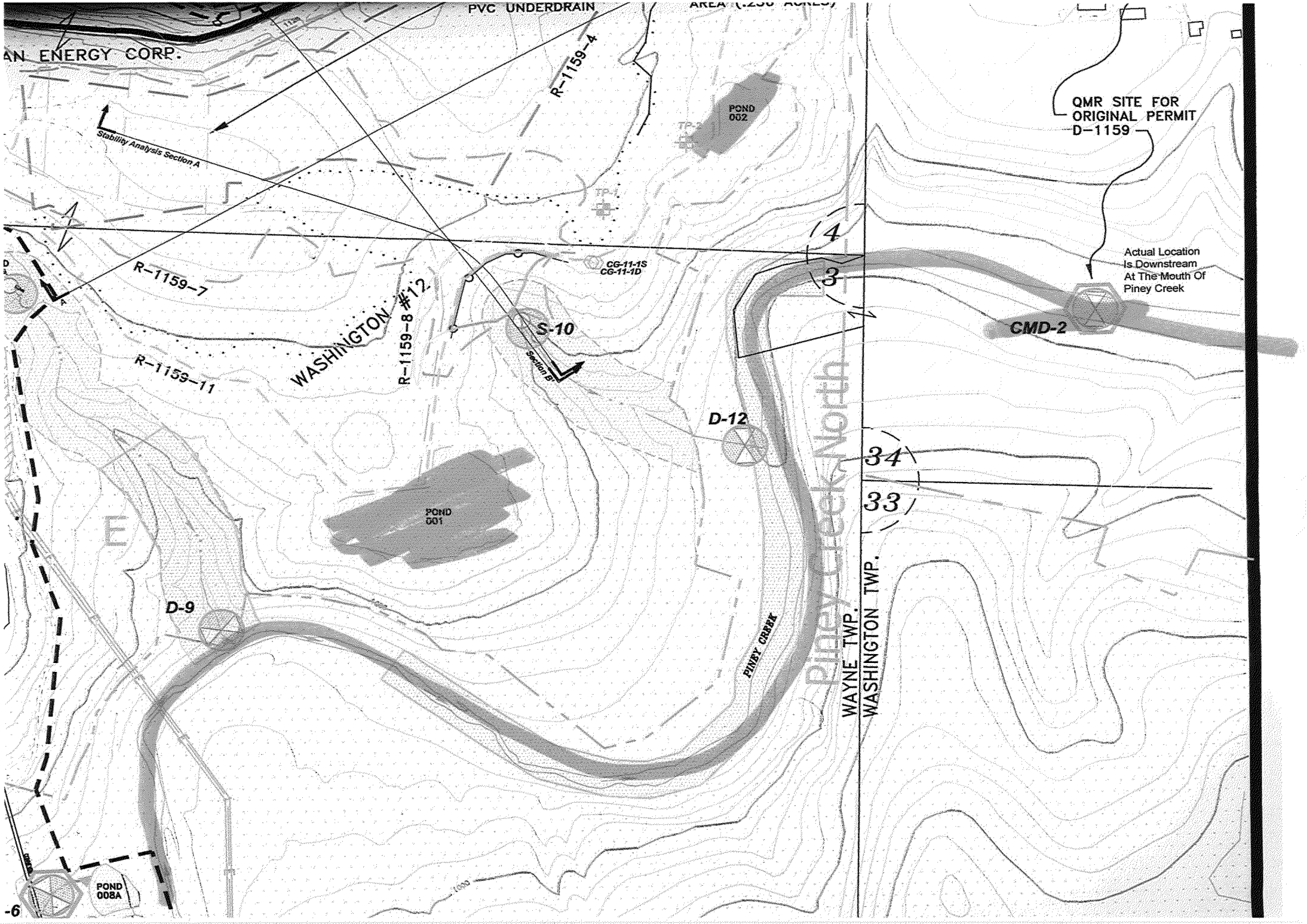

