



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2 Spring 2004  
**Lab ID:** H04050024-008  
**Client Sample ID:** T2/MB-10 (0-2)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 10:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.7	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.62	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	40.9	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	4.4	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	2.86	meq/l		0.05		SW6010B	06/21/04 12:29 / jdh
Magnesium, Saturated Paste	2.40	meq/l		0.08		SW6010B	06/21/04 12:29 / jdh
Sodium, Saturated Paste	0.98	meq/l		0.04		SW6010B	06/21/04 12:29 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	27	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	45	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	28	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	CL	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	24.8	meq/100g		0.09		SW6010B	06/09/04 11:11 / rp
Exchangeable Sodium Percentage	1.8	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	1.1	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.48	meq/100g		0.04		SW6010B	06/14/04 01:06 / 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: H04050024-009  
Client Sample ID: T2/MB-10 (0-6)

Report Date: 07/04/04  
Collection Date: 04/30/04 10:30  
Date Received: 05/04/04  
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.6	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.55	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	43.0	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	0.8	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdH
Nitrate as N, Saturated Paste	14.0	mg/L		0.6		ASA10-3	06/15/04 11:41 / cwh
Sulfate, Saturated Paste	2.16	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	2.60	meq/l		0.05		SW6010B	06/21/04 12:32 / jdH
Magnesium, Saturated Paste	2.06	meq/l		0.08		SW6010B	06/21/04 12:32 / jdH
Sodium, Saturated Paste	1.15	meq/l		0.04		SW6010B	06/21/04 12:32 / jdH
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	24	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Silt	46	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Clay	30	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Texture	CL	unitless				ASA15-5	06/20/04 13:00 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	ND	mg/kg		1.0		A4500-F C	06/17/04 13:00 / ddb
Organic Matter	1.40	wt%		0.02		ASA29-3	06/28/04 07:41 / rp
Cation Exchange Capacity	24.2	meq/100g		0.09		SW6010B	06/09/04 11:14 / rp
Exchangeable Sodium Percentage	4.6	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	1.6	wt%		0.1		USDA23c	06/28/04 07:41 / rp
Phosphorus	7.0	mg/kg		0.1		ASA24-5	06/24/04 05:12 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Potassium	314	mg/kg		1		SW6010B	06/14/04 01:09 / rp
Sodium, Extractable	1.15	meq/100g		0.04		SW6010B	06/14/04 01:09 / rp
<b>METALS, WATER EXTRACTABLE</b>							
Selenium	0.057	mg/kg		0.010		SW6020	06/28/04 12:19 / car
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.12	mg/kg		0.02		SW6010B	06/16/04 02:20 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP  
Project: Tongue River Monitoring Tier 2 Spring 2004  
Lab ID: H04050024-009  
Client Sample ID: T2/MB-10 (0-6)

Report Date: 07/04/04  
Collection Date: 04/30/04 10:30  
Date Received: 05/04/04  
Matrix: Soil

