI	Matrix Spike	Dissolved Calcium (Ca)	2012/06/18		97	%	80 - 120
			Dissolved Iron (Fe)	2012/06/18		91	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/18		101	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/18		97	%	80 - 120
			Dissolved Potassium (K)	2012/06/18		100	%	80 - 120
			Dissolved Sodium (Na)	2012/06/18		95	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2012/06/17		102	%	80 - 120
			Dissolved Iron (Fe)	2012/06/17		100	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/17		104	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/17		99	%	80 - 120
			Dissolved Potassium (K)	2012/06/17		105	%	80 - 120
			Dissolved Sodium (Na)	2012/06/17		96	%	80 - 120
		Method Blank	Dissolved Calcium (Ca)	2012/06/17	<0.30		mg/L	
			Dissolved Iron (Fe)	2012/06/17	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2012/06/17	<0.20		mg/L	
			Dissolved Manganese (Mn)	2012/06/17	<0.0040		mg/L	
			Dissolved Potassium (K)	2012/06/17	<0.30		mg/L	
			Dissolved Sodium (Na)	2012/06/17	<0.50		mg/L	
		RPD	Dissolved Calcium (Ca)	2012/06/17	0.5		%	20

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB251135

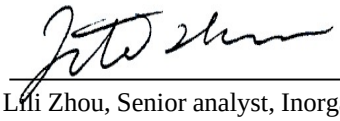
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5928885	STI	RPD	Dissolved Iron (Fe)	2012/06/17	NC		%	20
			Dissolved Magnesium (Mg)	2012/06/17	0.2		%	20
			Dissolved Manganese (Mn)	2012/06/17	NC		%	20
			Dissolved Potassium (K)	2012/06/17	NC		%	20
			Dissolved Sodium (Na)	2012/06/17	0.6		%	20
5929296	ZI	Spiked Blank	True Colour	2012/06/18		96	%	90 - 110
		Method Blank	True Colour	2012/06/18	<2.0		PtCo units	
		RPD	True Colour	2012/06/18	NC		%	20
5929613	ZI	Matrix Spike	Dissolved Chloride (Cl)	2012/06/18		107	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2012/06/18		104	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2012/06/18	<1.0		mg/L	
		RPD	Dissolved Chloride (Cl)	2012/06/18	7.8		%	20
5929616	IA0	Matrix Spike	Total Ammonia (N)	2012/06/18		102	%	80 - 120
		Spiked Blank	Total Ammonia (N)	2012/06/18		116	%	80 - 120
		Method Blank	Total Ammonia (N)	2012/06/18	<0.050		mg/L	
		RPD	Total Ammonia (N)	2012/06/18	NC		%	20
5929617	ZI	Matrix Spike	Dissolved Sulphate (SO4)	2012/06/18		104	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2012/06/18		102	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2012/06/18	<1.0		mg/L	
		RPD	Dissolved Sulphate (SO4)	2012/06/18	NC		%	20
5929871	AP1	Matrix Spike	Dissolved Organic Carbon (C)	2012/06/18		115	%	80 - 120
		Spiked Blank	Dissolved Organic Carbon (C)	2012/06/18		112	%	84 - 120
		Method Blank	Dissolved Organic Carbon (C)	2012/06/18	<0.50		mg/L	
		RPD	Dissolved Organic Carbon (C)	2012/06/18	NC		%	20
5929873	AP1	Matrix Spike [DR7705-01]	Total Organic Carbon (C)	2012/06/18		NC	%	80 - 120
		Spiked Blank	Total Organic Carbon (C)	2012/06/18		114	%	84 - 120
		Method Blank	Total Organic Carbon (C)	2012/06/18	<0.50		mg/L	
		RPD [DR7705-01]	Total Organic Carbon (C)	2012/06/18	8.8		%	20
5930669	IA0	Matrix Spike	Dissolved Phosphate (P)	2012/06/18		100	%	80 - 120
		QC Standard	Dissolved Phosphate (P)	2012/06/18		94	%	80 - 120
		Spiked Blank	Dissolved Phosphate (P)	2012/06/18		101	%	83 - 111
		Method Blank	Dissolved Phosphate (P)	2012/06/18	<0.0030		mg/L	
		RPD	Dissolved Phosphate (P)	2012/06/18	NC		%	20
5930748	IA0	Matrix Spike	Total Phosphate (P)	2012/06/18		106	%	80 - 120
		QC Standard	Total Phosphate (P)	2012/06/18		94	%	80 - 120
		Spiked Blank	Total Phosphate (P)	2012/06/18		98	%	83 - 111
		Method Blank	Total Phosphate (P)	2012/06/18	<0.0030		mg/L	
		RPD	Total Phosphate (P)	2012/06/18	9.7		%	20
5931345	IA0	Matrix Spike	Total Kjeldahl Nitrogen	2012/06/18		NC	%	80 - 120
		QC Standard	Total Kjeldahl Nitrogen	2012/06/18		100	%	75 - 125
		Spiked Blank	Total Kjeldahl Nitrogen	2012/06/18		119	%	80 - 120
		Method Blank	Total Kjeldahl Nitrogen	2012/06/18	<0.050		mg/L	
		RPD	Total Kjeldahl Nitrogen	2012/06/18	7.9		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B251135

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Lili Zhou, Senior analyst, Inorganic department.

