HAWKMTN LABS INC

201 West Clay Avenue / Hazle Township, PA 18202

PHONE (570) 455-6011 - FAX (570) 455-6321
www.hawkmtnlabs.com

Report Narrative

Customer: Hilltop Enterprises Inc.
1157 Phoenixville Pike
Suite 102
West Chester, PA 19380

Report Date: 10/23/2013

HawkMtn WO #: 1309-00943

Subject Line: Chambers/CPGP MOD 25 Fly Ash Analysis

Only those analytes qualified with an 'N' are accredited by NELAC

** Tons of CaCO3 equivalent per 1,000 tons of material.

Any information provided by client (CLT) has not been performed by HML and is not within the HML NELAC scope of accreditation.

Data Qualifiers:
B = Analyte found in the method blank
C = Analyte has been confirmed by another instrument or method
D = Sample or extract was analyzed at a higher dilution.
E = Analyte exceeds the upper limit of the calibration curve
F = Lab fortified blank had a difference outside the QC limits
G = Failure in the ending calibration check. The average sum for the ending calibration check meets method requirements.
H = Sample run past hold time
I = Initial Calibration Verification was outside QC limits
J = Estimated concentration of an analyte between MDL (LOD) and Reporting Limit (LOQ)
M = Matrix spike recovery was outside QC limits
N = Analyte accredited under HML/NELAC accreditation
Q = Second Source Calibration Verification was outside QC limits
R = Duplicate/Matrix spike duplicate had a relative percent difference outside QC limits
S = Surrogate out of control limits
V = Continuing Calibration Verification was outside QC limits
X = User defined data qualifier
NA = Not Applicable

Limit of Quantitation (LOQ) = Laboratory Reporting Limit
Limit of Detection (LOD) = Laboratory Detection Limit

The test results meet the requirements of the NELAC and ISO 9001, except where noted.
The information contained in this analytical report is the sole property of Hawk MTN Laboratories, Inc.
and that of the client. It cannot be reproduced in any form without the consent of Hawk MTN Labs, Inc. or the client for which this report was issued. The results contained in this reports are only representative of the samples received. Conditions can vary at different sampling conditions.
Hawk MTN Laboratories, Inc. is not responsible for use or interpretation of the data included herin.

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ACCREDITED IN ACCORDANCE WITH nelac

PA DEP 40-417
EPA PA00169

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Certificate of Analysis

Customer: Hilltop Enterprises Inc.
1157 Phoenixville Pike
Suite 102
West Chester, PA 19380

Report Date: 10/23/2013

Material Tested: Fly Ash
Date Sampled: 09/02/2013 Time Sampled: 6:00
Date Received: 09/19/2013

