



LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring  
 Lab ID: H03100082-054  
 Client Sample ID: T2/BA-1-(0-6)

Report Date: 02/03/04  
 Collection Date: 10/13/03 17:00  
 Date Received: 10/14/03  
 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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	0.73	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	55.3	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	3.1	meq/l		0.1		SW6010B	11/08/03 02:05 / jdh
Magnesium, Saturated Paste	1.8	meq/l		0.1		SW6010B	11/08/03 02:05 / jdh
Sodium, Saturated Paste	2.5	meq/l		0.1		SW6010B	11/08/03 02:05 / jdh
Sodium Adsorption Ratio (SAR)	1.6	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	4.3	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
Nitrate as N, Saturated Paste	1.6	mg/L		0.1		ASA10-3	11/07/03 08:00 / cwh
Sulfate, Saturated Paste	2.9	meq/L		0.2		ASA10-3	11/18/03 11:55 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	10	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	62	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	28	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiCL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Potassium, NH4OAc Extractable	267	mg/kg		1		AAA13-3	01/15/04 00:00 / jdh
Organic Matter	2.20	wt%		0.02		ASA29-3	12/01/03 11:37 / jdh
Cation Exchange Capacity	33.7	meq/100g		0.1		SW6010B	11/11/03 07:30 / jdh
Exchangeable Sodium Percentage	2.5	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	5.9	wt%		0.1		USDA23c	10/31/03 00:00 / jms
Phosphorus	47	mg/kg		0.1		ASA24-5	11/18/03 08:41 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.0	meq/100g		0.1		SW6010B	11/24/03 01:34 / jdh
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.90	mg/kg		0.02		SW6010B	11/14/03 06:07 / jdh
<b>CLAY MINEROLOGY</b>							
Smectite	46	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Illite	20	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Kaolinite	29	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Chlorite	5	%		1		XrayDiffraction	11/07/03 00:00 / wjj

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  
**Lab ID:** H03100082-055  
**Client Sample ID:** T2/BA-1-(6-15)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	0.80	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	53.8	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	3.5	meq/l		0.1		SW6010B	11/08/03 02:07 / jdh
Magnesium, Saturated Paste	2.0	meq/l		0.1		SW6010B	11/08/03 02:07 / jdh
Sodium, Saturated Paste	2.5	meq/l		0.1		SW6010B	11/08/03 02:07 / jdh
Sodium Adsorption Ratio (SAR)	1.5	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	4.2	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
Nitrate as N, Saturated Paste	1.1	mg/L		0.1		ASA10-3	11/07/03 08:00 / cwh
Sulfate, Saturated Paste	3.2	meq/L		0.2		ASA10-3	11/18/03 11:58 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	8.0	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	64	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	28	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiCL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	28.1	meq/100g		0.1		SW6010B	11/11/03 07:33 / jdh
Exchangeable Sodium Percentage	3.2	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.2	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.0	meq/100g		0.1		SW6010B	11/24/03 01:42 / jdh
<b>CLAY MINEROLOGY</b>							
Smectite	42	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Illite	18	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Kaolinite	36	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Chlorite	4	%		1		XrayDiffraction	11/07/03 00:00 / wjj

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

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring  
**Lab ID:** H03100082-056  
**Client Sample ID:** T2/BA-1-(15-27)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	0.73	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	45.2	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	2.6	meq/l		0.1		SW6010B	11/08/03 02:10 / jdh
Magnesium, Saturated Paste	1.5	meq/l		0.1		SW6010B	11/08/03 02:10 / jdh
Sodium, Saturated Paste	2.8	meq/l		0.1		SW6010B	11/08/03 02:10 / jdh
Sodium Adsorption Ratio (SAR)	2.0	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	3.0	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
Nitrate as N, Saturated Paste	1.6	mg/L		0.6		ASA10-3	11/07/03 08:00 / cwh
Sulfate, Saturated Paste	3.3	meq/L		0.2		ASA10-3	11/18/03 12:01 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	24	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	54	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	22	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	24.7	meq/100g		0.1		SW6010B	11/11/03 07:36 / jdh
Exchangeable Sodium Percentage	2.7	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.4	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.8	meq/100g		0.1		SW6010B	11/24/03 01:44 / jdh
<b>CLAY MINEROLOGY</b>							
Smectite	39	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Illite	23	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Kaolinite	34	%		1		XrayDiffraction	11/07/03 00:00 / wjj
Chlorite	4	%		1		XrayDiffraction	11/07/03 00:00 / wjj

