



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08120270-001
Client Sample ID: PF, 0-2 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	22	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	43	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	35	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.00	s.u.		0.10		ASAM10-3.2	12/22/08 13:43 / srm
Conductivity, sat. paste	0.86	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	83.5	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	6.04	meq/L		0.05		SW6010B	12/17/08 18:00 / rlh
Magnesium, sat. paste	3.90	meq/L		0.08		SW6010B	12/17/08 18:00 / rlh
Sodium, sat. paste	0.47	meq/L		0.04		SW6010B	12/17/08 18:00 / rlh
Sodium Adsorption Ratio (SAR)	0.21	unitless		0.01		Calculation	12/22/08 13:43 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.2	%		0.1		USDA23c	12/29/08 16:43 / srm
EXCHANGEABLES							
Cation Exchange Capacity	46.1	meq/100g	D	0.08		SW6010B	12/17/08 06:54 / rlh
Exchangeable Sodium Percentage	0.10	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.084	meq/100g	D	0.0016		SW6010B	12/16/08 13:24 / rlh

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: B08120270-002
Client Sample ID: PF, 0-6 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
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 13:43 / srm
Silt	43	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	37	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	SiCL					ASA15-5	12/22/08 13:43 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	6.90	s.u.		0.10		ASAM10-3.2	12/22/08 13:43 / srm
Conductivity, sat. paste	0.56	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	72.7	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	3.52	meq/L		0.05		SW6010B	12/17/08 18:08 / rlh
Magnesium, sat. paste	2.22	meq/L		0.08		SW6010B	12/17/08 18:08 / rlh
Sodium, sat. paste	0.48	meq/L		0.04		SW6010B	12/17/08 18:08 / rlh
Sodium Adsorption Ratio (SAR)	0.29	unitless		0.01		Calculation	12/22/08 13:43 / srm
Sulfate, sat. paste	50	mg/L		1		ASA10-3	12/17/08 23:20 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.2	%		0.1		USDA23c	12/29/08 16:43 / srm
Phosphorus, Olsen	2	mg/kg		1		ASA24-5	12/12/08 10:21 / srm
Nitrate as N, KCL Extract	7	mg/kg		1		ASA33-8	12/19/08 13:23 / srm
Organic Matter	4.91	%		0.02		ASA29-3	12/22/08 14:33 / srm
EXCHANGEABLES							
Cation Exchange Capacity	44.0	meq/100g	D	0.08		SW6010B	12/17/08 07:02 / rlh
Exchangeable Sodium Percentage	0.15	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.10	meq/100g	D	0.0016		SW6010B	12/16/08 13:31 / rlh
Potassium, available	263	mg/kg	D	0.13		SW6010B	12/16/08 13:31 / rlh
METALS, DTPA EXTRACTABLE							
Zinc	1.0	mg/kg		0.1		SW6010B	12/23/08 22:17 / rlh

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: B08120270-003
Client Sample ID: PF, 6-12 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	16	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	43	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	41	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	SiC					ASA15-5	12/22/08 13:43 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.00	s.u.		0.10		ASAM10-3.2	12/22/08 13:43 / srm
Conductivity, sat. paste	0.42	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	66.8	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	2.41	meq/L		0.05		SW6010B	12/17/08 18:20 / rlh
Magnesium, sat. paste	1.46	meq/L		0.08		SW6010B	12/17/08 18:20 / rlh
Sodium, sat. paste	0.55	meq/L		0.04		SW6010B	12/17/08 18:20 / rlh
Sodium Adsorption Ratio (SAR)	0.39	unitless		0.01		Calculation	12/22/08 13:43 / srm
Sulfate, sat. paste	49	mg/L		1		ASA10-3	12/17/08 23:32 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.4	%		0.1		USDA23c	12/29/08 16:43 / srm
Nitrate as N, KCL Extract	6	mg/kg		1		ASA33-8	12/19/08 13:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	41.3	meq/100g	D	0.08		SW6010B	12/17/08 07:09 / rlh
Exchangeable Sodium Percentage	0.25	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.14	meq/100g	D	0.0016		SW6010B	12/16/08 13:39 / rlh

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: B08120270-004
Client Sample ID: PF, 12-24 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	22	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	39	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	39	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / 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 13:43 / srm
Conductivity, sat. paste	0.46	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	64.9	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	2.76	meq/L		0.05		SW6010B	12/17/08 18:23 / rlh
Magnesium, sat. paste	1.54	meq/L		0.08		SW6010B	12/17/08 18:23 / rlh
Sodium, sat. paste	0.64	meq/L		0.04		SW6010B	12/17/08 18:23 / rlh
Sodium Adsorption Ratio (SAR)	0.44	unitless		0.01		Calculation	12/22/08 13:43 / srm
Sulfate, sat. paste	37	mg/L		1		ASA10-3	12/17/08 23:43 / kh
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	2.1	%		0.1		USDA23c	12/29/08 16:43 / srm
Nitrate as N, KCL Extract	5	mg/kg		1		ASA33-8	12/19/08 13:26 / srm
EXCHANGEABLES							
Cation Exchange Capacity	40.5	meq/100g	D	0.08		SW6010B	12/17/08 07:13 / rlh
Exchangeable Sodium Percentage	0.27	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.15	meq/100g	D	0.0016		SW6010B	12/16/08 13:43 / rlh