HawkMtn WO #: 1309-00943-001
Sampler: Client
Sample Point ID: Hilltop Mod25 Ash

Client Sample ID: CPGP-FA90213-Fly Ash

Test Name	Test Results	Qual	Method	Tech	Start Date/Time	End Date/Time
Module 25A-Ash Quality			EPA SW846		@ 0:00	
pH, Solid	10.16 su	N	SW846-9045	JB	09/23/2013 @ 10:30	
Aluminum, Dry Weight	9170 mg/kg	N,D	SW846-6010B	EW	09/27/2013 @ 17:44	
Antimony, Dry Weight	2.2 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Arsenic, Dry Weight	47.4 mg/kg	N	SW846-6020	RA	09/30/2013 @ 0:00	
Barium, Dry Weight	95.3 mg/kg	N,D	SW846-6010B	EW	09/27/2013 @ 17:44	
Beryllium, Dry Weight	7.4 mg/kg	N,D,J	SW846-6010B	EW	09/30/2013 @ 17:46	
Boron, Dry Weight	443 mg/kg	N,D	SW846-6010B	EW	09/27/2013 @ 17:44	
Cadmium, Dry Weight	<1.0 J mg/kg	N	SW846-6020	RA	09/30/2013 @ 0:00	
Calcium, Dry Weight	154000 mg/kg	N,D	SW846-6010B	EW	09/30/2013 @ 14:59	
Chromium, Dry Weight	22.5 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Cobalt, Dry Weight	10.1 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Copper, Dry Weight	19.3 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Iron, Dry Weight	22100 mg/kg	N,D	SW846-6010B	EW	09/27/2013 @ 17:44	
Mercury, Dry Weight	822 ug/kg	N	SW846-7473	EW	09/26/2013 @ 17:23	
Lead, Dry Weight	10.8 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Magnesium, Dry Weight	3670 mg/kg	N,D	SW846-6010B	EW	09/30/2013 @ 14:59	
Manganese, Dry Weight	56.9 mg/kg	N,D	SW846-6010B	EW	09/27/2013 @ 17:44	
Molybdenum, Dry Weight	7.7 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Nickel, Dry Weight	32.8 mg/kg	N	SW846-6020	RA	09/27/2013 @ 0:00	
Potassium, Dry Weight	2420 mg/kg	N,D	SW846-6010B	EW	09/30/2013 @ 14:59	
Sodium, Dry Weight	986 mg/kg	N,D,J	SW846-6010B	EW	09/30/2013 @ 14:59	
Thallium, Dry Weight	2.4 mg/kg	N	SW846-6020	RA	09/30/2013 @ 0:00	
Vanadium, Dry Weight	85.1 mg/kg	N	SW846-6020	RA	09/30/2013 @ 0:00	
Zinc, Total	30.0 mg/kg	N,D	SW846-6010B	EW	09/27/2013 @ 17:44	
Total Sulfur	11.90 %		ASTM D5016-08e1	MB	10/18/2013 @ 12:07	
Acid Neutralization Potent	252 **		EPA 600/2-78-054	JB	10/02/2013 @ 9:00	
SPLP, fluid #1	10.86 su, ending	N	SM 4500 H+B	SAB	09/25/2013 @ 15:30	
Aluminum, Leachate	0.80 mg/l	N,D,J	SW846-6010B	EW	10/09/2013 @ 19:58	
Antimony, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Arsenic, Leachate	0.0136 mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Barium, Leachate	0.142 mg/l	N,D,J	SW846-6010B	EW	10/09/2013 @ 19:58	
Beryllium, Leachate	<0.02 mg/l	N,D,J	SW846-6010B	EW	10/09/2013 @ 19:58	
Boron, Leachate	4.82 mg/l	N,D	SW846-6010B	EW	10/09/2013 @ 19:58	

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Certificate of Analysis

Customer: Hilltop Enterprises Inc.
1157 Phoenixville Pike
Suite 102
West Chester, PA 19380

Report Date: 10/23/2013

Material Tested: Fly Ash
Date Sampled: 09/02/2013 Time Sampled: 6:00
Date Received: 09/19/2013

