



LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060400-001
Client Sample ID: PH, 0-2 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	10	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	57	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	33	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	7.40	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	0.80	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	56.3	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	4.82	meq/L		0.05		SW6010B	06/12/08 15:17 / rlh
Magnesium, sat. paste	3.23	meq/L		0.08		SW6010B	06/12/08 15:17 / rlh
Sodium, sat. paste	0.43	meq/L		0.04		SW6010B	06/12/08 15:17 / rlh
Sodium Adsorption Ratio (SAR)	0.21	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.3	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	43.3	meq/100g	D	0.08		SW6010B	06/11/08 16:44 / rlh
Exchangeable Sodium Percentage	0.17	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.098	meq/100g	D	0.00039		SW6010B	06/10/08 22:39 / 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: B08060400-002
Client Sample ID: PH, 0-6 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	26	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	41	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	33	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	CL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	6.80	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	0.53	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	54.3	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	3.07	meq/L		0.05		SW6010B	06/12/08 15:24 / rlh
Magnesium, sat. paste	2.02	meq/L		0.08		SW6010B	06/12/08 15:24 / rlh
Sodium, sat. paste	0.32	meq/L		0.04		SW6010B	06/12/08 15:24 / rlh
Sodium Adsorption Ratio (SAR)	0.20	unitless		0.01		Calculation	06/13/08 13:47 / srm
Sulfate	0.84	meq/L		0.02		ASA10-3	06/12/08 15:43 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	0.9	%		0.1		USDA23c	06/13/08 14:24 / srm
Phosphorus, Olsen	3	mg/kg		1		ASA24-5	06/13/08 13:08 / srm
Nitrate as N, KCL Extract	3	mg/kg		1		ASA33-8	06/13/08 14:52 / srm
Organic Matter	4.24	%		0.02		ASA29-3	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	44.5	meq/100g	D	0.08		SW6010B	06/11/08 16:52 / rlh
Exchangeable Sodium Percentage	0.13	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.076	meq/100g	D	0.00039		SW6010B	06/10/08 22:47 / rlh
Potassium, available	243	mg/kg	D	0.13		SW6010B	06/10/08 22:47 / rlh
METALS, DTPA EXTRACTABLE							
Zinc	0.8	mg/kg		0.1		SW6010B	06/13/08 21:17 / rlh

Report Definitions:

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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: B08060400-003
Client Sample ID: PH, 6-12 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	14	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	53	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	33	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	0.91	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	53.2	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	4.39	meq/L		0.05		SW6010B	06/12/08 15:28 / rlh
Magnesium, sat. paste	3.77	meq/L		0.08		SW6010B	06/12/08 15:28 / rlh
Sodium, sat. paste	1.36	meq/L		0.04		SW6010B	06/12/08 15:28 / rlh
Sodium Adsorption Ratio (SAR)	0.67	unitless		0.01		Calculation	06/13/08 13:47 / srm
Sulfate	5.81	meq/L		0.02		ASA10-3	06/12/08 16:41 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	1.4	%		0.1		USDA23c	06/13/08 14:24 / srm
Nitrate as N, KCL Extract	2	mg/kg		1		ASA33-8	06/13/08 14:52 / srm
EXCHANGEABLES							
Cation Exchange Capacity	36.3	meq/100g	D	0.08		SW6010B	06/11/08 17:07 / rlh
Exchangeable Sodium Percentage	0.45	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.24	meq/100g	D	0.00039		SW6010B	06/10/08 22:54 / rlh

Report Definitions:

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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: B08060400-004
Client Sample ID: PH, 12-24 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	19	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	52	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	29	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	1.71	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	48.8	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	8.50	meq/L		0.05		SW6010B	06/12/08 15:32 / rlh
Magnesium, sat. paste	6.24	meq/L		0.08		SW6010B	06/12/08 15:32 / rlh
Sodium, sat. paste	4.80	meq/L		0.04		SW6010B	06/12/08 15:32 / rlh
Sodium Adsorption Ratio (SAR)	1.77	unitless		0.01		Calculation	06/13/08 13:47 / srm
Sulfate	17.0	meq/L	D	0.1		ASA10-3	06/12/08 16:53 / qed
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.2	%		0.1		USDA23c	06/13/08 14:24 / srm
Nitrate as N, KCL Extract	2	mg/kg		1		ASA33-8	06/13/08 14:53 / srm
EXCHANGEABLES							
Cation Exchange Capacity	33.1	meq/100g	D	0.08		SW6010B	06/11/08 17:11 / rlh
Exchangeable Sodium Percentage	1.40	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.70	meq/100g	D	0.00039		SW6010B	06/10/08 23:29 / rlh

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LABORATORY ANALYTICAL REPORT