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring  
**Lab ID:** H03100082-057  
**Client Sample ID:** T2/BA-1-(27-36)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	0.45	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	34.0	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	1.4	meq/l		0.1		SW6010B	11/08/03 02:13 / jdh
Magnesium, Saturated Paste	0.7	meq/l		0.1		SW6010B	11/08/03 02:13 / jdh
Sodium, Saturated Paste	1.7	meq/l		0.1		SW6010B	11/08/03 02:13 / jdh
Sodium Adsorption Ratio (SAR)	1.6	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	2.6	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	74	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	22	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	4.0	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	11.7	meq/100g		0.1		SW6010B	11/11/03 07:38 / jdh
Exchangeable Sodium Percentage	4.3	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	5.2	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.6	meq/100g		0.1		SW6010B	11/24/03 01:47 / jdh

**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  
Lab ID: H03100082-058  
Client Sample ID: T2/BA-1-(36-45)

Report Date: 02/03/04  
Collection Date: 10/13/03 17:00  
Date Received: 10/14/03  
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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	0.71	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	50.2	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	2.4	meq/l		0.1		SW6010B	11/08/03 02:21 / jdh
Magnesium, Saturated Paste	1.2	meq/l		0.1		SW6010B	11/08/03 02:21 / jdh
Sodium, Saturated Paste	2.8	meq/l		0.1		SW6010B	11/08/03 02:21 / jdh
Sodium Adsorption Ratio (SAR)	2.1	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	9.0	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	71	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	20	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	28.0	meq/100g		0.1		SW6010B	11/11/03 07:41 / jdh
Exchangeable Sodium Percentage	2.6	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.5	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.9	meq/100g		0.1		SW6010B	11/24/03 01:50 / jdh

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  
Lab ID: H03100082-059  
Client Sample ID: T2/BA-1-(45-60)

Report Date: 02/03/04  
Collection Date: 10/13/03 17:00  
Date Received: 10/14/03  
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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	0.62	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	37.4	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	2.1	meq/l		0.1		SW6010B	11/08/03 02:23 / jdh
Magnesium, Saturated Paste	1.1	meq/l		0.1		SW6010B	11/08/03 02:23 / jdh
Sodium, Saturated Paste	2.4	meq/l		0.1		SW6010B	11/08/03 02:23 / jdh
Sodium Adsorption Ratio (SAR)	1.9	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	2.9	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	40	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	42	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	18	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	L	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	21.5	meq/100g		0.1		SW6010B	11/11/03 07:43 / jdh
Exchangeable Sodium Percentage	3.2	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.9	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.8	meq/100g		0.1		SW6010B	11/24/03 01:52 / jdh

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  
**Lab ID:** H03100082-064  
**Client Sample ID:** T2/BA-10-(0-2)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.5	s.u.		0.1		ASAM10-3.2	12/01/03 11:37 / jdh
Conductivity, Paste Extract	2.56	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	48.5	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	13.8	meq/l		0.1		SW6010B	11/08/03 02:26 / jdh
Magnesium, Saturated Paste	6.3	meq/l		0.1		SW6010B	11/08/03 02:26 / jdh
Sodium, Saturated Paste	3.1	meq/l		0.1		SW6010B	11/08/03 02:26 / jdh
Sodium Adsorption Ratio (SAR)	1.0	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	5.2	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	18	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	58	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	24	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	29.2	meq/100g		0.1		SW6010B	11/11/03 07:46 / jdh
Exchangeable Sodium Percentage	1.7	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.1	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.6	meq/100g		0.1		SW6010B	11/24/03 01:55 / jdh

