



LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring Tier 2  
 Lab ID: H04100167-070  
 Client Sample ID: T2/YBA-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	7.6	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.37	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	49.3	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.8	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.7	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	34.2	mg/L		0.2		ASA10-3	11/10/04 13:30 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	6.43	meq/l		0.05		SW6010B	11/04/04 03:17 / rp
Magnesium, Saturated Paste	2.49	meq/l		0.08		SW6010B	11/04/04 03:17 / rp
Sodium, Saturated Paste	3.74	meq/l		0.04		SW6010B	11/04/04 03:17 / rp
Sulfate, Saturated Paste	4.20	meq/l		0.002		SW6010B	11/04/04 03:17 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	16	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	59	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	25	%		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	1.4	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Potassium, NH4OAc Extractable	166	mg/kg		1		ASA13-3	11/22/04 13:00 / jdh
Organic Matter	1.80	%		0.02		ASA29-3	11/22/04 07:49 / jdh
Cation Exchange Capacity	22.8	meq/100g		0.09		SW6010B	11/09/04 05:57 / rp
Lime as CaCO3	6.2	%		0.1		USDA23c	11/09/04 00:00 / jdh
Phosphorus	9.6	mg/kg		0.1		ASA24-5	11/12/04 07:44 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.85	meq/100g		0.04		SW6010B	11/08/04 03:13 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.7	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
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.55	mg/kg		0.02		SW6010B	11/09/04 11:30 / rp
<b>METALS, CaCL2 EXTRACTABLE</b>							
Barium	7.1	mg/L		0.04		SW6010B	11/09/04 10:09 / rp

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

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



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Client: AMPP  
Project: Tongue River Monitoring Tier 2  
Lab ID: H04100167-070  
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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	1.8	mg/L		0.04		SW6010B	11/09/04 10:09 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 10:09 / rp

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ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-071  
**Client Sample ID:** T2/YBA-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	1.07	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	49.2	%		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	4.0	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	25.2	mg/L		0.2		ASA10-3	11/10/04 13:32 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	5.47	meq/l		0.05		SW6010B	11/04/04 03:29 / rp
Magnesium, Saturated Paste	2.19	meq/l		0.08		SW6010B	11/04/04 03:29 / rp
Sodium, Saturated Paste	3.14	meq/l		0.04		SW6010B	11/04/04 03:29 / rp
Sulfate, Saturated Paste	4.02	meq/l		0.002		SW6010B	11/04/04 03:29 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	19	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	58	%		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>							
Cation Exchange Capacity	22.8	meq/100g		0.09		SW6010B	11/09/04 06:09 / rp
Lime as CaCO3	6.6	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.76	meq/100g		0.04		SW6010B	11/08/04 03:25 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.7	%		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:** H04100167-072  
**Client Sample ID:** T2/YBA-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	7.8	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.98	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	46.2	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	2.9	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.4	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	16.1	mg/L		0.1		ASA10-3	11/10/04 13:38 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	7.37	meq/l		0.05		SW6010B	11/04/04 03:32 / rp
Magnesium, Saturated Paste	4.88	meq/l		0.08		SW6010B	11/04/04 03:32 / rp
Sodium, Saturated Paste	7.22	meq/l		0.04		SW6010B	11/04/04 03:32 / rp
Sulfate, Saturated Paste	14.8	meq/l		0.002		SW6010B	11/04/04 03:32 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	18	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	61	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	21	%		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	19.6	meq/100g		0.09		SW6010B	11/09/04 06:12 / rp
Lime as CaCO3	7.2	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.20	meq/100g		0.04		SW6010B	11/08/04 03:28 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.9	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	4.4	%		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:** H04100167-073  
**Client Sample ID:** T2/YBA-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	7.9	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.98	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	44.7	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	5.6	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	5.45	meq/l		0.05		SW6010B	11/04/04 03:35 / rp
Magnesium, Saturated Paste	3.80	meq/l		0.08		SW6010B	11/04/04 03:35 / rp
Sodium, Saturated Paste	12.1	meq/l		0.04		SW6010B	11/04/04 03:35 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	24	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	56	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	20	%		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	19.0	meq/100g		0.09		SW6010B	11/09/04 06:15 / rp
Lime as CaCO3	6.3	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.74	meq/100g		0.04		SW6010B	11/08/04 03:31 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	1.2	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	6.3	%		0.1		USDA20a	11/22/04 07:49 / jdh

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-074  
**Client Sample ID:** T2/YBA-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	7.9	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	2.27	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	51.9	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	11	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.3	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	3.07	meq/l		0.05		SW6010B	11/04/04 03:38 / rp
Magnesium, Saturated Paste	2.02	meq/l		0.08		SW6010B	11/04/04 03:38 / rp
Sodium, Saturated Paste	16.9	meq/l		0.04		SW6010B	11/04/04 03:38 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	18	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	56	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	26	%		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	1.3	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Cation Exchange Capacity	21.0	meq/100g		0.09		SW6010B	11/09/04 06:18 / rp
Lime as CaCO3	6.1	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	3.57	meq/100g		0.04		SW6010B	11/08/04 03:34 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	2.7	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	13	%		0.1		USDA20a	11/22/04 07:49 / jdh
<b>METALS, CaCl2 EXTRACTABLE</b>							
Barium	2.1	mg/L		0.04		SW6010B	11/09/04 10:15 / rp
Boron	2.3	mg/L		0.04		SW6010B	11/09/04 10:15 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 10:15 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP  
Project: Tongue River Monitoring Tier 2  
Lab ID: H04100167-075  
Client Sample ID: T2/YBA-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	8.2	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.98	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	58.2	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	17	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	2.19	meq/l		0.05		SW6010B	11/04/04 03:41 / rp
Magnesium, Saturated Paste	1.32	meq/l		0.08		SW6010B	11/04/04 03:41 / rp
Sodium, Saturated Paste	22.6	meq/l		0.04		SW6010B	11/04/04 03:41 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	20	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	50	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	30	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiCL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	24.5	meq/100g		0.09		SW6010B	11/09/04 06:21 / rp
Lime as CaCO3	6.1	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	5.53	meq/100g		0.04		SW6010B	11/08/04 03:37 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	4.2	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	17	%		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:** H04100167-076  
**Client Sample ID:** T2/YBA-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	7.5	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.89	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	48.5	%		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	4.2	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	10.0	meq/l		0.05		SW6010B	11/04/04 03:44 / rp
Magnesium, Saturated Paste	3.90	meq/l		0.08		SW6010B	11/04/04 03:44 / rp
Sodium, Saturated Paste	4.93	meq/l		0.04		SW6010B	11/04/04 03:44 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	20	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	57	%		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>							
Cation Exchange Capacity	21.1	meq/100g		0.09		SW6010B	11/09/04 06:24 / rp
Lime as CaCO3	6.6	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.86	meq/100g		0.04		SW6010B	11/08/04 03:40 / 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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