



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-001
Client Sample ID: T2/MA-10-(0-6")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.4	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	0.66	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	40.6	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	1.2	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	4.0	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
Nitrate as N, Saturated Paste	1.3	mg/L		0.2		ASA10-3	10/27/04 09:51 / cwh
SATURATED PASTE							
Calcium, Saturated Paste	3.09	meq/l		0.05		SW6010B	10/22/04 11:05 / jdh
Magnesium, Saturated Paste	1.56	meq/l		0.08		SW6010B	10/22/04 11:05 / jdh
Sodium, Saturated Paste	1.83	meq/l		0.04		SW6010B	10/22/04 11:05 / jdh
Sulfate, Saturated Paste	2.26	meq/l		0.002		SW6010B	10/22/04 11:05 / jdh
PHYSICAL CHARACTERISTICS							
Sand	35	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	44	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	21	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	L	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Fluoride	ND	mg/kg		1.0		A4500-F C	11/17/04 13:00 / jdh
Potassium, NH4OAc Extractable	382	mg/kg		1		ASA13-3	11/17/04 13:00 / jdh
Organic Matter	2.30	%		0.02		ASA29-3	11/18/04 14:57 / jdh
Cation Exchange Capacity	29.6	meq/100g		0.09		SW6010B	10/20/04 06:25 / jdh
Lime as CaCO3	8.8	%		0.1		USDA23c	11/18/04 14:57 / jdh
Phosphorus	8.5	mg/kg		0.4		ASA24-5	11/19/04 02:35 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.78	meq/100g		0.04		SW6010B	10/20/04 11:37 / jdh
EXCHANGEABLES							
Exchangeable Sodium	0.7	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	2.4	%		0.1		USDA20a	11/18/04 14:57 / jdh
METALS, DTPA EXTRACTABLE							
Zinc	0.67	mg/kg		0.02		SW6010B	10/21/04 09:44 / jdh
METALS, CACL2 EXTRACTABLE							
Barium	9.5	mg/L		0.04		SW6010B	10/21/04 10:05 / jdh

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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Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
METALS, CACL2 EXTRACTABLE							
Boron	1.7	mg/L		0.04		SW6010B	10/21/04 10:05 / jdh
Selenium	ND	mg/L		0.10		SW6010B	10/21/04 10:05 / jdh

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-002
Client Sample ID: T2/MA-10-(6-12")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.5	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	1.03	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	41.2	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	1.6	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	3.4	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
Nitrate as N, Saturated Paste	2.4	mg/L		0.2		ASA10-3	10/27/04 09:53 / cwh
SATURATED PASTE							
Calcium, Saturated Paste	4.16	meq/l		0.05		SW6010B	10/22/04 11:08 / jdh
Magnesium, Saturated Paste	3.37	meq/l		0.08		SW6010B	10/22/04 11:08 / jdh
Sodium, Saturated Paste	3.06	meq/l		0.04		SW6010B	10/22/04 11:08 / jdh
Sulfate, Saturated Paste	6.56	meq/l		0.002		SW6010B	10/22/04 11:08 / jdh
PHYSICAL CHARACTERISTICS							
Sand	29	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	50	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	21	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	SiL	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	28.4	meq/100g		0.09		SW6010B	10/20/04 06:28 / jdh
Lime as CaCO3	9.2	%		0.1		USDA23c	11/18/04 14:57 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.82	meq/100g		0.04		SW6010B	10/20/04 11:40 / jdh
EXCHANGEABLES							
Exchangeable Sodium	0.7	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	2.4	%		0.1		USDA20a	11/18/04 14:57 / jdh

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-003
Client Sample ID: T2/MA-10-(12-24")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	1.77	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	43.6	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	2.2	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
Nitrate as N, Saturated Paste	5.2	mg/L		0.6		ASA10-3	10/27/04 09:55 / cwh
SATURATED PASTE							
Calcium, Saturated Paste	5.16	meq/l		0.05		SW6010B	10/22/04 11:11 / jdh
Magnesium, Saturated Paste	7.23	meq/l		0.08		SW6010B	10/22/04 11:11 / jdh
Sodium, Saturated Paste	5.41	meq/l		0.04		SW6010B	10/22/04 11:11 / jdh
Sulfate, Saturated Paste	13.2	meq/l		0.002		SW6010B	10/22/04 11:11 / jdh
PHYSICAL CHARACTERISTICS							
Sand	26	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	51	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	23	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	SiL	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	28.7	meq/100g		0.09		SW6010B	10/20/04 06:31 / jdh
Lime as CaCO3	11.5	%		0.1		USDA23c	11/18/04 14:57 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.10	meq/100g		0.04		SW6010B	10/20/04 11:43 / jdh
EXCHANGEABLES							
Exchangeable Sodium	0.9	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	3.0	%		0.1		USDA20a	11/18/04 14:57 / jdh

