



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-001
Client Sample ID: T2/MA-10 (0-2)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	7.6	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	1.40	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.71	meq/L		0.01		ASA10-3	06/21/04 13:00 / jd
Saturation	43.6	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	0.7	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	5.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jd
SATURATED PASTE							
Calcium, Saturated Paste	8.29	meq/l		0.05		SW6010B	06/21/04 12:08 / jd
Magnesium, Saturated Paste	4.35	meq/l		0.08		SW6010B	06/21/04 12:08 / jd
Sodium, Saturated Paste	1.66	meq/l		0.04		SW6010B	06/21/04 12:08 / jd
PHYSICAL CHARACTERISTICS							
Sand	30	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	48	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	22	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	24.7	meq/100g		0.09		SW6010B	06/09/04 10:50 / rp
Exchangeable Sodium Percentage	1.8	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	8.1	wt%		0.1		USDA23c	06/28/04 07:41 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.53	meq/100g		0.04		SW6010B	06/14/04 12:39 / rp

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-002
Client Sample ID: T2/MA-10 (0-6)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	7.7	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.73	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.71	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	43.1	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	0.6	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
Nitrate as N, Saturated Paste	36.3	mg/L		0.6		ASA10-3	06/15/04 11:35 / cwh
Sulfate, Saturated Paste	1.76	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
SATURATED PASTE							
Calcium, Saturated Paste	3.51	meq/l		0.05		SW6010B	06/21/04 12:11 / jdh
Magnesium, Saturated Paste	1.67	meq/l		0.08		SW6010B	06/21/04 12:11 / jdh
Sodium, Saturated Paste	1.01	meq/l		0.04		SW6010B	06/21/04 12:11 / jdh
PHYSICAL CHARACTERISTICS							
Sand	28	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Silt	50	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Clay	22	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Texture	SIL	unitless				ASA15-5	06/20/04 13:00 / rp
CHEMICAL CHARACTERISTICS							
Fluoride	ND	mg/kg		1.0		A4500-F C	06/17/04 13:00 / ddb
Organic Matter	2.30	wt%		0.02		ASA29-3	06/28/04 07:41 / rp
Cation Exchange Capacity	24.4	meq/100g		0.09		SW6010B	06/09/04 10:53 / rp
Exchangeable Sodium Percentage	1.8	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	10.7	wt%		0.1		USDA23c	06/28/04 07:41 / rp
Phosphorus	21	mg/kg		0.1		ASA24-5	06/24/04 05:10 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	387	mg/kg		1		SW6010B	06/14/04 12:42 / rp
Sodium, Extractable	0.49	meq/100g		0.04		SW6010B	06/14/04 12:42 / rp
METALS, WATER EXTRACTABLE							
Selenium	0.073	mg/kg		0.010		SW6020	06/28/04 12:11 / car
METALS, DTPA EXTRACTABLE							
Zinc	0.75	mg/kg		0.02		SW6010B	06/16/04 02:16 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-002
Client Sample ID: T2/MA-10 (0-6)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
METALS, CACL2 EXTRACTABLE							
Barium	9.8	mg/L		0.001		SW6010B	06/16/04 12:22 / rp
Boron	1.3	mg/L		0.04		SW6010B	06/16/04 12:22 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-003
Client Sample ID: T2/MA-10 (6-12)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	7.8	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.53	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	2.12	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	43.4	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	0.9	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
Nitrate as N, Saturated Paste	10.2	mg/L		0.6		ASA10-3	06/15/04 11:37 / cwh
Sulfate, Saturated Paste	1.94	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
SATURATED PASTE							
Calcium, Saturated Paste	2.73	meq/l		0.05		SW6010B	06/21/04 12:14 / jdh
Magnesium, Saturated Paste	1.51	meq/l		0.08		SW6010B	06/21/04 12:14 / jdh
Sodium, Saturated Paste	1.36	meq/l		0.04		SW6010B	06/21/04 12:14 / jdh
PHYSICAL CHARACTERISTICS							
Sand	25	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	51	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	24	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	SiL	unitless				ASA15-5	06/28/04 07:41 / rp
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	21.1	meq/100g		0.09		SW6010B	06/09/04 10:56 / rp
Exchangeable Sodium Percentage	2.4	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	8.8	wt%		0.1		USDA23c	06/28/04 07:41 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.57	meq/100g		0.04		SW6010B	06/14/04 12:45 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-004
Client Sample ID: T2/MA-10 (12-24)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	8.0	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	1.08	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	1.55	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	44.6	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	1.7	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
Nitrate as N, Saturated Paste	18.2	mg/L		0.6		ASA10-3	06/15/04 11:39 / cwh
Sulfate, Saturated Paste	6.41	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
SATURATED PASTE							
Calcium, Saturated Paste	3.62	meq/l		0.05		SW6010B	06/21/04 12:17 / jdh
Magnesium, Saturated Paste	4.01	meq/l		0.08		SW6010B	06/21/04 12:17 / jdh
Sodium, Saturated Paste	3.33	meq/l		0.04		SW6010B	06/21/04 12:17 / jdh
PHYSICAL CHARACTERISTICS							
Sand	21	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	55	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	24	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	SiL	unitless				ASA15-5	06/28/04 07:41 / rp
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	23.4	meq/100g		0.09		SW6010B	06/09/04 10:59 / rp
Exchangeable Sodium Percentage	2.9	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	10.8	wt%		0.1		USDA23c	06/28/04 07:41 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.83	meq/100g		0.04		SW6010B	06/14/04 12:48 / rp