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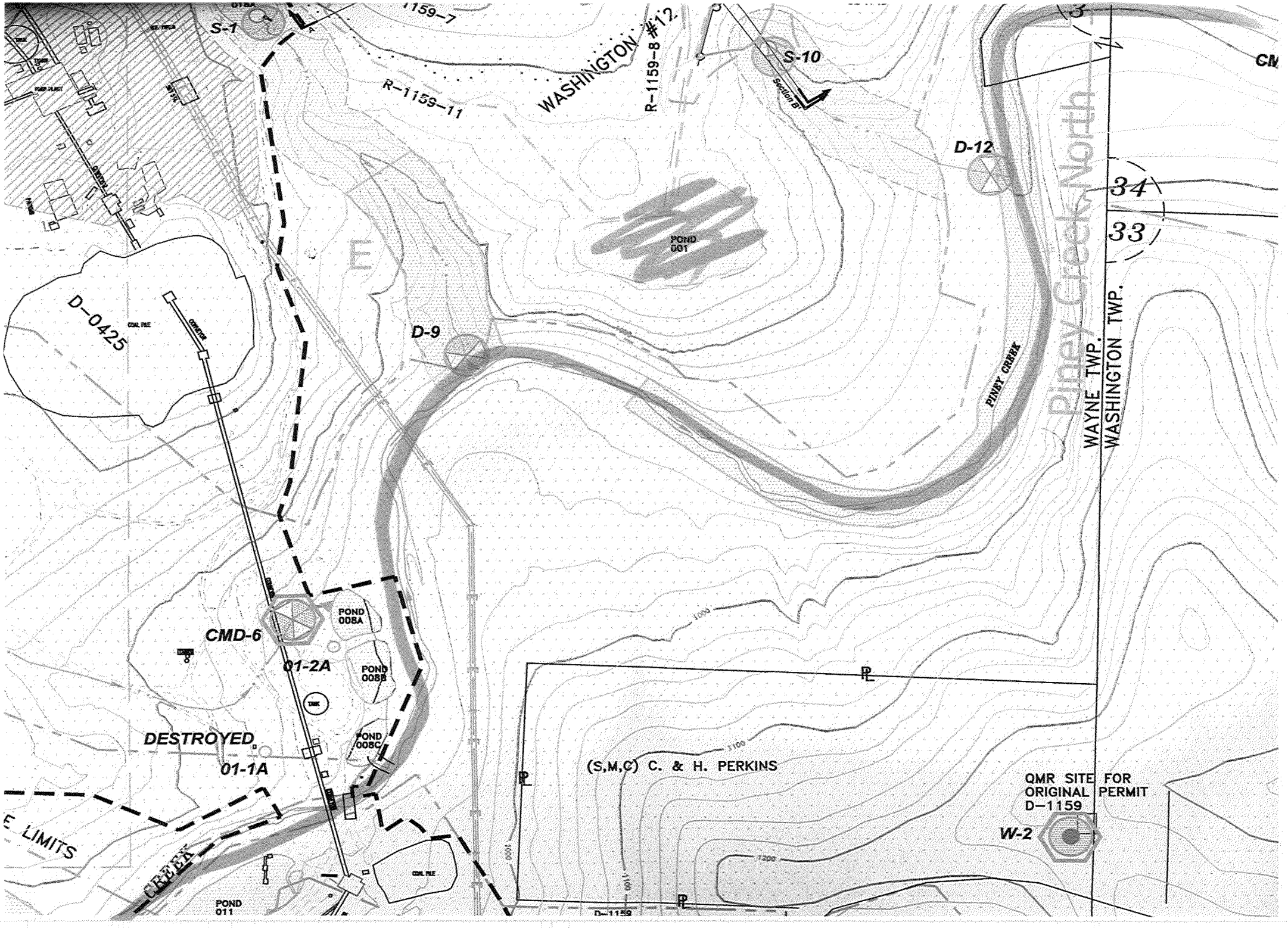