HawkMtn WO #: 1309-00943-001
Sampler: Client
Sample Point ID: Hilltop Mod25 Ash

Client Sample ID: CPGP-FA90213-Fly Ash

Test Name	Test Results	Qual	Method	Tech	Start Date/Time	End Date/Time
Cadmium, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Calcium, Leachate	546 mg/l	N,D	SW846-6010B	EW	10/11/2013 @ 16:57	
Chromium, Leachate	0.0237 mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Cobalt, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Copper, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Iron, Leachate	<0.2 mg/l	N,D,J	SW846-6010B	EW	10/09/2013 @ 19:58	
Lead, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Magnesium, Leachate	0.94 mg/l	N,D,J	SW846-6010B	EW	10/11/2013 @ 16:57	
Manganese, Leachate	<0.04 mg/l	N,D,J	SW846-6010B	EW	10/09/2013 @ 19:58	
Mercury, Leachate	0.00017 mg/l	N	EPA 245.7	EW	10/02/2013 @ 13:13	
Molybdenum, Leachate	0.140 mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Nickel, Leachate	0.0106 mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Potassium, Leachate	20.4 mg/l	N,D	SW846-6010B	EW	10/11/2013 @ 16:57	
Selenium, Leachate	<0.05 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Silver, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Sodium, Leachate	9.6 mg/l	N,D,J	SW846-6010B	EW	10/11/2013 @ 16:57	
Thallium, Leachate	<0.01 J mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Vanadium, Leachate	0.114 mg/l	N	SW846-6020	RA	10/04/2013 @ 0:00	
Zinc, Leachate	<0.02 mg/l	N,D,J	SW846-6010B	EW	10/09/2013 @ 19:58	
SPLP Fluid #3, Water	10.89 su, ending	N	SM 4500 H+B	SAB	09/25/2013 @ 15:30	
* Chloride, Leachate	270 mg/l	N	EPA 300.0	JB	10/02/2013 @ 17:24	
Fluoride, Leachate	3.18 mg/l	N	EPA 300.0	JB	09/30/2013 @ 15:52	
Nitrite, Leachate	<1.0 mg/l	N	EPA 300.0	JB	09/30/2013 @ 15:52	
Nitrate, Leachate	<5.0 mg/l	N	EPA 300.0	JB	09/30/2013 @ 15:52	
Sulfate, Leachate	799 mg/l	N	EPA 300.0	JB	10/01/2013 @ 8:51	
Ammonia-Nitrogen, Leachate	1.0 mg/l	N	SM 4500 NH3 B,F	APO	10/02/2013 @ 15:23	
TKN, Leachate	2.0 mg/l	N	SM 4500 N org B,F	APO	10/02/2013 @ 15:12	
Selenium, Dry Weight	<10.0 mg/kg	N,D,J	SW846-6010B	EW	10/01/2013 @ 16:46	
Silver, Dry Weight	<1.0 mg/kg	N,D,J	SW846-6010B	EW	10/01/2013 @ 16:46	

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Report Date: 10/23/2013

Material Tested:	Fly Ash			HawkMtn WO #:	1309-00943-001
Date Sampled:	09/02/2013	Time Sampled:	6:00	Sampler:	Client
Date Received:	09/19/2013			Sample Point ID:	Hilltop Mod25 Ash

Client Sample ID: CPGP-FA90213-Fly Ash

Test Name	Test Results	Qual	Method	Tech	Start Date/Time	End Date/Time

These results relate only to the sample noted above.

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Ronald Andrae, Technical Director

Jeff Gittleman, Lab Director

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Customer: Hilltop Enterprises Inc.
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Suite 102
West Chester, PA 19380

Report Date: 10/23/2013

Material Tested: Fly Ash
Date Sampled: 09/02/2013 Time Sampled: 6:00
Date Received: 09/19/2013

HawkMtn WO #: 1309-00943-002
Sampler: Client
Sample Point ID: Hilltop Mod25 Ash

Client Sample ID: CPGP-FA90213-Fly Ash

Test Name	Test Results	Qual	Method	Tech	Start Date/Time	End Date/Time
ProctorDensity/Permeability			ASTM D1557-02a Modified	MMC	10/10/2013 @ 15:37	
Optimum Water Content	17.3 %		ASTM D1557-02a Modified	MMC	10/10/2013 @ 15:37	
Max Dry Density	78.1 lb/cu.ft.		ASTM D1557-02a Modified	MMC	10/10/2013 @ 15:37	
Ash Sizing			ASTM D422, C136-06	MMC	10/10/2013 @ 15:37	
19.00mm,3/4",Pass	100 %		ASTM D422, ASTM C136-0(	MMC	10/10/2013 @ 15:37	
09.51mm,3/8",Pass	100 %		ASTM D422, ASTM C136-0(	MMC	10/10/2013 @ 15:37	
4.76mm,No.4 4mesh,Pass	100 %		ASTM D422, ASTM C136-0(	MMC	10/10/2013 @ 15:37	
2.00mm,No.10 9mesh,Pass	99.9 %		ASTM D422, ASTM C136-0(	MMC	10/10/2013 @ 15:37	
425um,No.40 35mesh,Pass	99.7 %		ASTM D422, ASTM C136-0(	MMC	10/10/2013 @ 15:37	
075um,No.200 200mesh Pass	91.5 %		ASTM D422, ASTM C136-0(	MMC	10/10/2013 @ 15:37	
Permeability	1.76x10-5 cm/sec		ASTM D5084	MMC	10/10/2013 @ 15:37	

These results relate only to the sample noted above.