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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. For Service Group specific validation please refer to the Validation Signature Page.

MAXXAM ANALYTICS INC

B251135

Calgary: 4000 -19 Street NE, T2E 6P8 Ph: (403) 291-3650, Fax: (403) 291-3673, Toll free: (800) 386-7247
Edmonton: 9331 - 48 Street, T6B 2R4. Ph: (780) 465-1212, Fax: (780) 450-4187, Toll free: (877) 465-8889

12SWE04843	
Sample Number	Group Sample Number
ABO5CE0009	ABSR34
Station / Transect Number	Project Number

Station Descrip/Comment: **Red Deer River at Morrin Bridge**

Sample Date: 15 JUN 2012 (Day / Month / Year) Time: 0945 MST

Samplers ID1: 6T4418 ID2: 232627

Agency	Matrix	Type	Collection
211	0	01	016

Maxxam Quote # A90511
Maxxam Group RM
Maxxam Lab #

Project Tech. Name: Sarah Hustins

Project Tech. Phone: 780-422-4217 (main)
780-203-2096 (cell)

Invoice and Results To:
Name: Chris Teichreb
Address: #304, 4920-51st.
City/Prov: Red Deer, Alberta
Postal Code: T4N 6K8
Email:

Customer Service Rep's
Jesse Bourque -Calgary 403-735-2205
Tanya Eugene-Edmonton 780-577-7144

☐ **WATPOT** T-Alk, pp-Alk, HCO_3, CO_3, OH, pH, Conductivity, Hardness, Ion Sum, Ion Balance, Dissolved (Ca, Mg, K, Fe, Na & Mn), Cl, SO_4, NO_3-N (Nitrate), NO_2-N (Nitrite), NO_3-N + NO_2-N, TDS (Calc), Flouride, Turbidity

ROUTINE unfiltered / unpreserved
(500ml. Plastic)
- ☐ Calcium
- ☐ Magnesium
- ☐ Sodium
- ☐ Potassium
- ☐ Chloride
- ☐ Sulphate
- ☐ Alkalinity
- ☐ pH
- ☐ T. Hardness (Ca, Mg)
- ☐ Conductivity
- ☐ TDS (calc)
- ☐ Ion Balance
- ☐ Silica
- ☐ Flouride
- ☐ TIC
- ☐ DIC
- ☐ True Color

G-1 unfiltered / unpreserved
(250ml. Plastic)
- ☐ Tann & Lig
- ☐ Turbidity
- ☐ TDS (FR)
- ☐ TSS (NFR)
- ☐ Total Solids (calc)
- ☐ Total Solids

G2 unfiltered / preserved
(250ml. Plastic)
(2ml 50% H_2SO_4)
- ☐ Total Phosphate
- ☐ TKN
- ☐ NH3-N
- ☐ COD
- ☐ Organic Nitrogen
- ☐ TOC

G2-F unfiltered / unpreserved
(250ml. Plastic)
- ☐ Dissolved Phosphorus
- ☐ DKN
- ☐ DOC

N unfiltered / unpreserved
(60ml Plastic)
- ☐ NO_2 (Nitrite)
- ☐ NO_3 (Nitrate)
- ☐ NO_2+NO_3-N

☐ **Hexavalent Chromium** unfiltered / preserved
(60ml. Plastic)
(1ml 10N NaOH)

☐ **CYANIDE** unfiltered / preserved
(250ml. Plastic)
(1ml 10N NaOH)

☐ **SULPHIDE** unfiltered / preserved
(250ml. Plastic)
(1ml 2N ZnAc & 1ml 10N NaOH)

☐ **OIL & GREASE** unfiltered / preserved
(500ml. Amber Glass)
(2ml 50% H_2SO_4)

☐ **BOD** unfiltered / unpreserved
(500ml. Plastic)

☐ **AOX** unfiltered / preserved
(500ml Amber Glass)
(2ml 50% HNO_3)

2012/06/15
Helen Day 18:10

3.4/6.1/3.2

COMMENTS

Received By: _____ Date: ____ / ____ / ____
Day Month Year

Maxxam analytics inc

B251135

Calgary: 4000 -19 Street NE, T2E 6P8 Ph: (403) 291-3650, Fax: (403) 291-3673, Toll free: (800) 386-7247
Edmonton: 9331 - 48 Street, T6B 2R4. Ph: (780) 465-1212, Fax: (780) 450-4187, Toll free: (877) 465-8889