**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  
**Lab ID:** H03100082-065  
**Client Sample ID:** T2/BA-10-(0-6)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	1.00	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	48.6	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	4.2	meq/l		0.1		SW6010B	11/08/03 02:31 / jdh
Magnesium, Saturated Paste	2.4	meq/l		0.1		SW6010B	11/08/03 02:31 / jdh
Sodium, Saturated Paste	2.8	meq/l		0.1		SW6010B	11/08/03 02:31 / jdh
Sodium Adsorption Ratio (SAR)	1.5	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	4.0	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
Nitrate as N, Saturated Paste	18.0	mg/L		1.1		ASA10-3	11/07/03 08:00 / cwh
Sulfate, Saturated Paste	2.7	meq/L		0.2		ASA10-3	11/18/03 12:04 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	10	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	66	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	24	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	ND	mg/kg		1.0		A4500-F C	11/19/03 14:45 / ddb
Potassium, NH4OAc Extractable	148	mg/kg		1		AAA13-3	01/15/04 00:00 / jdh
Organic Matter	2.10	wt%		0.02		ASA29-3	12/01/03 11:37 / jdh
Cation Exchange Capacity	30.0	meq/100g		0.1		SW6010B	11/11/03 07:49 / jdh
Exchangeable Sodium Percentage	2.2	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.3	wt%		0.1		USDA23c	10/31/03 00:00 / jms
Phosphorus	13	mg/kg		0.1		ASA24-5	11/18/03 08:44 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.8	meq/100g		0.1		SW6010B	11/24/03 01:57 / jdh
<b>METALS, HOT WATER EXTRACTABLE</b>							
Barium	ND	mg/kg		5		SW6010B	11/25/03 15:10 / rh
Boron	ND	mg/kg		1		SW6010B	11/25/03 15:10 / rh
Selenium	ND	mg/kg		0.05		SW6020	11/20/03 12:46 / car
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.54	mg/kg		0.02		SW6010B	11/14/03 06:16 / jdh

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MCL - Maximum contaminant level.  
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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring  
**Lab ID:** H03100082-066  
**Client Sample ID:** T2/BA-10-(6-12)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	1.34	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	49.4	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	5.3	meq/l		0.1		SW6010B	11/08/03 02:34 / jdh
Magnesium, Saturated Paste	3.7	meq/l		0.1		SW6010B	11/08/03 02:34 / jdh
Sodium, Saturated Paste	3.8	meq/l		0.1		SW6010B	11/08/03 02:34 / jdh
Sodium Adsorption Ratio (SAR)	1.8	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
Nitrate as N, Saturated Paste	42.1	mg/L		1.1		ASA10-3	11/07/03 08:00 / cwh
Sulfate, Saturated Paste	5.4	meq/L		0.2		ASA10-3	11/18/03 12:07 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	18	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	58	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	24	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	29.4	meq/100g		0.1		SW6010B	11/11/03 07:51 / jdh
Exchangeable Sodium Percentage	2.6	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.7	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.0	meq/100g		0.1		SW6010B	11/24/03 02:00 / jdh

**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  
**Lab ID:** H03100082-067  
**Client Sample ID:** T2/BA-10-(12-24)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	1.70	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	45.8	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	5.6	meq/l		0.1		SW6010B	11/08/03 02:36 / jdh
Magnesium, Saturated Paste	4.7	meq/l		0.1		SW6010B	11/08/03 02:36 / jdh
Sodium, Saturated Paste	5.3	meq/l		0.1		SW6010B	11/08/03 02:36 / jdh
Sodium Adsorption Ratio (SAR)	2.4	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
Nitrate as N, Saturated Paste	36.9	mg/L		2.2		ASA10-3	11/07/03 08:00 / cwh
Sulfate, Saturated Paste	8.2	meq/L		0.2		ASA10-3	11/18/03 12:10 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	18	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	61	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	21	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SiL	unitless				ASA15-5	12/01/03 11:37 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	25.6	meq/100g		0.1		SW6010B	11/11/03 07:59 / jdh
Exchangeable Sodium Percentage	3.2	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.6	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.1	meq/100g		0.1		SW6010B	11/24/03 02:03 / jdh