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Ronald Andrae, Technical Director

Jeff Gittleman, Lab Director

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5600-PM-MR0012 Rev. 4/2011

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP USE ONLY
Date Received

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF MINING AND RECLAMATION

COAL ASH QUALITY ASSESSMENT FOR BENEFICIAL USE

COAL ASH GENERATOR AND FACILITY INFORMATION

1. Name of Coal Ash Generator (Facility) Hilltop Enterprises
2. CA or GP No.. 037 3. Contact Person Tim Fogerty 4. Phone No. 610-430-6920
5. Email address: _____
5. Beneficial Use(s): [X] Placement (Reclamation) [ ] Soil additive/amendment [ ] Alkaline addition [ ] Low-permeability material [ ] CRD Stabilization [ ] Other _____
6. Sampling location and description of sample (combined, etc.): W.O./Smp #1309-00943-002 Chambers/CPGP Fly Ash Hilltop Enterprises
7. Sample Collection Date(s): 9/2/2013 thru 9/2/2013
8. Submission type: [ ] New source request [ ] Quarterly Sampling results [X] Additional

COAL ASH AND LEACHATE ANALYSES

9. **Ash solid and leachate results** – Complete the attached table for all constituents and any additional measurements, as applicable. Attached [X]

LABORATORY REPORTS AND AFFIDAVIT

10. **Documentation** - Attach copies of lab reports. Lab reports must contain the test method used or attach separate sheet with details. All numbers and letters on the report must be readable. Attached [ ]

Analytical Laboratory Name, Address	Analyst(s) Name
Hawk Mtn Labs, Inc.	Ronald Andrae
201 West Clay Ave.	Andrea Mengel
Hazle Township, Pa 18202	Phone No. (570) 455-6011

Lab Certification No. 40-00417

I, _____, certify under penalty of law that I have personally examined and am familiar with the information submitted under this Coal Ash Quality Assessment for Beneficial Use and the attached analytical results. Based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true and correct to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____ Day of _____ (month) _____ (year)

_____
Signature of Responsible Official

Tim Fogerty
Name (Typed)

1157 Phoenixville Pike
Address

West Chester, PA 19830

_____
Title

CHEMICAL AND PHYSICAL PROPERTIES OF ASH

Submit one sheet for each source and sample/composite date. Complete the entire table. Do not leave blanks. If value is less than detection/quantification limit, use '<' with limit value. Ex. <0.001. Corresponding lab documentation must be attached.

CA # 037	Source Name **Hilltop Enterprises**
Date(s) Sampled **9/2/2013 thru 9/2/2013**	Date Analyzed **10/23/2013**

Dry weight and leachate chemical analysis using EPA Publication No. SW-846 or comparable methods approved by the Department. Leachate concentrations determined with EPA Method 1312 SPLP