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: B08120270-005
Client Sample ID: PF, 24-36 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	30	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	36	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	34	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / 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 13:43 / srm
Conductivity, sat. paste	0.52	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	60.0	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	3.18	meq/L		0.05		SW6010B	12/17/08 18:27 / rlh
Magnesium, sat. paste	1.77	meq/L		0.08		SW6010B	12/17/08 18:27 / rlh
Sodium, sat. paste	0.82	meq/L		0.04		SW6010B	12/17/08 18:27 / rlh
Sodium Adsorption Ratio (SAR)	0.52	unitless		0.01		Calculation	12/22/08 13:43 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.0	%		0.1		USDA23c	12/29/08 16:43 / srm
EXCHANGEABLES							
Cation Exchange Capacity	37.5	meq/100g	D	0.08		SW6010B	12/17/08 07:17 / rlh
Exchangeable Sodium Percentage	0.28	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.15	meq/100g	D	0.0016		SW6010B	12/16/08 13:54 / rlh

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: B08120270-006
Client Sample ID: PF, 36-48 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	32	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	35	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	33	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.90	s.u.		0.10		ASAM10-3.2	12/22/08 13:43 / srm
Conductivity, sat. paste	0.58	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	58.6	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	3.40	meq/L		0.05		SW6010B	12/17/08 18:31 / rlh
Magnesium, sat. paste	2.17	meq/L		0.08		SW6010B	12/17/08 18:31 / rlh
Sodium, sat. paste	0.97	meq/L		0.04		SW6010B	12/17/08 18:31 / rlh
Sodium Adsorption Ratio (SAR)	0.58	unitless		0.01		Calculation	12/22/08 13:43 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.5	%		0.1		USDA23c	12/29/08 16:43 / srm
EXCHANGEABLES							
Cation Exchange Capacity	35.9	meq/100g	D	0.08		SW6010B	12/17/08 07:21 / rlh
Exchangeable Sodium Percentage	0.35	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.18	meq/100g	D	0.0016		SW6010B	12/16/08 13:58 / rlh

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: B08120270-007
Client Sample ID: PF, 48-60 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	30	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	35	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	35	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.90	s.u.		0.10		ASAM10-3.2	12/22/08 13:43 / srm
Conductivity, sat. paste	0.91	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	62.4	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	6.26	meq/L		0.05		SW6010B	12/17/08 18:35 / rlh
Magnesium, sat. paste	3.49	meq/L		0.08		SW6010B	12/17/08 18:35 / rlh
Sodium, sat. paste	1.28	meq/L		0.04		SW6010B	12/17/08 18:35 / rlh
Sodium Adsorption Ratio (SAR)	0.58	unitless		0.01		Calculation	12/22/08 13:43 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.7	%		0.1		USDA23c	12/29/08 16:43 / srm
EXCHANGEABLES							
Cation Exchange Capacity	38.8	meq/100g	D	0.08		SW6010B	12/17/08 07:25 / rlh
Exchangeable Sodium Percentage	0.29	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.19	meq/100g	D	0.0016		SW6010B	12/16/08 14:02 / rlh

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: B08120270-008
Client Sample ID: PF, 60-72 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	38	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	31	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	31	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.90	s.u.		0.10		ASAM10-3.2	12/22/08 13:43 / srm
Conductivity, sat. paste	0.73	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	55.9	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	4.44	meq/L		0.05		SW6010B	12/17/08 18:39 / rlh
Magnesium, sat. paste	2.77	meq/L		0.08		SW6010B	12/17/08 18:39 / rlh
Sodium, sat. paste	1.13	meq/L		0.04		SW6010B	12/17/08 18:39 / rlh
Sodium Adsorption Ratio (SAR)	0.60	unitless		0.01		Calculation	12/22/08 13:43 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.6	%		0.1		USDA23c	12/29/08 16:43 / srm
EXCHANGEABLES							
Cation Exchange Capacity	32.7	meq/100g	D	0.08		SW6010B	12/17/08 07:29 / rlh
Exchangeable Sodium Percentage	0.47	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.22	meq/100g	D	0.0016		SW6010B	12/16/08 14:06 / rlh

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: B08120270-009
Client Sample ID: PF, 72-96 inches

Report Date: 12/30/08
Collection Date: 11/26/08 13:30
Date Received: 12/02/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	34	%		1		ASA15-5	12/22/08 13:43 / srm
Silt	34	%		1		ASA15-5	12/22/08 13:43 / srm
Clay	32	%		1		ASA15-5	12/22/08 13:43 / srm
Texture	CL					ASA15-5	12/22/08 13:43 / 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 13:43 / srm
Conductivity, sat. paste	3.02	mmhos/cm		0.01		ASA10-3	12/22/08 13:43 / srm
Saturation	51.3	%		0.1		USDA27a	12/22/08 13:43 / srm
Calcium, sat. paste	27.7	meq/L		0.05		SW6010B	12/17/08 18:43 / rlh
Magnesium, sat. paste	16.2	meq/L		0.08		SW6010B	12/17/08 18:43 / rlh
Sodium, sat. paste	2.26	meq/L		0.04		SW6010B	12/17/08 18:43 / rlh
Sodium Adsorption Ratio (SAR)	0.48	unitless		0.01		Calculation	12/22/08 13:43 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.6	%		0.1		USDA23c	12/29/08 16:43 / srm
EXCHANGEABLES							
Cation Exchange Capacity	34.7	meq/100g	D	0.08		SW6010B	12/17/08 07:41 / rlh
Exchangeable Sodium Percentage	0.33	%		0.01		USDA20a	12/22/08 13:43 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.23	meq/100g	D	0.0016		SW6010B	12/16/08 14:09 / rlh

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.