Sample Number: 12SWE04847	Group Sample Number:
Station / Transect Number: ABO5CJ0070	Project Number: ABSR34

Station Descrip/Comment: **Red Deer River at Hwy 884 near Jenner**

Sample Date: 15 (Day) Jun (Month) 2012 (Year) Time: 1216 MST

Samplers ID1: 221721 ID2:

Agency: 211 Matrix: 0 Type: 01 Collection: 016

Maxxam Quote # A90511
Maxxam Group RM
Maxxam Lab #

Project Tech. Name: Sarah Hustins

Project Tech. Phone: 780-422-4217 (main)
780-203-2096 (cell)

Invoice and Results To:
Name: Chris Teichreb
Address: #304, 4920-51st.
City/Prov: Red Deer, Alberta
Postal Code: T4N 6K8
Email:

Customer Service Rep's
Jesse Bourque -Calgary 403-735-2205
Tanya Eugene-Edmonton 780-577-7144

☐ **WATPOT** T-Alk, pp-Alk, HCO_3, CO_3, OH, pH, Conductivity, Hardness, Ion Sum, Ion Balance, Dissolved (Ca, Mg, K, Fe, Na & Mn), Cl, SO_4, NO_3-N (Nitrate), NO_2-N (Nitrite), NO_3-N + NO_2-N, TDS (Calc), Flouride, Turbidity

ROUTINE unfiltered / unpreserved
(500ml. Plastic)
- ☐ Calcium
- ☐ Magnesium
- ☐ Sodium
- ☐ Potassium
- ☐ Chloride
- ☐ Sulphate
- ☐ Alkalinity
- ☐ pH
- ☐ T. Hardness (Ca, Mg)
- ☐ Conductivity
- ☐ TDS (calc)
- ☐ Ion Balance
- ☐ Silica
- ☐ Flouride
- ☐ TIC
- ☐ DIC
- ☐ True Color

G-1 unfiltered / unpreserved
(250ml. Plastic)
- ☐ Tann & Lig
- ☐ Turbidity
- ☐ TDS (FR)
- ☐ TSS (NFR)
- ☐ Total Solids (calc)
- ☐ Total Solids

G2 unfiltered / preserved
(250ml. Plastic)
(2ml 50% H_2SO_4)
- ☐ Total Phosphate
- ☐ TKN
- ☐ NH3-N
- ☐ COD
- ☐ Organic Nitrogen
- ☐ TOC

G2-F unfiltered / unpreserved
(250ml. Plastic)
- ☐ Dissolved Phosphorus
- ☐ DKN
- ☐ DOC

N unfiltered / unpreserved
(60ml Plastic)
- ☐ NO_2 (Nitrite)
- ☐ NO_3 (Nitrate)
- ☐ NO_2+NO_3-N

☐ **Hexavalent Chromium** unfiltered / preserved
(60ml. Plastic)
(1ml 10N NaOH)

☐ **CYANIDE** unfiltered / preserved
(250ml. Plastic)
(1ml 10N NaOH)

☐ **SULPHIDE** unfiltered / preserved
(250ml. Plastic)
(1ml 2N ZnAc & 1ml 10N NaOH)

☐ **OIL & GREASE** unfiltered / preserved
(500ml. Amber Glass)
(2ml 50% H_2SO_4)

☐ **BOD** unfiltered / unpreserved
(500ml. Plastic)

☐ **AOX** unfiltered / preserved
(500ml Amber Glass)
(2ml 50% HNO_3)

Please filter G2F

2012/06/15
Hold Dy 1810
3.4/6.1/3.2

COMMENTS

Received By: _____ Date: ___/___/___ (Day / Month / Year)

Your Project #: ABSR34

Attention: CHRIS TEICHREB
ALBERTA ENVIRONMENT
3RD FLOOR, PROVINCIAL BLDG.
4920-51 STREET
RED DEER, AB
CANADA T4N-6K8

Report Date: 2012/06/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B251135
Received: 2012/06/15, 18:10