Client: Marathon Ashland Pipeline
Project: PDC AMPP
Lab ID: B08060400-005
Client Sample ID: PH, 24-36 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	14	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	52	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	34	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	3.74	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	46.9	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	25.6	meq/L		0.05		SW6010B	06/12/08 15:35 / rlh
Magnesium, sat. paste	25.8	meq/L		0.08		SW6010B	06/12/08 15:35 / rlh
Sodium, sat. paste	5.78	meq/L		0.04		SW6010B	06/12/08 15:35 / rlh
Sodium Adsorption Ratio (SAR)	1.14	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.4	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	28.8	meq/100g	D	0.08		SW6010B	06/11/08 17:14 / rlh
Exchangeable Sodium Percentage	1.06	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.58	meq/100g	D	0.00039		SW6010B	06/10/08 23:33 / 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: B08060400-006
Client Sample ID: PH, 36-48 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	28	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	39	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	33	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	CL					ASA15-5	06/13/08 14:24 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE							
pH, sat. paste	8.10	s.u.		0.10		ASAM10-3.2	06/13/08 13:47 / srm
Conductivity, sat. paste	0.55	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	46.2	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	2.92	meq/L		0.05		SW6010B	06/16/08 14:04 / rlh
Magnesium, sat. paste	1.86	meq/L		0.08		SW6010B	06/16/08 14:04 / rlh
Sodium, sat. paste	0.82	meq/L		0.04		SW6010B	06/16/08 14:04 / rlh
Sodium Adsorption Ratio (SAR)	0.53	unitless		0.01		Calculation	06/17/08 12:25 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	5.1	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	34.5	meq/100g	D	0.08		SW6010B	06/11/08 17:18 / rlh
Exchangeable Sodium Percentage	0.45	%		0.01		USDA20a	06/17/08 12:25 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.19	meq/100g	D	0.00098		SW6010B	06/16/08 14:49 / 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: B08060400-007
Client Sample ID: PH, 48-60 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	9	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	53	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	38	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	3.72	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	52.7	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	26.6	meq/L		0.05		SW6010B	06/16/08 14:07 / rlh
Magnesium, sat. paste	22.2	meq/L		0.08		SW6010B	06/16/08 14:07 / rlh
Sodium, sat. paste	8.52	meq/L		0.04		SW6010B	06/16/08 14:07 / rlh
Sodium Adsorption Ratio (SAR)	1.73	unitless		0.01		Calculation	06/17/08 12:25 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.3	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	28.6	meq/100g	D	0.08		SW6010B	06/11/08 17:22 / rlh
Exchangeable Sodium Percentage	1.37	%		0.01		USDA20a	06/17/08 12:25 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.84	meq/100g	D	0.00098		SW6010B	06/16/08 14:53 / 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: B08060400-008
Client Sample ID: PH, 60-72 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	20	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	45	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	35	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	SiCL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	3.15	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	49.7	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	27.5	meq/L		0.05		SW6010B	06/12/08 15:58 / rlh
Magnesium, sat. paste	16.8	meq/L		0.08		SW6010B	06/12/08 15:58 / rlh
Sodium, sat. paste	2.55	meq/L		0.04		SW6010B	06/12/08 15:58 / rlh
Sodium Adsorption Ratio (SAR)	0.54	unitless		0.01		Calculation	06/13/08 13:47 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	10.3	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	29.8	meq/100g	D	0.08		SW6010B	06/11/08 17:26 / rlh
Exchangeable Sodium Percentage	0.22	%		0.01		USDA20a	06/16/08 08:33 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.19	meq/100g	D	0.00039		SW6010B	06/10/08 23:45 / 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: B08060400-009
Client Sample ID: PH, 72-96 Inches

Report Date: 07/24/08
Collection Date: 06/03/08 13:00
Date Received: 06/04/08
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Sand	40	%		1		ASA15-5	06/13/08 14:24 / srm
Silt	33	%		1		ASA15-5	06/13/08 14:24 / srm
Clay	27	%		1		ASA15-5	06/13/08 14:24 / srm
Texture	CL					ASA15-5	06/13/08 14:24 / 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	06/13/08 13:47 / srm
Conductivity, sat. paste	2.92	mmhos/cm		0.01		ASA10-3	06/13/08 13:47 / srm
Saturation	41.4	%		0.1		USDA27a	06/13/08 13:47 / srm
Calcium, sat. paste	27.4	meq/L		0.05		SW6010B	06/16/08 14:11 / rlh
Magnesium, sat. paste	14.1	meq/L		0.08		SW6010B	06/16/08 14:11 / rlh
Sodium, sat. paste	2.10	meq/L		0.04		SW6010B	06/16/08 14:11 / rlh
Sodium Adsorption Ratio (SAR)	0.46	unitless		0.01		Calculation	06/17/08 12:25 / srm
CHEMICAL CHARACTERISTICS							
Lime as CaCO3	4.2	%		0.1		USDA23c	06/13/08 14:24 / srm
EXCHANGEABLES							
Cation Exchange Capacity	27.5	meq/100g	D	0.08		SW6010B	06/11/08 17:29 / rlh
Exchangeable Sodium Percentage	0.40	%		0.01		USDA20a	06/17/08 12:25 / srm
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, extractable	0.20	meq/100g	D	0.00098		SW6010B	06/16/08 14:56 / 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.