Constituent	Dry Wt. mg/kg or ppm	SPLP Leachate mg/l	Certification Limit	Constituent	Dry Wt. mg/kg or ppm	SPLP Leachate mg/l	Certification Limit
pH, solid (std. units)	10.16		7 or greater	Nickel (Ni)	32.8	0.0106	2.5 mg/l
Aluminum (Al)	9170	0.80	5.0 mg/l	Potassium (K)	2420	20.4	N/A
Antimony (Sb)	2.2	<0.01 J	0.15 mg/l	Selenium (Se)	<10.0	<0.05 J	0.5 mg/l
Arsenic (As)	47.4	0.0136	0.25 mg/l	Silver (Ag)	<1.0	<0.01 J	2.5 mg/l
Barium (B)	95.3	0.142	50.0 mg/l	Thallium (Tl)	2.4	<0.01 J	0.05 mg/l
Beryllium (Be)	7.4	<0.02	0.10 mg/l	Vanadium (V)	85.1	0.114	6.5 mg/l
Boron (B)	443	4.82	15.0 mg/l	Zinc (Zn)	30.0	<0.02	50.0 mg/l
Cadmium (Cd)	<1.0 J	<0.01 J	0.125 mg/l	Sulfur (S)	11.90%		N/A
Calcium (Ca)	154000	546	N/A	Sulfate (SO_4)		799	2500 mg/l
Chromium (Cr)	22.5	0.0237	2.5 mg/l	Chloride (Cl)		270	250 mg/l
Cobalt (Co)	10.1	<0.01 J	17.5 mg/l	Fluoride (F)		3.18	N/A
Copper (Cu)	19.3	<0.01 J	25.0 mg/l	Sodium (Na)	986	9.6	N/A
Iron (Fe)	22100	<0.2	7.5 mg/l				
Lead (Pb)	10.8	<0.01 J	0.375 mg/l				
Magnesium (Mg)	3670	0.94	N/A	**Leachate using ASTM D3987 (mg/l)**			
Manganese (Mn)	56.9	<0.04	2.5 mg/l	Nitrate (NO_3)		<5.0	10 mg/l
Mercury (Hg)	0.82	0.00017	0.05 mg/l	Nitrite (NO_2)		<1.0	1 mg/l
Molybdenum (Mo)	7.7	0.140	4.375 mg/l	Ammonia (NH_3)		1.0	30 mg/l

Acid Neutralizing Potential

$CaCO_3$ equivalent	252	In tons of CaCO3 per 1,000 tons of ash	100 or greater only if used for alkaline addition

Permeability

Hydraulic conductivity	1.76x10-5	In cm/sec	1.0×10^{-6} cm/sec or lower only if used for low permeability material

Nitrogen Content

For Total Kjeldahl Nitrogen (TKN) use Standard Method 4500.

TKN	2.0	In mg/l

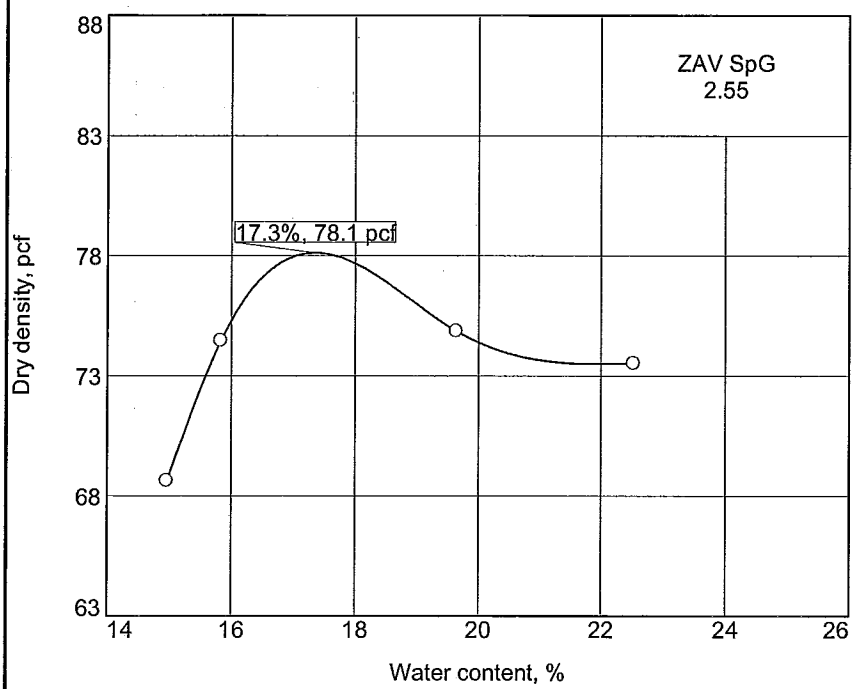
YEARLY TONNAGE REPORTING

Complete the following table and submit ONLY with the January 31 submittal.
This reporting fulfills the requirements in 25 Pa Code §290.201(d)(3). This page must also be completed if NO ash was sent to mine sites for the year.