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	2	N/A	2012/06/16	AB SOP-00005	SM 2320-B
Chloride by Automated Colourimetry	2	N/A	2012/06/18	AB SOP-00020	EPA 325.2
True Colour	2	N/A	2012/06/18	CAL SOP-00049	SM 2120 C
Carbon (DOC)	2	N/A	2012/06/18	CAL SOP-00077	MMCW 119
Conductivity @25C	2	N/A	2012/06/16	AB SOP-00005	SM 2510-B
Fluoride	2	N/A	2012/06/16	AB SOP-00005	SM 4500-F C
Hardness	2	N/A	2012/06/18	AB WI-00065	SM 2340B
Elements by ICP - Dissolved	2	N/A	2012/06/17	AB SOP-00042	EPA 200.7
Ion Balance	2	N/A	2012/06/17	AB WI-00065	SM 1030E
Sum of cations, anions	2	N/A	2012/06/18	AB WI-00065	SM 1030E
Nitrogen (total), Calc. TKN, NO3, NO2	2	N/A	2012/06/18	AB WI-00065	SM 4500-N A
Ammonia-N (Total)	2	N/A	2012/06/18	AB SOP-00007	EPA 350.1
Nitrate + Nitrite-N (calculated)	2	N/A	2012/06/18	AB SOP-00023	SM 4110-B
Nitrogen, (Nitrite, Nitrate) by IC	2	N/A	2012/06/18	AB SOP-00023	SM 4110-B
pH @25°C (Alkalinity titrator)	2	N/A	2012/06/16	AB SOP-00005	SM 4500-H+B
Sulphate by Automated Colourimetry	2	N/A	2012/06/18	AB SOP-00018	EPA 375.4
Total Dissolved Solids (Filt. Residue)	2	2012/06/17	2012/06/17	CAL SOP-00074	SM 2540-C
Total Dissolved Solids (Calculated)	2	N/A	2012/06/18	AB WI-00065	SM 1030E
Total Kjeldahl Nitrogen	2	2012/06/18	2012/06/18	AB SOP-00008	EPA 351.1, 351.2
Carbon (Total Organic)	2	N/A	2012/06/18	CAL SOP-00077	MMCW 119
Phosphorous -P (Total, Dissolved)	2	2012/06/18	2012/06/18	AB SOP-00024	SM 4500-P
Total Phosphorous	2	2012/06/18	2012/06/18	AB SOP-00024	SM 4500-P
Total Suspended Solids (NFR)	2	2012/06/17	2012/06/17	CAL SOP-00075	SM 2540-D
Turbidity	2	N/A	2012/06/17	CAL SOP-00081	SM 2130B

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

../2

Your Project #: ABSR34

Attention: CHRIS TEICHREB
ALBERTA ENVIRONMENT
3RD FLOOR, PROVINCIAL BLDG.
4920-51 STREET
RED DEER, AB
CANADA T4N-6K8

Report Date: 2012/06/18

CERTIFICATE OF ANALYSIS

Encryption Key

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

Jesse Bourque, Project Manager
Email: JBourque@maxxam.ca
Phone# (403) 291-3077

==========

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. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B251135
Report Date: 2012/06/18

ALBERTA ENVIRONMENT
Client Project #: ABSR34

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		DR7705	DR7705		DR7706		
Sampling Date		2012/06/15 09:45	2012/06/15 09:45		2012/06/15 12:46		
	UNITS	**12SWE04843**	**12SWE04843 Lab-Dup**	**RDL**	**12SWE04847**	**RDL**	**QC Batch**
Calculated Parameters							
Anion Sum	meq/L	3.5	N/A	N/A	3.9	N/A	5928135
Cation Sum	meq/L	3.8	N/A	N/A	4.2	N/A	5928135
Hardness (CaCO3)	mg/L	140	N/A	0.50	150	0.50	5928133
Ion Balance	N/A	1.1	N/A	0.010	1.1	0.010	5928134
Nitrate plus Nitrite (N)	mg/L	0.31	N/A	0.0030	0.48	0.0030	5928136
Total Dissolved Solids	mg/L	190	N/A	10	220	10	5928137
Misc. Inorganics							
Conductivity	uS/cm	320	N/A	1.0	360	1.0	5928207
Dissolved Organic Carbon (C)	mg/L	10	N/A	0.50	8.8	0.50	5929871
pH	N/A	8.22	N/A	N/A	8.12	N/A	5928208
Total Organic Carbon (C)	mg/L	11	12	0.50	25	0.50	5929873
Total Dissolved Solids	mg/L	220 (1)	N/A	20	180 (1)	25	5928779
Total Suspended Solids	mg/L	1000 (1)	N/A	4.0	1800 (1)	5.0	5928780
Anions							
Alkalinity (PP as CaCO3)	mg/L	<0.50	N/A	0.50	<0.50	0.50	5928204
Alkalinity (Total as CaCO3)	mg/L	140	N/A	0.50	140	0.50	5928204
Bicarbonate (HCO3)	mg/L	170	N/A	0.50	170	0.50	5928204
Carbonate (CO3)	mg/L	<0.50	N/A	0.50	<0.50	0.50	5928204
Dissolved Fluoride (F)	mg/L	0.16	N/A	0.050	0.17	0.050	5928209
Hydroxide (OH)	mg/L	<0.50	N/A	0.50	<0.50	0.50	5928204
Dissolved Sulphate (SO4)	mg/L	31	N/A	1.0	47 (2)	2.0	5929617
Dissolved Chloride (Cl)	mg/L	3.6	N/A	1.0	4.9	1.0	5929613
Nutrients							
Total Ammonia (N)	mg/L	0.073	N/A	0.050	0.090	0.050	5929616
Total Kjeldahl Nitrogen	mg/L	1.0	N/A	0.050	2.5 (2)	0.25	5931345
Total Nitrogen (N)	mg/L	1.3	N/A	0.050	2.9	0.050	5928152
Dissolved Phosphate (P)	mg/L	0.030	N/A	0.0030	0.031	0.0030	5930669
Total Phosphate (P)	mg/L	0.17	N/A	0.0030	1.0 (1)	0.030	5930748
Dissolved Nitrite (N)	mg/L	<0.0030	N/A	0.0030	<0.0030	0.0030	5928836
Dissolved Nitrate (N)	mg/L	0.31	N/A	0.0030	0.48	0.0030	5928836

