



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-001
Client Sample ID: PA, 0-2 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	20	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	48	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	32	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiCL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.30	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	0.91	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	62.2	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	5.21	meq/L		0.05		SW6010B	12/18/08 19:05 / rh
Magnesium, sat. paste	4.18	meq/L		0.08		SW6010B	12/18/08 19:05 / rh
Sodium, sat. paste	0.88	meq/L		0.04		SW6010B	12/18/08 19:05 / rh
Sodium Adsorption Ratio (SAR)	0.41	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	3.3	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	31.1	meq/100g	D	0.08		SW6010B	12/18/08 22:13 / rh
Exchangeable Sodium Percentage	0.29	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.14	meq/100g	D	0.0016		SW6010B	12/16/08 16:42 / rh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-002
Client Sample ID: PA, 0-6 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	20	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	46	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	34	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiCL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.50	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	0.85	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	58.5	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	4.62	meq/L		0.05		SW6010B	12/18/08 19:13 / rh
Magnesium, sat. paste	3.72	meq/L		0.08		SW6010B	12/18/08 19:13 / rh
Sodium, sat. paste	1.72	meq/L		0.04		SW6010B	12/18/08 19:13 / rh
Sodium Adsorption Ratio (SAR)	0.84	unitless		0.01		Calculation	12/22/08 14:23 / srm
Sulfate, sat. paste	107	mg/L		1		ASA10-3	12/18/08 13:06 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	3.5	%		0.1		USDA23c	12/30/08 15:51 / srm
Phosphorus, Olsen	25	mg/kg		1		ASA24-5	12/12/08 10:29 / srm
Nitrate as N, KCL Extract	13	mg/kg		1		ASA33-8	12/19/08 13:36 / srm
Organic Matter	3.02	%		0.02		ASA29-3	12/22/08 14:33 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.7	meq/100g	D	0.08		SW6010B	12/18/08 22:21 / rh
Exchangeable Sodium Percentage	0.60	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.29	meq/100g	D	0.0016		SW6010B	12/16/08 17:21 / rh
Potassium, available	223	mg/kg	D	0.13		SW6010B	12/16/08 17:21 / rh
METALS, DTPA EXTRACTABLE							
Zinc	1.4	mg/kg		0.1		SW6010B	12/23/08 22:32 / rh

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

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



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
 Project: PDC AMPP
 Lab ID: B08120276-003
 Client Sample ID: PA, 6-12 inches

Report Date: 12/31/08
 Collection Date: 11/25/08 09:00
 Date Received: 12/02/08
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	20	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	46	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	34	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiCL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.60	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	1.04	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	55.8	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	5.03	meq/L		0.05		SW6010B	12/18/08 19:24 / rh
Magnesium, sat. paste	3.95	meq/L		0.08		SW6010B	12/18/08 19:24 / rh
Sodium, sat. paste	3.14	meq/L		0.04		SW6010B	12/18/08 19:24 / rh
Sodium Adsorption Ratio (SAR)	1.48	unitless		0.01		Calculation	12/22/08 14:23 / srm
Sulfate, sat. paste	357	mg/L		1		ASA10-3	12/18/08 13:41 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	3.5	%		0.1		USDA23c	12/30/08 15:51 / srm
Nitrate as N, KCL Extract	7	mg/kg		1		ASA33-8	12/19/08 13:37 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.8	meq/100g	D	0.08		SW6010B	12/18/08 22:29 / rh
Exchangeable Sodium Percentage	1.12	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.52	meq/100g	D	0.0016		SW6010B	12/16/08 17:29 / rh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-004
Client Sample ID: PA, 12-24 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	17	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	48	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	35	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiCL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.70	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	1.96	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	57.2	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	11.3	meq/L		0.05		SW6010B	12/18/08 19:28 / rh
Magnesium, sat. paste	9.47	meq/L		0.08		SW6010B	12/18/08 19:28 / rh
Sodium, sat. paste	5.59	meq/L		0.04		SW6010B	12/18/08 19:28 / rh
Sodium Adsorption Ratio (SAR)	1.74	unitless		0.01		Calculation	12/22/08 14:23 / srm
Sulfate, sat. paste	1140	mg/L		1		ASA10-3	12/19/08 13:22 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	3.7	%		0.1		USDA23c	12/30/08 15:51 / srm
Nitrate as N, KCL Extract	6	mg/kg		1		ASA33-8	12/19/08 13:38 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.6	meq/100g	D	0.08		SW6010B	12/18/08 22:32 / rh
Exchangeable Sodium Percentage	1.43	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.76	meq/100g	D	0.0016		SW6010B	12/16/08 17:32 / rh