CA number _____ Year _____

Ash amount in tons	Site operator name	Mine site permit number or project number

COMPACTION TEST REPORT



Curve No.
1309-943

Test Specification:
ASTM D 1557-00 Method A Modified

Preparation Method Moist
Hammer Wt. 10 lb.
Hammer Drop 18 in.
Number of Layers five
Blows per Layer 25
Mold Size 0.03333 cu. ft.
Test Performed on Material Passing #4 **Sieve**

NM Moist **LL** NA **PI** NA
Sp.G. (ASTM D 854)
%>#4 0.0 **%<No.200** 91.5
USCS SP **AASHTO** NA
Date Sampled 9/18/2013
Date Tested 9/27/2013
Tested By Matt McCauley

TESTING DATA

	1	2	3	4	5	6
WM + WS	5386.0	5497.0	5547.0	5555.0	5635.0	
WM	4193.0	4193.0	4193.0	4193.0	4193.0	
WW + T #1	88.2	77.6	78.3	88.4	95.1	
WD + T #1	83.2	72.9	72.8	81.0	87.1	
TARE #1	50.1	43.2	45.0	48.3	53.6	
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	15.0	15.8	19.6	22.5	24.0	
DRY DENSITY	68.6	74.5	74.9	73.5	76.9	

TEST RESULTS

Maximum dry density = 78.1 pcf

Optimum moisture = 17.3 %

Project No. **Client:** Hilltop Enterprises
Project: Quarterly Mod25 Ash Sizing & Compaction

○ **Source:** 2013 Ash **Depth:** NA **Sample No.:** 1309-943

HawkMtn Labs, Inc.

Hazle Twp., PA

Material Description

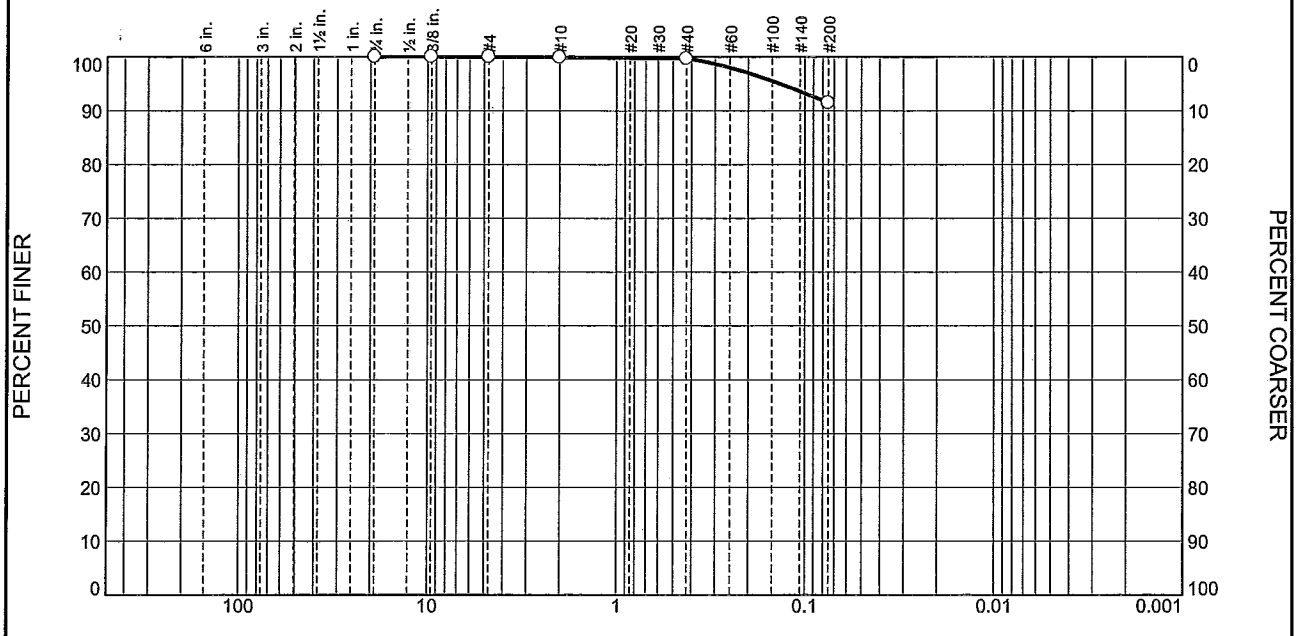
3rd Quarter 2013
Hydraulic Conductivity:1.76x10-5 cm/sec