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-004
Client Sample ID: T2/MA-10-(24-36")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	5.53	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	40.0	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	3.3	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	2.4	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	15.3	meq/l		0.05		SW6010B	10/22/04 11:14 / jdh
Magnesium, Saturated Paste	42.1	meq/l		0.08		SW6010B	10/22/04 11:14 / jdh
Sodium, Saturated Paste	17.5	meq/l		0.04		SW6010B	10/22/04 11:14 / jdh
PHYSICAL CHARACTERISTICS							
Sand	29	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	51	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	20	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	SiL	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	25.5	meq/100g		0.09		SW6010B	10/20/04 06:34 / jdh
Lime as CaCO3	10.7	%		0.1		USDA23c	11/18/04 14:57 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.93	meq/100g		0.04		SW6010B	10/20/04 11:46 / jdh
EXCHANGEABLES							
Exchangeable Sodium	1.2	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	4.8	%		0.1		USDA20a	11/18/04 14:57 / jdh

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-005
Client Sample ID: T2/MA-10-(36-60")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	2.36	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	37.4	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	2.6	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	2.4	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	4.64	meq/l		0.05		SW6010B	10/22/04 11:17 / jdh
Magnesium, Saturated Paste	10.1	meq/l		0.08		SW6010B	10/22/04 11:17 / jdh
Sodium, Saturated Paste	7.06	meq/l		0.04		SW6010B	10/22/04 11:17 / jdh
PHYSICAL CHARACTERISTICS							
Sand	40	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	45	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	15	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	L	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Fluoride	1.1	mg/kg		1.0		A4500-F C	11/17/04 13:00 / jdh
Cation Exchange Capacity	21.3	meq/100g		0.09		SW6010B	10/20/04 06:43 / jdh
Lime as CaCO3	11.5	%		0.1		USDA23c	11/18/04 14:57 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.35	meq/100g		0.04		SW6010B	10/20/04 11:49 / jdh
EXCHANGEABLES							
Exchangeable Sodium	1.1	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	5.1	%		0.1		USDA20a	11/18/04 14:57 / jdh
METALS, CACL2 EXTRACTABLE							
Barium	2.2	mg/L		0.04		SW6010B	10/21/04 10:08 / jdh
Boron	2.0	mg/L		0.04		SW6010B	10/21/04 10:08 / jdh
Selenium	ND	mg/L		0.10		SW6010B	10/21/04 10:08 / jdh

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-006
Client Sample ID: T2/MA-10-(60-96")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.6	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	1.77	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	27.9	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	2.0	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	2.0	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	5.10	meq/l		0.05		SW6010B	10/22/04 11:20 / jdh
Magnesium, Saturated Paste	7.10	meq/l		0.08		SW6010B	10/22/04 11:20 / jdh
Sodium, Saturated Paste	4.83	meq/l		0.04		SW6010B	10/22/04 11:20 / jdh
PHYSICAL CHARACTERISTICS							
Sand	61	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	29	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	10	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	SL	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	16.9	meq/100g		0.09		SW6010B	10/20/04 06:46 / jdh
Lime as CaCO3	9.4	%		0.1		USDA23c	11/18/04 14:57 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.93	meq/100g		0.04		SW6010B	10/20/04 11:52 / jdh
EXCHANGEABLES							
Exchangeable Sodium	0.8	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	4.7	%		0.1		USDA20a	11/18/04 14:57 / jdh

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Definitions: QCL - Quality control limit.

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100101-007
Client Sample ID: T2/MA-10-(0-2")

Report Date: 11/21/04
Collection Date: 10/12/04 17:00
Date Received: 10/13/04
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
SATURATED PASTE							
pH, sat. paste	7.3	s.u.		0.1		ASAM10-3.2	11/18/04 14:57 / jdh
Conductivity, Paste Extract	0.74	mmhos/cm		0.01		ASAM10-3	11/18/04 14:57 / jdh
Saturation	40.5	%		0.1		USDA27a	11/18/04 14:57 / jdh
Sodium Adsorption Ratio (SAR)	0.76	unitless		0.01		Calculation	11/18/04 14:57 / jdh
Alkalinity, Saturated Paste	7.2	meq/L		1.0		ASA10-3	11/17/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	3.78	meq/l		0.05		SW6010B	10/22/04 11:23 / jdh
Magnesium, Saturated Paste	2.54	meq/l		0.08		SW6010B	10/22/04 11:23 / jdh
Sodium, Saturated Paste	1.34	meq/l		0.04		SW6010B	10/22/04 11:23 / jdh
PHYSICAL CHARACTERISTICS							
Sand	38	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Silt	45	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Clay	17	%		1.0		ASA15-5	11/18/04 14:57 / jdh
Texture	L	unitless				ASA15-5	11/18/04 14:57 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	27.9	meq/100g		0.09		SW6010B	10/20/04 06:49 / jdh
Lime as CaCO3	8.3	%		0.1		USDA23c	11/18/04 14:57 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.58	meq/100g		0.04		SW6010B	10/20/04 11:55 / jdh
EXCHANGEABLES							
Exchangeable Sodium	0.5	meq/100g		0.1		Calculation	11/18/04 14:57 / jdh
Exchangeable Sodium Percentage	1.9	%		0.1		USDA20a	11/18/04 14:57 / jdh

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