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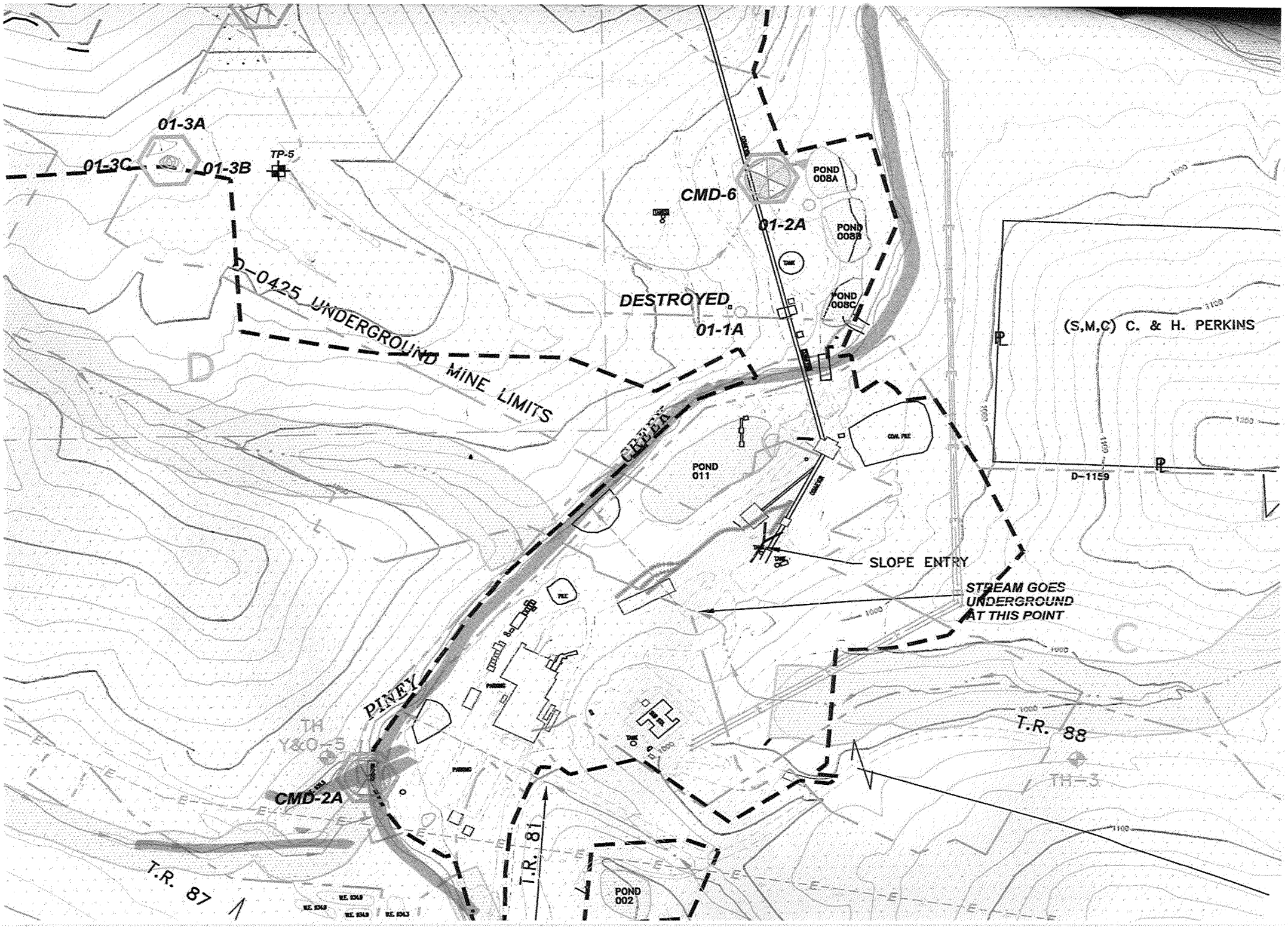