Remarks:

Checked by: Jeff Gittleman
Title: Lab Director

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.2	8.2	91.5	

TEST RESULTS (ASTM C 136)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/4	100.0		
3/8	100.0		
#4	100.0		
#10	99.9		
#40	99.7		
#200	91.5		

* (no specification provided)

Material Description

3rd Quarter 2013
Hydraulic Conductivity:1.76x10-5 cm/sec

Atterberg Limits (ASTM D 4318)

PL= NA **LL=** NA **PI=** NA

Classification

USCS (D 2487)= SP **AASHTO (M 145)=** NA

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 9/25/2013 **Date Tested:** 9/27/2013
Tested By: Matt McCauley
Checked By: Jeff Gittleman
Title: Lab Director

Source of Sample: 2013 Ash **Depth:** NA **Date Sampled:** 9/18/2013
Sample Number: 1309-943

HawkMtn Labs, Inc.

Hazle Twp., PA

Client: Hilltop Enterprises
Project: Quarterly Mod25 Ash Sizing & Compaction
Project No: **Figure**

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HYDRAULIC CONDUCTIVITY TEST OF SATURATED POROUS MATERIAL
UTILIZING FLEXIBLE WALL PERMEAMETER PER ASTM D5084 - METHOD A - CONSTANT HEAD
TRIAL # 1
QSP-COAL-F15 Rev. 001

General Information

Project	Hilltop Energy 3rd Qtr 2013
W.O. #	1309-943-3
Material Description	Fly Ash
Compaction Method:	ASTM D1557 Method A

Test Specimen Data:

Optimum Moisture Content	17.3 %		
Specimen Moisture Content	19.6 %		
Specimen Wet Density	89.6 lbs./cu. ft.		
Specimen Dry Density	74.9 lbs./cu. ft.		
Specimen Diameter	4 inches	0.1016	meters
Specimen Length	4.625 inches	0.1175	meters
Initial Specimen Mass	1354 grams		
Final Specimen Mass	1421 grams		
Confining Pressure	4.0 psi		
Permeant Liquid	De-Aired Water		
Burettes	50cc burettes graduated to 0.1cc		
Saturation "B" Coefficient	1.0		

Test Data:

k	Hydraulic Conductivity in meters/second
Q	Quantity of Flow for a given time interval, t, taken as the average of inflow (upper cap) and outflow (lower cap) in cubic meters
L	Length of Specimen in meters
A	Cross section area of specimen in square meters
t	Interval of time over which the the flow Q occurs in seconds
t1	Time at start of permeation trial
t2	Time at end of permeation trial
h	Average head loss across the permeameter/specimen, (h1+h2/2), in meters of water
h1	Head loss across the permeameter/specimen at t1 in meters of water
h2	Head loss across the permeameter/specimen at t2 in meters of water

k (m/sec) $\frac{Q X L}{A X h X t}$

L	4.625 inches	0.117475 meters			
A	2 radius (in)	12.566372 square in	0.008107321 square meters		
t	t_2-t_1 in seconds				
h	psi * 0.7031 (m of water/psi)= m				