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly
(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam Job #: B251135
Report Date: 2012/06/18

ALBERTA ENVIRONMENT
Client Project #: ABSR34

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		DR7705	DR7705		DR7706		
Sampling Date		2012/06/15 09:45	2012/06/15 09:45		2012/06/15 12:46		
	UNITS	**12SWE04843**	**12SWE04843 Lab-Dup**	**RDL**	**12SWE04847**	**RDL**	**QC Batch**
Physical Properties							
True Colour	PtCo units	32	N/A	2.0	32	2.0	5929296
Physical Properties							
Turbidity	NTU	860	N/A	0.10	>1000 (1)	0.10	5928783

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Sample contains sediment

Maxxam Job #: B251135
Report Date: 2012/06/18

ALBERTA ENVIRONMENT
Client Project #: ABSR34

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		DR7705	DR7706		
Sampling Date		2012/06/15 09:45	2012/06/15 12:46		
	UNITS	**12SWE04843**	**12SWE04847**	**RDL**	**QC Batch**
Elements					
Dissolved Calcium (Ca)	mg/L	39	39	0.30	5928885
Dissolved Iron (Fe)	mg/L	0.072	0.11	0.060	5928885
Dissolved Magnesium (Mg)	mg/L	11	13	0.20	5928885
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	5928885
Dissolved Potassium (K)	mg/L	2.4	2.6	0.30	5928885
Dissolved Sodium (Na)	mg/L	20	25	0.50	5928885

RDL = Reportable Detection Limit

Maxxam Job #: B251135
Report Date: 2012/06/18

ALBERTA ENVIRONMENT
Client Project #: ABSR34

Package 1	4.2°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Results relate only to the items tested.

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB251135

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5928204	BE3	Spiked Blank	Alkalinity (Total as CaCO3)	2012/06/16		96	%	80 - 120
		Method Blank	Alkalinity (PP as CaCO3)	2012/06/16	<0.50		mg/L	
			Alkalinity (Total as CaCO3)	2012/06/16	<0.50		mg/L	
			Bicarbonate (HCO3)	2012/06/16	<0.50		mg/L	
			Carbonate (CO3)	2012/06/16	<0.50		mg/L	
			Hydroxide (OH)	2012/06/16	<0.50		mg/L	
		RPD	Alkalinity (PP as CaCO3)	2012/06/16	NC		%	20
			Alkalinity (Total as CaCO3)	2012/06/16	2.3		%	20
			Bicarbonate (HCO3)	2012/06/16	2.3		%	20
			Carbonate (CO3)	2012/06/16	NC		%	20
			Hydroxide (OH)	2012/06/16	NC		%	20
5928207	BE3	Spiked Blank	Conductivity	2012/06/16		99	%	90 - 110
		Method Blank	Conductivity	2012/06/16	<1.0		uS/cm	
		RPD	Conductivity	2012/06/16	1.2		%	20
5928208	BE3	Spiked Blank	pH	2012/06/16		100	%	97 - 102
		RPD	pH	2012/06/16	0.3		%	5
5928209	BE3	Matrix Spike	Dissolved Fluoride (F)	2012/06/16		NC	%	80 - 120
		Spiked Blank	Dissolved Fluoride (F)	2012/06/16		101	%	80 - 120
		Method Blank	Dissolved Fluoride (F)	2012/06/16	<0.050		mg/L	
		RPD	Dissolved Fluoride (F)	2012/06/16	1.4		%	20
5928779	HE1	Spiked Blank	Total Dissolved Solids	2012/06/17		92	%	80 - 113
		Method Blank	Total Dissolved Solids	2012/06/17	<10		mg/L	
		RPD	Total Dissolved Solids	2012/06/17	0.6		%	20
5928780	HE1	Spiked Blank	Total Suspended Solids	2012/06/17		90	%	81 - 105
		Method Blank	Total Suspended Solids	2012/06/17	<1.0		mg/L	
		RPD	Total Suspended Solids	2012/06/17	8.7		%	20
5928783	HE1	Spiked Blank	Turbidity	2012/06/17		98	%	93 - 99
		Method Blank	Turbidity	2012/06/17	<0.10		NTU	
		RPD	Turbidity	2012/06/17	9.5		%	20
5928836	RP0	Matrix Spike	Dissolved Nitrite (N)	2012/06/17		98	%	80 - 120
			Dissolved Nitrate (N)	2012/06/17		101	%	80 - 120
		Spiked Blank	Dissolved Nitrite (N)	2012/06/17		100	%	90 - 110
			Dissolved Nitrate (N)	2012/06/17		101	%	90 - 110
		Method Blank	Dissolved Nitrite (N)	2012/06/17	<0.0030		mg/L	
			Dissolved Nitrate (N)	2012/06/17	<0.0030		mg/L	
		RPD	Dissolved Nitrite (N)	2012/06/17	NC		%	20
			Dissolved Nitrate (N)	2012/06/17	NC		%	20
5928885	STI	Matrix Spike	Dissolved Calcium (Ca)	2012/06/18		97	%	80 - 120
			Dissolved Iron (Fe)	2012/06/18		91	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/18		101	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/18		97	%	80 - 120
			Dissolved Potassium (K)	2012/06/18		100	%	80 - 120
			Dissolved Sodium (Na)	2012/06/18		95	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2012/06/17		102	%	80 - 120
			Dissolved Iron (Fe)	2012/06/17		100	%	80 - 120
			Dissolved Magnesium (Mg)	2012/06/17		104	%	80 - 120
			Dissolved Manganese (Mn)	2012/06/17		99	%	80 - 120
			Dissolved Potassium (K)	2012/06/17		105	%	80 - 120
			Dissolved Sodium (Na)	2012/06/17		96	%	80 - 120
		Method Blank	Dissolved Calcium (Ca)	2012/06/17	<0.30		mg/L	
			Dissolved Iron (Fe)	2012/06/17	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2012/06/17	<0.20		mg/L	
			Dissolved Manganese (Mn)	2012/06/17	<0.0040		mg/L	
			Dissolved Potassium (K)	2012/06/17	<0.30		mg/L	
			Dissolved Sodium (Na)	2012/06/17	<0.50		mg/L	

