



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120276-010
Client Sample ID: PB, 0-2 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	15	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	46	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	39	%		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	0.92	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	72.6	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	5.46	meq/L		0.05		SW6010B	12/18/08 19:55 / rh
Magnesium, sat. paste	3.56	meq/L		0.08		SW6010B	12/18/08 19:55 / rh
Sodium, sat. paste	0.56	meq/L		0.04		SW6010B	12/18/08 19:55 / rh
Sodium Adsorption Ratio (SAR)	0.26	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	3.0	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	36.5	meq/100g	D	0.08		SW6010B	12/18/08 23:03 / rh
Exchangeable Sodium Percentage	0.18	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.11	meq/100g	D	0.0016		SW6010B	12/16/08 17:55 / 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: B08120276-011
Client Sample ID: PB, 0-6 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
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	45	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	38	%		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	0.63	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	70.4	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	3.98	meq/L		0.05		SW6010B	12/18/08 19:58 / rh
Magnesium, sat. paste	2.53	meq/L		0.08		SW6010B	12/18/08 19:58 / rh
Sodium, sat. paste	0.66	meq/L		0.04		SW6010B	12/18/08 19:58 / rh
Sodium Adsorption Ratio (SAR)	0.37	unitless		0.01		Calculation	12/22/08 14:23 / srm
Sulfate, sat. paste	91	mg/L		1		ASA10-3	12/18/08 14:04 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	2.9	%		0.1		USDA23c	12/30/08 15:51 / srm
Phosphorus, Olsen	45	mg/kg		1		ASA24-5	12/12/08 10:34 / srm
Nitrate as N, KCL Extract	14	mg/kg		1		ASA33-8	12/19/08 13:39 / srm
Organic Matter	3.07	%		0.02		ASA29-3	12/22/08 14:33 / srm
EXCHANGEABLES							
Cation Exchange Capacity	35.1	meq/100g	D	0.08		SW6010B	12/18/08 23:07 / rh
Exchangeable Sodium Percentage	0.20	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.12	meq/100g	D	0.0016		SW6010B	12/16/08 18:07 / rh
Potassium, available	311	mg/kg	D	0.13		SW6010B	12/16/08 18:07 / rh
METALS, DTPA EXTRACTABLE							
Zinc	1.7	mg/kg		0.1		SW6010B	12/23/08 22:40 / 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: B08120276-012
 Client Sample ID: PB, 6-12 inches