**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  
**Lab ID:** H03100082-068  
**Client Sample ID:** T2/BA-10-(24-36)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	2.40	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	38.7	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	9.3	meq/l		0.1		SW6010B	11/08/03 02:39 / jdh
Magnesium, Saturated Paste	7.7	meq/l		0.1		SW6010B	11/08/03 02:39 / jdh
Sodium, Saturated Paste	7.4	meq/l		0.1		SW6010B	11/08/03 02:39 / jdh
Sodium Adsorption Ratio (SAR)	2.5	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	2.8	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	42	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	44	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	14	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	L	unitless				ASA15-5	12/01/03 00:00 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	12.5	meq/100g		0.1		SW6010B	11/11/03 08:02 / jdh
Exchangeable Sodium Percentage	6.2	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	5.8	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.1	meq/100g		0.1		SW6010B	11/24/03 02:05 / jdh

**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  
**Lab ID:** H03100082-069  
**Client Sample ID:** T2/BA-10-(36-60)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	1.46	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	40.4	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	4.3	meq/l		0.1		SW6010B	11/08/03 02:41 / jdh
Magnesium, Saturated Paste	3.6	meq/l		0.1		SW6010B	11/08/03 02:41 / jdh
Sodium, Saturated Paste	6.1	meq/l		0.1		SW6010B	11/08/03 02:41 / jdh
Sodium Adsorption Ratio (SAR)	3.1	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	36	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	48	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	16	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	L	unitless				ASA15-5	12/01/03 00:00 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	ND	mg/kg		1.0		A4500-F C	11/19/03 14:45 / ddb
Cation Exchange Capacity	14.5	meq/100g		0.1		SW6010B	11/11/03 08:05 / jdh
Exchangeable Sodium Percentage	7.4	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	6.3	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.3	meq/100g		0.1		SW6010B	11/24/03 02:08 / jdh
<b>METALS, HOT WATER EXTRACTABLE</b>							
Barium	ND	mg/kg		5		SW6010B	11/25/03 15:13 / rh
Boron	ND	mg/kg		1		SW6010B	11/25/03 15:13 / rh
Selenium	ND	mg/kg		0.05		SW6020	11/20/03 13:11 / car

**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  
**Lab ID:** H03100082-070  
**Client Sample ID:** T2/BA-10-(60-96)

**Report Date:** 02/03/04  
**Collection Date:** 10/13/03 17:00  
**Date Received:** 10/14/03  
**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	12/01/03 11:37 / jdh
Conductivity, Paste Extract	1.35	mmhos/cm		0.01		ASAM10-3	12/01/03 11:37 / jdh
Saturation	28.6	wt%		0.1		USDA27a	12/01/03 11:37 / jdh
Calcium, Saturated Paste	3.3	meq/l		0.1		SW6010B	11/08/03 02:44 / jdh
Magnesium, Saturated Paste	2.6	meq/l		0.1		SW6010B	11/08/03 02:44 / jdh
Sodium, Saturated Paste	6.4	meq/l		0.1		SW6010B	11/08/03 02:44 / jdh
Sodium Adsorption Ratio (SAR)	3.7	unitless		0.1		Calculation	12/01/03 11:37 / jdh
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	11/25/03 00:00 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	69	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Silt	23	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Clay	8.0	wt%		1.0		ASA15-5	12/01/03 11:37 / jdh
Texture	SL	unitless				ASA15-5	12/01/03 00:00 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	13.3	meq/100g		0.1		SW6010B	11/11/03 08:07 / jdh
Exchangeable Sodium Percentage	5.2	%		0.1		USDA20b	12/01/03 11:37 / jdh
Lime as CaCO3	5.5	wt%		0.1		USDA23c	10/31/03 00:00 / jms
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.9	meq/100g		0.1		SW6010B	11/24/03 02:16 / jdh

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

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