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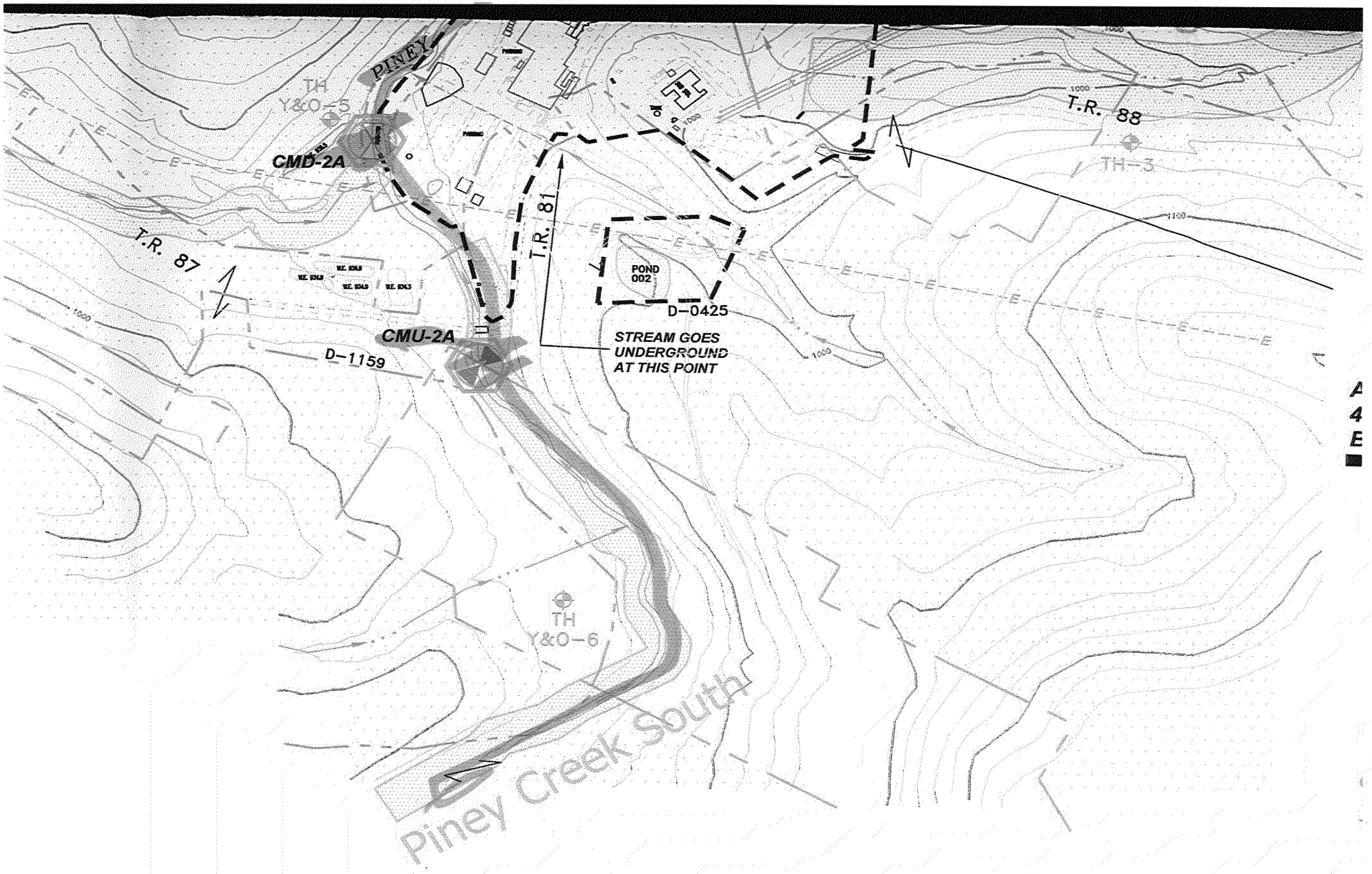

BUFFER ZONE (100')

DEDICATED CONSERVATION EASEMENT AREAS A,B,C

TP-# TEST PITS (18 January 2012)

TP-# TEST PITS

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OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINES AND RECLAMATION

Quarterly Monitoring Report Sheet
(Submit in Quadruplicate)

Permittee: American Energy Corporation Permit Number: D-0425

____ 1st Qtr., ____ 2nd Qtr., ____ 3rd Qtr., X 4th Qtr., (X appropriate blank)

____ Premining X Mining ____ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	CMD-1	CMD-2	CMD-2A	CMD-6		
Surface Elevation of Monitoring Site						
Depth of Well Below Land Surface (Feet)	----	----	----	----		
Static Water Level of Well Below Land Surface (feet)	----	----	----	----		
Stream or Spring Discharge (cfs or gpm)	2.86 cfs	12.9 cfs	0.53 cfs	0.041 cfs		
Date Measured	11/30/12	11/30/12	11/30/12	11/30/12		
pH (Standard Units)	8.35[H]	8.31[H]	8.30[H]	8.00[H]		
Total Acidity (mg/L $CaCO_3$)	ND	ND	ND	13.0		
Total Alkalinity (mg/L $CaCO_3$)	181	139	179	497		
Total Iron (mg/L)	0.046	0.057	0.083	0.170		
Total Manganese (mg/L)	0.004	0.014	0.199	0.505		
Total Suspended Solids (mg/L)	ND	ND	ND	35.0		
Total Hardness (mg/L $CaCO_3$)	226	203	142	963		
Total Sulfates (mg/L)	596	77.1	71.2	5120		
Specific Conductance (at 25°C in µmhos/cm)	1720	486	503	11,500		

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits
[ND] Not Detected at PQL or MDL

Permittee's Signature: Michael Kelley Date: 1-14-13

Laboratory Name: TraDet Laboratories, Inc.