Report Date: 12/31/08
 Collection Date: 11/25/08 10:30
 Date Received: 12/02/08
 Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	15	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	45	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	40	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiC					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	0.71	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	71.4	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	4.22	meq/L		0.05		SW6010B	12/18/08 20:38 / rh
Magnesium, sat. paste	2.79	meq/L		0.08		SW6010B	12/18/08 20:38 / rh
Sodium, sat. paste	1.05	meq/L		0.04		SW6010B	12/18/08 20:38 / rh
Sodium Adsorption Ratio (SAR)	0.56	unitless		0.01		Calculation	12/22/08 14:23 / srm
Sulfate, sat. paste	160	mg/L		1		ASA10-3	12/18/08 14:27 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	3.0	%		0.1		USDA23c	12/30/08 15:51 / srm
Nitrate as N, KCL Extract	13	mg/kg		1		ASA33-8	12/19/08 13:39 / srm
EXCHANGEABLES							
Cation Exchange Capacity	35.0	meq/100g	D	0.08		SW6010B	12/18/08 23:15 / rh
Exchangeable Sodium Percentage	0.39	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.21	meq/100g	D	0.0016		SW6010B	12/16/08 18:14 / 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: B08120276-013
Client Sample ID: PB, 12-24 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	11	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	49	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	40	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiC					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	2.71	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	67.6	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	24.2	meq/L		0.05		SW6010B	12/18/08 20:41 / rh
Magnesium, sat. paste	11.9	meq/L		0.08		SW6010B	12/18/08 20:41 / rh
Sodium, sat. paste	2.24	meq/L		0.04		SW6010B	12/18/08 20:41 / rh
Sodium Adsorption Ratio (SAR)	0.53	unitless		0.01		Calculation	12/22/08 14:23 / srm
Sulfate, sat. paste	1720	mg/L	D	5		ASA10-3	12/18/08 15:02 / 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 13:40 / srm
EXCHANGEABLES							
Cation Exchange Capacity	32.4	meq/100g	D	0.08		SW6010B	12/18/08 23:23 / rh
Exchangeable Sodium Percentage	0.44	%		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 18:22 / 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: B08120276-014
Client Sample ID: PB, 24-36 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	11	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	50	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	39	%		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	3.08	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	67.1	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	27.5	meq/L		0.05		SW6010B	12/18/08 20:49 / rh
Magnesium, sat. paste	16.2	meq/L		0.08		SW6010B	12/18/08 20:49 / rh
Sodium, sat. paste	2.75	meq/L		0.04		SW6010B	12/18/08 20:49 / rh
Sodium Adsorption Ratio (SAR)	0.59	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	3.6	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	32.6	meq/100g	D	0.08		SW6010B	12/18/08 23:27 / rh
Exchangeable Sodium Percentage	0.39	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.31	meq/100g	D	0.0016		SW6010B	12/16/08 18:26 / 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: B08120276-015
Client Sample ID: PB, 36-48 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	7	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	52	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	41	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiC					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	3.10	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	69.8	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	26.5	meq/L		0.05		SW6010B	12/18/08 20:53 / rh
Magnesium, sat. paste	16.9	meq/L		0.08		SW6010B	12/18/08 20:53 / rh
Sodium, sat. paste	3.24	meq/L		0.04		SW6010B	12/18/08 20:53 / rh
Sodium Adsorption Ratio (SAR)	0.70	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	4.3	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.4	meq/100g	D	0.08		SW6010B	12/18/08 23:38 / rh
Exchangeable Sodium Percentage	0.54	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.39	meq/100g	D	0.0016		SW6010B	12/16/08 18:30 / 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: B08120276-016
Client Sample ID: PB, 48-60 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	5	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	51	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	44	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiC					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	3.53	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	69.2	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	27.3	meq/L		0.05		SW6010B	12/18/08 20:57 / rh
Magnesium, sat. paste	20.1	meq/L		0.08		SW6010B	12/18/08 20:57 / rh
Sodium, sat. paste	6.41	meq/L		0.04		SW6010B	12/18/08 20:57 / rh
Sodium Adsorption Ratio (SAR)	1.32	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	4.5	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	31.5	meq/100g	D	0.08		SW6010B	12/18/08 23:42 / rh
Exchangeable Sodium Percentage	1.16	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.81	meq/100g	D	0.0016		SW6010B	12/16/08 18:33 / 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: B08120276-017
Client Sample ID: PB, 60-72 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	5	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	50	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	45	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiC					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	3.73	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	67.1	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	25.7	meq/L		0.05		SW6010B	12/18/08 21:00 / rh
Magnesium, sat. paste	19.1	meq/L		0.08		SW6010B	12/18/08 21:00 / rh
Sodium, sat. paste	11.0	meq/L		0.04		SW6010B	12/18/08 21:00 / rh
Sodium Adsorption Ratio (SAR)	2.33	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO ₃	4.4	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	31.3	meq/100g	D	0.08		SW6010B	12/18/08 23:46 / rh
Exchangeable Sodium Percentage	1.82	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	1.3	meq/100g	D	0.0016		SW6010B	12/16/08 18:37 / 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: B08120276-018
Client Sample ID: PB, 72-96 inches

Report Date: 12/31/08
Collection Date: 11/25/08 10:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	8	%		1		ASA15-5	12/22/08 14:23 / srm
Silt	46	%		1		ASA15-5	12/22/08 14:23 / srm
Clay	46	%		1		ASA15-5	12/22/08 14:23 / srm
Texture	SiC					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	3.83	mmhos/cm		0.01		ASA10-3	12/22/08 14:23 / srm
Saturation	72.7	%		0.1		USDA27a	12/22/08 14:23 / srm
Calcium, sat. paste	27.4	meq/L		0.05		SW6010B	12/18/08 21:04 / rh
Magnesium, sat. paste	18.3	meq/L		0.08		SW6010B	12/18/08 21:04 / rh
Sodium, sat. paste	12.0	meq/L		0.04		SW6010B	12/18/08 21:04 / rh
Sodium Adsorption Ratio (SAR)	2.50	unitless		0.01		Calculation	12/22/08 14:23 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.0	%		0.1		USDA23c	12/30/08 15:51 / srm
EXCHANGEABLES							
Cation Exchange Capacity	30.4	meq/100g	D	0.08		SW6010B	12/18/08 23:50 / rh
Exchangeable Sodium Percentage	1.84	%		0.01		USDA20a	12/24/08 09:58 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	1.4	meq/100g	D	0.0016		SW6010B	12/16/08 18:41 / 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.