ALBERTA ENVIRONMENT
Attention: CHRIS TEICHREB
Client Project #: ABSR34
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB251135

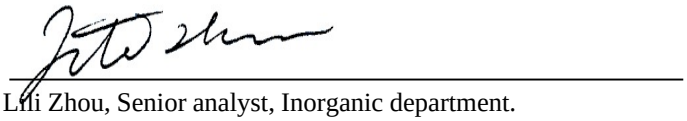
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
5928885	STI	RPD	Dissolved Calcium (Ca)	2012/06/17	0.5		%	20
			Dissolved Iron (Fe)	2012/06/17	NC		%	20
			Dissolved Magnesium (Mg)	2012/06/17	0.2		%	20
			Dissolved Manganese (Mn)	2012/06/17	NC		%	20
			Dissolved Potassium (K)	2012/06/17	NC		%	20
			Dissolved Sodium (Na)	2012/06/17	0.6		%	20
5929296	ZI	Spiked Blank	True Colour	2012/06/18		96	%	90 - 110
		Method Blank	True Colour	2012/06/18	<2.0		PtCo units	
		RPD	True Colour	2012/06/18	NC		%	20
5929613	ZI	Matrix Spike	Dissolved Chloride (Cl)	2012/06/18		107	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2012/06/18		104	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2012/06/18	<1.0		mg/L	
		RPD	Dissolved Chloride (Cl)	2012/06/18	7.8		%	20
5929616	IA0	Matrix Spike	Total Ammonia (N)	2012/06/18		102	%	80 - 120
		Spiked Blank	Total Ammonia (N)	2012/06/18		116	%	80 - 120
		Method Blank	Total Ammonia (N)	2012/06/18	<0.050		mg/L	
		RPD	Total Ammonia (N)	2012/06/18	NC		%	20
5929617	ZI	Matrix Spike	Dissolved Sulphate (SO4)	2012/06/18		104	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2012/06/18		102	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2012/06/18	<1.0		mg/L	
		RPD	Dissolved Sulphate (SO4)	2012/06/18	NC		%	20
5929871	AP1	Matrix Spike	Dissolved Organic Carbon (C)	2012/06/18		115	%	80 - 120
		Spiked Blank	Dissolved Organic Carbon (C)	2012/06/18		112	%	84 - 120
		Method Blank	Dissolved Organic Carbon (C)	2012/06/18	<0.50		mg/L	
		RPD	Dissolved Organic Carbon (C)	2012/06/18	NC		%	20
5929873	AP1	Matrix Spike [DR7705-01]	Total Organic Carbon (C)	2012/06/18		NC	%	80 - 120
		Spiked Blank	Total Organic Carbon (C)	2012/06/18		114	%	84 - 120
		Method Blank	Total Organic Carbon (C)	2012/06/18	<0.50		mg/L	
		RPD [DR7705-01]	Total Organic Carbon (C)	2012/06/18	8.8		%	20
5930669	IA0	Matrix Spike	Dissolved Phosphate (P)	2012/06/18		100	%	80 - 120
		QC Standard	Dissolved Phosphate (P)	2012/06/18		94	%	80 - 120
		Spiked Blank	Dissolved Phosphate (P)	2012/06/18		101	%	83 - 111
		Method Blank	Dissolved Phosphate (P)	2012/06/18	<0.0030		mg/L	
		RPD	Dissolved Phosphate (P)	2012/06/18	NC		%	20
5930748	IA0	Matrix Spike	Total Phosphate (P)	2012/06/18		106	%	80 - 120
		QC Standard	Total Phosphate (P)	2012/06/18		94	%	80 - 120
		Spiked Blank	Total Phosphate (P)	2012/06/18		98	%	83 - 111
		Method Blank	Total Phosphate (P)	2012/06/18	<0.0030		mg/L	
		RPD	Total Phosphate (P)	2012/06/18	9.7		%	20
5931345	IA0	Matrix Spike	Total Kjeldahl Nitrogen	2012/06/18		NC	%	80 - 120
		QC Standard	Total Kjeldahl Nitrogen	2012/06/18		100	%	75 - 125
		Spiked Blank	Total Kjeldahl Nitrogen	2012/06/18		119	%	80 - 120
		Method Blank	Total Kjeldahl Nitrogen	2012/06/18	<0.050		mg/L	
		RPD	Total Kjeldahl Nitrogen	2012/06/18	7.9		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B251135