Analyst's Signature: [illegible] Date: January 8, 2013

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CAMBRIDGE

Quarterly Monitoring Report Sheet
(Submit in Quadruplicate)

Permittee: American Energy Corporation Permit Number: D-0425

____ 1st Qtr., ____ 2nd Qtr., ____ 3rd Qtr., X 4th Qtr., (X appropriate blank)

____ Premining X Mining ____ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	CMD-1	CMD-2	CMD-2A	CMD-6		
Surface Elevation of Monitoring Site						
Depth of Well Below Land Surface (Feet)	----	----	----	----		
Static Water Level of Well Below Land Surface (feet)	----	----	----	----		
Stream or Spring Discharge (cfs or gpm)	2.86 cfs	12.9 cfs	0.53 cfs	0.041 cfs		
Date Measured	11/30/12	11/30/12	11/30/12	11/30/12		
pH (Standard Units)	8.35[H]	8.31[H]	8.30[H]	8.00[H]		
Total Acidity (mg/L $CaCO_3$)	ND	ND	ND	13.0		
Total Alkalinity (mg/L $CaCO_3$)	181	139	179	497		
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Total Manganese (mg/L)	0.004	0.014	0.199	0.505		
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Specific Conductance (at 25°C in µmhos/cm)	1720	486	503	11,500		

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits
[ND] Not Detected at PQL or MDL

Permittee's Signature: Michael Kelley Date: 1-14-13

Laboratory Name: TraDet Laboratories, Inc.

Analyst's Signature: [illegible] Date: January 8, 2013

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CAMBRIDGE

Quarterly Monitoring Report Sheet
(Submit in Quadruplicate)

Permittee: American Energy Corporation Permit Number: D-0425

X 1st Qtr., ____ 2nd Qtr., ____ 3rd Qtr., ____ 4th Qtr., (X appropriate blank)

____ Premining X Mining ____ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	CMD-1	CMD-2	CMD-2A	CMD-6		
Surface Elevation of Monitoring Site						
Depth of Well Below Land Surface (Feet)	----	----	----	----		
Static Water Level of Well Below Land Surface (feet)	----	----	----	----		
Stream or Spring Discharge (cfs or gpm)	67.36 cfs	8.77 cfs	2.25 cfs	100 gpm		
Date Measured	03/20/13	03/15/13	03/15/13	03/15/13		
pH (Standard Units)	8.23[H]	8.07[H]	8.08[H]	8.15[H]		
Total Acidity (mg/L $CaCO_3$)	0.40[J]	1.19	1.30	6.11		
Total Alkalinity (mg/L $CaCO_3$)	98.8	89.4	101	417		
Total Iron (mg/L)	0.237	0.161	0.134	0.075		
Total Manganese (mg/L)	0.028	0.045	0.049	0.776		
Total Suspended Solids (mg/L)	4.0[J]	ND	ND	16.0		
Total Hardness (mg/L $CaCO_3$)	144	110	120	970		
Total Sulfates (mg/L)	430	43.7	41.2	3360		
Specific Conductance (at 25°C in µmhos/cm)	318	398	338	10,400		

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits
Minimum Detection Limit for Flow = 0.01 GPM
Minimum Detection Limit for Flow = 0.01 CFS

Permittee's Signature: Michael Kelley Date: 4-15-13

Laboratory Name: TraDet Laboratories

Analyst's Signature: RRW Date: April 15, 2013

COLUMBUS

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINES AND RECLAMATION

Quarterly Monitoring Report Sheet
(Submit in Quadruplicate)

Permittee: American Energy Corporation Permit Number: D-0425

X 1st Qtr., ____ 2nd Qtr., ____ 3rd Qtr., ____ 4th Qtr., (X appropriate blank)