Date Time	Influent - Upper Cap			Effluent - Lower Cap			Pore Pressure	meters of water		ΔQ (m^3)	t (sec)	k (m/sec)	Ratio Effluent/Influent	k Comparison Percentages
	PSI	Volume	ΔV (cc)	PSI	Volume	ΔV (cc)	PSI	h (psi)	avg h (m)					
10/10/2013 12:10	0.50	0.00		0.40	49.80		1.02	0.10						
10/10/2013 12:20	0.50	1.40	1.4	0.40	49.10	0.7	1.06	0.10	0.07	0.000001050	600.00	3.6065E-07	0.50	
10/10/2013 12:30	0.50	2.00	0.6	0.40	48.50	0.6	1.08	0.10	0.07	0.000000600	600.00	2.0609E-07	1.00	73%
10/10/2013 12:40	0.50	2.60	0.6	0.40	47.80	0.7	1.10	0.10	0.07	0.000000650	600.00	2.2326E-07	1.17	85%
10/10/2013 12:50	0.50	3.10	0.5	0.40	47.30	0.5	1.13	0.10	0.07	0.000000500	600.00	1.7174E-07	1.00	71%
10/10/2013 13:00	0.50	3.60	0.5	0.40	46.70	0.6	1.10	0.10	0.07	0.000000550	600.00	1.8891E-07	1.20	82%
10/10/2013 13:10	0.50	4.00	0.4	0.40	46.30	0.4	1.09	0.10	0.07	0.000000400	600.00	1.3739E-07	1.00	64%
10/10/2013 13:20	0.50	4.50	0.5	0.40	45.60	0.7	1.11	0.10	0.07	0.000000600	600.00	2.0609E-07	1.40	97%
10/10/2013 13:30	0.50	5.00	0.5	0.40	45.10	0.5	1.10	0.10	0.07	0.000000500	600.00	1.7174E-07	1.00	82%

Average Hydraulic Conductivity for four consecutive determinations within ±25% of mean, Ratio of Effluent/Influent between 0.75 and 1.25, and Hydraulic Conductivity versus time shows no significant upward or downward trend: **1.76E-05 cm/sec**

QSP-008-FO2A REV 001

CHAIN OF CUSTODY
SAMPLE SUBMISSION RECORD

HAWKMTN LABS INC
201 West Clay Ave. • Hazle Township, PA 18202
Phone: (570) 455-6011 • Fax: (570) 455-6321

USTOMER NO. HILLTP

'ORK ORDER NO. 1309-943

SUBCONTRACTED:

REPORT TO: HILLTOP ENTERPRISES, INC.
1157 PHOENIXVILLE PIKE
STE 102
WEST CHESTER PA 19380

PROJECT NO. CPGP FLY ASH MOD 25

PROJECT NAME CPGP Fly Ash

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	SF	SOLID FUEL
WW	WASTE WATER	FM	FILTER MEDIA
LE	LEACHATE	OT	OTHER

ATTN: Tim Fogerty PHONE: 610-430-6920 FAX: 610-430-6921

NVOICE TO: ABOVE

PURCHASE ORDER NO. CHAMBERS / CPGP

ANALYSES TO BE PERFORMED

SAMPLE DESCRIPTION/LOCATION	DATE OF SAMPLING	TIME OF SAMPLING	SAMPLER (INITIALS)	TOTAL NO. CONTAINERS	SAMPLE TYPE	MOD 25										TEMP UPON RECEIPT (°C)	REMARKS:
CPGP-FA90213 - Fly Ash	9-02-13	0600	JW	1	OT	✓	X										

REMARKS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
James D. Wiegelin	9-18-13	12:40	Brad Wlosinski via Fed-Ex	9-19-13	1200
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	LOGGED IN AT LABORATORY: (SIGNATURE)	DATE	TIME
			Brad Wlosinski	9-19-13	1221