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-005
Client Sample ID: T2/MA-10 (24-36)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	7.9	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	6.10	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.71	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	45.8	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	3.0	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	2.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	22.5	meq/l		0.05		SW6010B	06/21/04 12:20 / jdh
Magnesium, Saturated Paste	48.8	meq/l		0.08		SW6010B	06/21/04 12:20 / jdh
Sodium, Saturated Paste	18.2	meq/l		0.04		SW6010B	06/21/04 12:20 / jdh
PHYSICAL CHARACTERISTICS							
Sand	26	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	51	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	23	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	SiL	unitless				ASA15-5	06/28/04 07:41 / rp
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	21.4	meq/100g		0.09		SW6010B	06/09/04 11:02 / rp
Exchangeable Sodium Percentage	3.5	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	9.8	wt%		0.1		USDA23c	06/28/04 07:41 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.58	meq/100g		0.04		SW6010B	06/14/04 12:51 / rp

Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-006
Client Sample ID: T2/MA-10 (36-60)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	8.1	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	3.51	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.56	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdH
Saturation	40.7	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	3.0	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	2.2	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdH
SATURATED PASTE							
Calcium, Saturated Paste	7.13	meq/l		0.05		SW6010B	06/21/04 12:23 / jdH
Magnesium, Saturated Paste	21.1	meq/l		0.08		SW6010B	06/21/04 12:23 / jdH
Sodium, Saturated Paste	11.2	meq/l		0.04		SW6010B	06/21/04 12:23 / jdH
PHYSICAL CHARACTERISTICS							
Sand	36	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	43	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	21	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
CHEMICAL CHARACTERISTICS							
Fluoride	1.2	mg/kg		1.0		A4500-F C	06/17/04 13:00 / ddb
Cation Exchange Capacity	19.2	meq/100g		0.09		SW6010B	06/09/04 11:05 / rp
Exchangeable Sodium Percentage	4.1	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	10.9	wt%		0.1		USDA23c	06/28/04 07:41 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.24	meq/100g		0.04		SW6010B	06/14/04 01:00 / rp
METALS, WATER EXTRACTABLE							
Selenium	0.098	mg/kg		0.010		SW6020	06/28/04 12:15 / car
METALS, CaCl2 EXTRACTABLE							
Barium	1.2	mg/L		0.001		SW6010B	06/16/04 12:25 / rp
Boron	1.3	mg/L		0.04		SW6010B	06/16/04 12:25 / rp

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2 Spring 2004
Lab ID: H04050024-007
Client Sample ID: T2/MA-10 (60-96)

Report Date: 07/04/04
Collection Date: 04/30/04 09:30
Date Received: 05/04/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, Saturated Paste	8.1	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.82	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.42	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	30.4	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	2.0	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	2.8	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	2.26	meq/l		0.05		SW6010B	06/21/04 12:26 / jdh
Magnesium, Saturated Paste	2.96	meq/l		0.08		SW6010B	06/21/04 12:26 / jdh
Sodium, Saturated Paste	3.18	meq/l		0.04		SW6010B	06/21/04 12:26 / jdh
PHYSICAL CHARACTERISTICS							
Sand	57	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	28	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	15	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	SL	unitless				ASA15-5	06/28/04 07:41 / rp
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	14.4	meq/100g		0.09		SW6010B	06/09/04 11:08 / rp
Exchangeable Sodium Percentage	4.4	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	9.4	wt%		0.1		USDA23c	06/28/04 07:41 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.74	meq/100g		0.04		SW6010B	06/14/04 01:03 / rp

Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.