____ Premining X Mining ____ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	CMU-1	CMU-2	CMU-2A			
Surface Elevation of Monitoring Site						
Depth of Well Below Land Surface (Feet)	----	----	----			
Static Water Level of Well Below Land Surface (feet)	----	----	----			
Stream or Spring Discharge (cfs or gpm)	77.21 cfs	1.68 cfs	4.80 cfs			
Date Measured	03/20/13	03/15/13	03/15/13			
pH (Standard Units)	8.20[H]	8.00[H]	8.02[H]			
Total Acidity (mg/L $CaCO_3$)	0.48[J]	1.82	1.24			
Total Alkalinity (mg/L $CaCO_3$)	100	99.2	83.0			
Total Iron (mg/L)	0.210	0.140	0.175			
Total Manganese (mg/L)	0.029	0.015	0.039			
Total Suspended Solids (mg/L)	4.0[J]	ND	ND			
Total Hardness (mg/L $CaCO_3$)	143	115	103			
Total Sulfates (mg/L)	40.9	39.0	27.0			
Specific Conductance (at 25°C in µmhos/cm)	312	379	247			

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits
Minimum Detection Limit for Flow = 0.01 GPM
Minimum Detection Limit for Flow = 0.01 CFS

Permittee's Signature: Michael Kelley Date: 4-15-13

Laboratory Name: TraDet Laboratories

Analyst's Signature: RHW Date: April 15, 2013

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DIVISION OF MINES AND RECLAMATION

Quarterly Monitoring Report Sheet
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Permittee: American Energy Corporation Permit Number: D-0425

X 1st Qtr., ____ 2nd Qtr., ____ 3rd Qtr., ____ 4th Qtr., (X appropriate blank)

____ Premining X Mining ____ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	CMD-1	CMD-2	CMD-2A	CMD-6		
Surface Elevation of Monitoring Site						
Depth of Well Below Land Surface (Feet)	----	----	----	----		
Static Water Level of Well Below Land Surface (feet)	----	----	----	----		
Stream or Spring Discharge (cfs or gpm)	110 cfs	12.1 cfs	14.1 cfs	221,730 GPD		
Date Measured	03/06/12	03/08/12	03/08/12	03/10/12		
pH (Standard Units)	8.11[H]	8.14[H]	8.11[H]	8.04[H]		
Total Acidity (mg/L $CaCO_3$)	1.44	1.61	1.55	5.82		
Total Alkalinity (mg/L $CaCO_3$)	119	154	128	287		
Total Iron (mg/L)	0.068	0.068	0.066	0.178		
Total Manganese (mg/L)	0.022	0.027	0.067	0.596		
Total Suspended Solids (mg/L)	5.0[J]	ND	ND	ND		
Total Hardness (mg/L $CaCO_3$)	177	208	133	762		
Total Sulfates (mg/L)	65.2	562	61.0	3240		
Specific Conductance (at 25°C in µmhos/cm)	354	1300	341	5805		

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits

Permittee's Signature: Mike Kelley Date: 4-17-12

Laboratory Name: TraDet Laboratories

Analyst's Signature: William Thompson (SAP) Date: April 16, 2012

COLUMBUS

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINES AND RECLAMATION

Quarterly Monitoring Report Sheet
(Submit in Quadruplicate)

;mittee: American Energy Corporation Permit Number: D-0425

X 1st Qtr., ___ 2nd Qtr., ___ 3rd Qtr., ___ 4th Qtr., (X appropriate blank)

___ Premining X Mining ___ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	CMU-1	CMU-2	CMU-2A			
Surface Elevation of Monitoring Site						
Depth of Well Below Land Surface (Feet)	----	----	----			
Static Water Level of Well Below Land Surface (feet)	----	----	----			
Stream or Spring Discharge (cfs or gpm)	105 cfs	11.6 cfs	13.6 cfs			
Date Measured	03/06/12	03/08/12	03/08/12			
pH (Standard Units)	8.11[H]	7.98[H]	7.42[H]			
Total Acidity (mg/L $CaCO_3$)	1.61	2.61	2.76			
Total Alkalinity (mg/L $CaCO_3$)	127	125	96.6			
Total Iron (mg/L)	0.038	0.057	0.097			
Total Manganese (mg/L)	0.039	0.029	0.060			
Total Suspended Solids (mg/L)	ND	ND	ND			
Total Hardness (mg/L $CaCO_3$)	160	121	107			
Total Sulfates (mg/L)	45.0	51.7	37.5			
Specific Conductance (at 25°C in µmhos/cm)	320	323	258			

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits

Permittee's Signature: Mik Kelley Date: 4-17-12

Laboratory Name: TraDet Laboratories

Analyst's Signature: William Thompson (SMP) Date: April 16, 2012