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-005
Client Sample ID: PA, 24-36 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	19	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	46	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	35	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiCL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.80	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	2.98	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	60.3	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	16.6	meq/L		0.05		SW6010B	12/18/08 19:32 / rh
Magnesium, sat. paste	15.9	meq/L		0.08		SW6010B	12/18/08 19:32 / rh
Sodium, sat. paste	7.81	meq/L		0.04		SW6010B	12/18/08 19:32 / rh
Sodium Adsorption Ratio (SAR)	1.94	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.1	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	29.0	meq/100g	D	0.08		SW6010B	12/18/08 22:36 / rh
Exchangeable Sodium Percentage	1.41	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.88	meq/100g	D	0.0016		SW6010B	12/16/08 17:36 / rh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-006
Client Sample ID: PA, 36-48 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	19	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	46	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	35	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiCL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.70	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	3.72	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	56.9	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	26.1	meq/L		0.05		SW6010B	12/18/08 19:39 / rh
Magnesium, sat. paste	23.1	meq/L		0.08		SW6010B	12/18/08 19:39 / rh
Sodium, sat. paste	8.31	meq/L		0.04		SW6010B	12/18/08 19:39 / rh
Sodium Adsorption Ratio (SAR)	1.68	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	5.8	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	25.9	meq/100g	D	0.08		SW6010B	12/18/08 22:40 / rh
Exchangeable Sodium Percentage	1.26	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.80	meq/100g	D	0.0016		SW6010B	12/16/08 17:40 / rh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

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



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-007
Client Sample ID: PA, 48-60 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	27	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	43	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	30	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	CL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.70	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	3.62	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	51.9	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	25.3	meq/L		0.05		SW6010B	12/18/08 19:43 / rh
Magnesium, sat. paste	22.1	meq/L		0.08		SW6010B	12/18/08 19:43 / rh
Sodium, sat. paste	6.93	meq/L		0.04		SW6010B	12/18/08 19:43 / rh
Sodium Adsorption Ratio (SAR)	1.42	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.8	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	23.4	meq/100g	D	0.08		SW6010B	12/18/08 22:52 / rh
Exchangeable Sodium Percentage	1.18	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.64	meq/100g	D	0.0016		SW6010B	12/16/08 17:44 / rh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-008
Client Sample ID: PA, 60-72 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	23	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	44	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	33	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	CL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.70	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	3.52	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	53.9	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	26.5	meq/L		0.05		SW6010B	12/18/08 19:47 / rh
Magnesium, sat. paste	21.3	meq/L		0.08		SW6010B	12/18/08 19:47 / rh
Sodium, sat. paste	6.29	meq/L		0.04		SW6010B	12/18/08 19:47 / rh
Sodium Adsorption Ratio (SAR)	1.29	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	5.9	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	25.0	meq/100g	D	0.08		SW6010B	12/18/08 22:56 / rh
Exchangeable Sodium Percentage	0.97	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.58	meq/100g	D	0.0016		SW6010B	12/16/08 17:48 / rh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

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



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-009
Client Sample ID: PA, 72-96 inches

Report Date: 12/31/08
Collection Date: 11/25/08 09:00
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	26	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	41	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	33	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	CL					ASA15-5	12/22/08 14:23 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.70	s.u.		0.10		ASAM10-3.2	12/22/08 14:23 / srm
Conductivity, sat. paste	3.62	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	53.3	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	29.4	meq/L		0.05		SW6010B	12/18/08 19:51 / rh
Magnesium, sat. paste	22.4	meq/L		0.08		SW6010B	12/18/08 19:51 / rh
Sodium, sat. paste	5.26	meq/L		0.04		SW6010B	12/18/08 19:51 / rh
Sodium Adsorption Ratio (SAR)	1.03	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.1	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	24.4	meq/100g	D	0.08		SW6010B	12/18/08 23:00 / rh
Exchangeable Sodium Percentage	0.69	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.45	meq/100g	D	0.0016		SW6010B	12/16/08 17:51 / rh

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.