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Lili Zhou, Senior analyst, Inorganic department.

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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. For Service Group specific validation please refer to the Validation Signature Page.

maxxam ANALYTICS INC

B251135

Calgary: 4000 -19 Street NE, T2E 6P8 Ph: (403) 291-3650, Fax: (403) 291-3673, Toll free: (800) 386-7247
Edmonton: 9331 - 48 Street, T6B 2R4. Ph: (780) 465-1212, Fax: (780) 450-4187, Toll free: (877) 465-8889

Maxxam Quote #	A90511
Maxxam Group	RM
Maxxam Lab #	
Project Tech. Name:	Sarah Hustins
Project Tech. Phone:	780-422-4217 (main)
	780-203-2096 (cell)

12SW E04843 — Sample Number
Group Sample Number
ABO5CE0009 — Station / Transect Number
ABSR34 — Project Number
Station Descrip/Comment: **Red Deer River at Morrin Bridge**
Sample Date: 15 JUN 2012 (Day / Month / Year) Time: 0945 MST
Samplers ID1: 6T4418 ID2: 232627
2 1 1 — Agency; 0 — Matrix; 0 1 — Type; 0 1 6 — Collection

Invoice and Results To:
Name: Chris Teichreb
Address: #304, 4920-51st.
City/Prov: Red Deer, Alberta
Postal Code: T4N 6K8
Email:

Customer Service Rep's
Jesse Bourque -Calgary 403-735-2205
Tanya Eugene-Edmonton 780-577-7144

☐ **WATPOT** T-Alk, pp-Alk, HCO_3, CO_3, OH, pH, Conductivity, Hardness, Ion Sum, Ion Balance, Dissolved (Ca, Mg, K, Fe, Na & Mn), Cl, SO_4, NO_3-N (Nitrate), NO_2-N (Nitrite), NO_3-N + NO_2-N, TDS (Calc), Flouride, Turbidity

ROUTINE unfiltered / unpreserved (500ml. Plastic)
- ☐ Calcium
- ☐ Magnesium
- ☐ Sodium
- ☐ Potassium
- ☐ Chloride
- ☐ Sulphate
- ☐ Alkalinity
- ☐ pH
- ☐ T. Hardness (Ca, Mg)
- ☐ Conductivity
- ☐ TDS (calc)
- ☐ Ion Balance
- ☐ Silica
- ☐ Flouride
- ☐ TIC
- ☐ DIC
- ☐ True Color

G-1 unfiltered / unpreserved (250ml. Plastic)
- ☐ Tann & Lig
- ☐ Turbidity
- ☐ TDS (FR)
- ☐ TSS (NFR)
- ☐ Total Solids (calc)
- ☐ Total Solids

G2 unfiltered / preserved (250ml. Plastic) (2ml 50% H_2SO_4)
- ☐ Total Phosphate
- ☐ TKN
- ☐ NH3-N
- ☐ COD
- ☐ Organic Nitrogen
- ☐ TOC

G2-F unfiltered / unpreserved (250ml. Plastic)
- ☐ Dissolved Phosphorus
- ☐ DKN
- ☐ DOC

N unfiltered / unpreserved (60ml Plastic)
- ☐ NO_2 (Nitrite)
- ☐ NO_3 (Nitrate)
- ☐ NO_2+NO_3-N

