



LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring Tier 2  
 Lab ID: H04100167-047  
 Client Sample ID: T2/BA-10-(0-6")

Report Date: 11/22/04  
 Collection Date: 10/13/04 17:00  
 Date Received: 10/20/04  
 Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.5	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.33	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	47.7	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.6	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.8	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	35.9	mg/L		0.2		ASA10-3	11/10/04 13:08 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	5.55	meq/l		0.05		SW6010B	11/04/04 01:46 / rp
Magnesium, Saturated Paste	2.86	meq/l		0.08		SW6010B	11/04/04 01:46 / rp
Sodium, Saturated Paste	3.24	meq/l		0.04		SW6010B	11/04/04 01:46 / rp
Sulfate, Saturated Paste	2.57	meq/l		0.002		SW6010B	11/04/04 01:46 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	22	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	55	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	23	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	1.2	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Potassium, NH4OAc Extractable	174	mg/kg		1		ASA13-3	11/22/04 13:00 / jdh
Organic Matter	2.10	%		0.02		ASA29-3	11/22/04 07:49 / jdh
Cation Exchange Capacity	21.4	meq/100g		0.09		SW6010B	11/09/04 04:26 / rp
Lime as CaCO3	5.8	%		0.1		USDA23c	11/09/04 00:00 / jdh
Phosphorus	14	mg/kg		0.1		ASA24-5	11/12/04 07:31 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.69	meq/100g		0.04		SW6010B	11/08/04 01:48 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.5	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.5	%		0.1		USDA20a	11/22/04 07:49 / jdh
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.51	mg/kg		0.02		SW6010B	11/09/04 11:21 / rp
<b>METALS, CaCL2 EXTRACTABLE</b>							
Barium	6.9	mg/L		0.04		SW6010B	11/09/04 09:45 / 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  
Lab ID: H04100167-047  
Client Sample ID: T2/BA-10-(0-6")

Report Date: 11/22/04  
Collection Date: 10/13/04 17:00  
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Matrix: Soil

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Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>METALS, CACL2 EXTRACTABLE</b>							
Boron	1.6	mg/L		0.04		SW6010B	11/09/04 09:45 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 09:45 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-048  
**Client Sample ID:** T2/BA-10-(6-12")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.6	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.12	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	46.8	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.9	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.8	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	20.0	mg/L		0.2		ASA10-3	11/10/04 13:10 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.73	meq/l		0.05		SW6010B	11/04/04 01:49 / rp
Magnesium, Saturated Paste	2.85	meq/l		0.08		SW6010B	11/04/04 01:49 / rp
Sodium, Saturated Paste	3.70	meq/l		0.04		SW6010B	11/04/04 01:49 / rp
Sulfate, Saturated Paste	4.91	meq/l		0.002		SW6010B	11/04/04 01:49 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	23	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	55	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	22	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	20.8	meq/100g		0.09		SW6010B	11/09/04 04:29 / rp
Lime as CaCO3	6.2	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.77	meq/100g		0.04		SW6010B	11/08/04 01:51 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.9	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-049  
**Client Sample ID:** T2/BA-10-(12-24")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.6	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.75	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	42.0	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	2.8	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.8	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	30.9	mg/L		0.2		ASA10-3	11/10/04 13:12 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	5.97	meq/l		0.05		SW6010B	11/04/04 01:52 / rp
Magnesium, Saturated Paste	4.61	meq/l		0.08		SW6010B	11/04/04 01:52 / rp
Sodium, Saturated Paste	6.32	meq/l		0.04		SW6010B	11/04/04 01:52 / rp
Sulfate, Saturated Paste	10.3	meq/l		0.002		SW6010B	11/04/04 01:52 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	29	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	52	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	19	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	16.6	meq/100g		0.09		SW6010B	11/09/04 04:32 / rp
Lime as CaCO3	6.5	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.08	meq/100g		0.04		SW6010B	11/08/04 01:54 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.8	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	4.9	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-050  
**Client Sample ID:** T2/BA-10-(24-36")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.76	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	36.8	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	3.0	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.6	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	5.36	meq/l		0.05		SW6010B	11/04/04 01:55 / rp
Magnesium, Saturated Paste	4.32	meq/l		0.08		SW6010B	11/04/04 01:55 / rp
Sodium, Saturated Paste	6.72	meq/l		0.04		SW6010B	11/04/04 01:55 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	45	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	41	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	14	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	13.4	meq/100g		0.09		SW6010B	11/09/04 04:35 / rp
Lime as CaCO3	5.8	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.02	meq/100g		0.04		SW6010B	11/08/04 01:57 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.8	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	5.7	%		0.1		USDA20a	11/22/04 07:49 / jdh

**Report** RL - Analyte reporting limit.  
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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-051  
**Client Sample ID:** T2/BA-10-(36-60")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.51	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	36.2	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	2.7	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.5	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.71	meq/l		0.05		SW6010B	11/04/04 02:01 / rp
Magnesium, Saturated Paste	3.60	meq/l		0.08		SW6010B	11/04/04 02:01 / rp
Sodium, Saturated Paste	5.46	meq/l		0.04		SW6010B	11/04/04 02:01 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	44	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	42	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	14	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	1.1	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Cation Exchange Capacity	12.3	meq/100g		0.09		SW6010B	11/09/04 04:41 / rp
Lime as CaCO3	6.3	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.84	meq/100g		0.04		SW6010B	11/08/04 02:02 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	5.2	%		0.1		USDA20a	11/22/04 07:49 / jdh
<b>METALS, CACL2 EXTRACTABLE</b>							
Barium	3.4	mg/L		0.04		SW6010B	11/09/04 09:48 / rp
Boron	1.6	mg/L		0.04		SW6010B	11/09/04 09:48 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 09:48 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-052  
**Client Sample ID:** T2/BA-10-(60-90")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.6	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.35	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	28.4	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	2.4	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.5	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.95	meq/l		0.05		SW6010B	11/04/04 02:04 / rp
Magnesium, Saturated Paste	3.20	meq/l		0.08		SW6010B	11/04/04 02:04 / rp
Sodium, Saturated Paste	4.79	meq/l		0.04		SW6010B	11/04/04 02:04 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	68	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	23	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	9.0	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	8.87	meq/100g		0.09		SW6010B	11/09/04 04:44 / rp
Lime as CaCO3	5.2	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.74	meq/100g		0.04		SW6010B	11/08/04 02:11 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	6.8	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-053  
**Client Sample ID:** T2/BA-10-(0-2")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.3	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	3.13	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	48.4	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.2	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	5.2	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	15.4	meq/l		0.05		SW6010B	11/04/04 02:07 / rp
Magnesium, Saturated Paste	7.97	meq/l		0.08		SW6010B	11/04/04 02:07 / rp
Sodium, Saturated Paste	4.09	meq/l		0.04		SW6010B	11/04/04 02:07 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	24	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	52	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	24	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	21.7	meq/100g		0.09		SW6010B	11/09/04 04:46 / rp
Lime as CaCO3	5.6	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.70	meq/100g		0.04		SW6010B	11/08/04 02:14 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.5	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.3	%		0.1		USDA20a	11/22/04 07:49 / jdh

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