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Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>METALS, CACL2 EXTRACTABLE</b>							
Barium	8.6	mg/L		0.001		SW6010B	06/16/04 12:28 / rp
Boron	1.2	mg/L		0.04		SW6010B	06/16/04 12:28 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2 Spring 2004  
**Lab ID:** H04050024-010  
**Client Sample ID:** T2/MB-10 (6-12)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 10:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.9	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.74	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	47.8	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	28.1	mg/L		0.6		ASA10-3	06/15/04 11:43 / cwh
Sulfate, Saturated Paste	3.23	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	2.75	meq/l		0.05		SW6010B	06/21/04 12:41 / jdh
Magnesium, Saturated Paste	2.33	meq/l		0.08		SW6010B	06/21/04 12:41 / jdh
Sodium, Saturated Paste	1.49	meq/l		0.04		SW6010B	06/21/04 12:41 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	21	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	42	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	37	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	CL	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	28.5	meq/100g		0.09		SW6010B	06/09/04 11:23 / rp
Exchangeable Sodium Percentage	2.4	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	4.7	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.76	meq/100g		0.04		SW6010B	06/14/04 01:11 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2 Spring 2004  
**Lab ID:** H04050024-011  
**Client Sample ID:** T2/MB-10 (12-24)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 10:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	8.1	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.58	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.28	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	48.7	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	1.5	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.0	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
Nitrate as N, Saturated Paste	4.4	mg/L		0.6		ASA10-3	06/15/04 11:47 / cwh
Sulfate, Saturated Paste	3.72	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	1.86	meq/l		0.05		SW6010B	06/21/04 12:47 / jdh
Magnesium, Saturated Paste	1.93	meq/l		0.08		SW6010B	06/21/04 12:47 / jdh
Sodium, Saturated Paste	2.10	meq/l		0.04		SW6010B	06/21/04 12:47 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	16	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	47	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	37	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	SiCL	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	24.7	meq/100g		0.09		SW6010B	06/09/04 11:29 / rp
Exchangeable Sodium Percentage	3.3	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	10.6	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.92	meq/100g		0.04		SW6010B	06/14/04 01:17 / 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:** H04050024-012  
**Client Sample ID:** T2/MB-10 (24-36)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 10:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	8.1	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	1.26	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.28	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	46.5	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	2.8	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	2.4	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.11	meq/l		0.05		SW6010B	06/21/04 12:50 / jdh
Magnesium, Saturated Paste	5.50	meq/l		0.08		SW6010B	06/21/04 12:50 / jdh
Sodium, Saturated Paste	6.07	meq/l		0.04		SW6010B	06/21/04 12:50 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	30	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	40	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	30	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	CL	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	22.9	meq/100g		0.09		SW6010B	06/09/04 11:32 / rp
Exchangeable Sodium Percentage	4.4	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	10.8	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.29	meq/100g		0.04		SW6010B	06/14/04 01:20 / 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:** H04050024-013  
**Client Sample ID:** T2/MB-10 (36-60)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 10:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.9	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	3.95	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	47.0	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	1.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	22.6	meq/l		0.05		SW6010B	06/21/04 12:53 / jdh
Magnesium, Saturated Paste	23.0	meq/l		0.08		SW6010B	06/21/04 12:53 / jdh
Sodium, Saturated Paste	8.34	meq/l		0.04		SW6010B	06/21/04 12:53 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	29	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	28	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	CL	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	1.2	mg/kg		1.0		A4500-F C	06/17/04 13:00 / ddb
Cation Exchange Capacity	20.8	meq/100g		0.09		SW6010B	06/09/04 11:35 / rp
Exchangeable Sodium Percentage	4.6	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	7.1	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.35	meq/100g		0.04		SW6010B	06/14/04 01:23 / rp
<b>METALS, WATER EXTRACTABLE</b>							
Selenium	0.081	mg/kg		0.010		SW6020	06/28/04 12:40 / car
<b>METALS, CaCl2 EXTRACTABLE</b>							
Barium	0.60	mg/L		0.001		SW6010B	06/16/04 12:31 / rp
Boron	1.2	mg/L		0.04		SW6010B	06/16/04 12:31 / 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:** H04050024-014  
**Client Sample ID:** T2/MB-10 (60-96)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 10:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.8	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	3.71	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.14	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	42.8	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	1.8	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	1.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	24.6	meq/l		0.05		SW6010B	06/21/04 12:56 / jdh
Magnesium, Saturated Paste	22.6	meq/l		0.08		SW6010B	06/21/04 12:56 / jdh
Sodium, Saturated Paste	8.67	meq/l		0.04		SW6010B	06/21/04 12:56 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	38	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	36	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	26	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	20.2	meq/100g		0.09		SW6010B	06/09/04 11:37 / rp
Exchangeable Sodium Percentage	4.3	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	5.8	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.24	meq/100g		0.04		SW6010B	06/14/04 01:26 / rp

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