☐ **Hexavalent Chromium** unfiltered / preserved (60ml. Plastic) (1ml 10N NaOH)

☐ **CYANIDE** unfiltered / preserved (250ml. Plastic) (1ml 10N NaOH)

☐ **SULPHIDE** unfiltered / preserved (250ml. Plastic) (1ml 2N ZnAc & 1ml 10N NaOH)

☐ **OIL & GREASE** unfiltered / preserved (500ml. Amber Glass) (2ml 50% H_2SO_4)

☐ **BOD** unfiltered / unpreserved (500ml. Plastic)

☐ **AOX** unfiltered / preserved (500ml Amber Glass) (2ml 50% HNO_3)

2012/06/15
Helen Day 18:10

3.4/6.1/3.2

COMMENTS

Received By: _____ Date: ____ / ____ / ____ (Day / Month / Year)

Maxxam analytics inc

B251135

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Edmonton: 9331 - 48 Street, T6B 2R4. Ph: (780) 465-1212, Fax: (780) 450-4187, Toll free: (877) 465-8889

12SWE04847 — Sample Number
Group Sample Number
ABO5CJ0070 — Station / Transect Number
ABSR34 — Project Number
Station Descrip/Comment: **Red Deer River at Hwy 884 near Jenner**

Sample Date: 15 (Day) Jun (Month) 2012 (Year) Time: 1216 MST
Samplers ID1: 2219727 ID2:
211 — Agency; 0 — Matrix; 01 — Type; 016 — Collection

Maxxam Quote # A90511
Maxxam Group RM
Maxxam Lab #

Project Tech. Name: Sarah Hustins
Project Tech. Phone: 780-422-4217 (main)
780-203-2096 (cell)

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Jesse Bourque -Calgary 403-735-2205
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☐ **WATPOT** T-Alk, pp-Alk, HCO_3, CO_3, OH, pH, Conductivity, Hardness, Ion Sum, Ion Balance, Dissolved (Ca, Mg, K, Fe, Na & Mn), Cl, SO_4, NO_3-N (Nitrate), NO_2-N (Nitrite), NO_3-N + NO_2-N, TDS (Calc), Flouride, Turbidity

ROUTINE unfiltered / unpreserved
(500ml. Plastic)
- ☐ Calcium
- ☐ Magnesium
- ☐ Sodium
- ☐ Potassium
- ☐ Chloride
- ☐ Sulphate
- ☐ Alkalinity
- ☐ pH
- ☐ T. Hardness (Ca, Mg)
- ☐ Conductivity
- ☐ TDS (calc)
- ☐ Ion Balance
- ☐ Silica
- ☐ Flouride
- ☐ TIC
- ☐ DIC
- ☐ True Color

G-1 unfiltered / unpreserved
(250ml. Plastic)
- ☐ Tann & Lig
- ☐ Turbidity
- ☐ TDS (FR)
- ☐ TSS (NFR)
- ☐ Total Solids (calc)
- ☐ Total Solids

G2 unfiltered / preserved
(250ml. Plastic)
(2ml 50% H_2SO_4)
- ☐ Total Phosphate
- ☐ TKN
- ☐ NH3-N
- ☐ COD
- ☐ Organic Nitrogen
- ☐ TOC

G2-F unfiltered / unpreserved
(250ml. Plastic)
- ☐ Dissolved Phosphorus
- ☐ DKN
- ☐ DOC

N unfiltered / unpreserved
(60ml Plastic)
- ☐ NO_2 (Nitrite)
- ☐ NO_3 (Nitrate)
- ☐ NO_2+NO_3-N

☐ **Hexavalent Chromium** unfiltered / preserved
(60ml. Plastic)
(1ml 10N NaOH)

☐ **CYANIDE** unfiltered / preserved
(250ml. Plastic)
(1ml 10N NaOH)

☐ **SULPHIDE** unfiltered / preserved
(250ml. Plastic)
(1ml 2N ZnAc & 1ml 10N NaOH)

☐ **OIL & GREASE** unfiltered / preserved
(500ml. Amber Glass)
(2ml 50% H_2SO_4)

☐ **BOD** unfiltered / unpreserved
(500ml. Plastic)

☐ **AOX** unfiltered / preserved
(500ml Amber Glass)
(2ml 50% HNO_3)

Please filter G2F

2012/06/15
Hold Dy 1810
3.4/6.1/3.2

COMMENTS

Received By: _____ Date: ___/___/___ (Day / Month / Year)

Sample No:12SWC80601 Group Sample No:

Station No: AB05CB0390 Project No. ABS095

Site Descrip: GLENNIFER LAKE; EAST PROFILE 1A

DD-MON-YYYY

Sample Date: 08 - JUN-2012 Time: [illegible] MST
Samplers ID1: 65139 ID2:
Agency: 211 SampMatrix: 0
SampType: 1 Collection: 17

End Date: _ Time: _ MST

Sample Depth: M