BLUE MOUNTAIN MINING, INC.
109 CLUB LANE
NICHOLASVILLE, KY 40356
Phone 859-881-4309

RECEIVED
SEP 28 2009
By_____

September 23, 2009

KPDES Branch
Kentucky Division of Water
200 Fair Oaks Lane, 4th Floor
Frankfort, Kentucky 40601

RE: KPDES Individual Permit
Blue Mountain Mining
DNR Permit 826-0635

Dear Sir:

I am writing here to request certain conditions be part of the final permit and provide certain supplemental information:

This permittee is requesting permission that a single outfall–here S3–be sampled and tested for the required effluent characteristics rather than both outfalls S2 and S3 because a single site is substantially representative, for the following reasons: 1. The possible sources of pollution and operation are identical (i.e. mine spoil consisting of fractured overburden and coal seam cleanings from Manchester Seam). 2. The medium of transport being storm water runoff is identical. 3. The treatment facility and process is identical (i.e. silt basins). 4. The proximity of one outfall to another is very close–some 850 LF. 5. The outfalls have not been constructed. 6. S3 is the most downstream station.

Further this permittee is herewith requesting that the intake and effluent characteristics as required by Section V, Part A of the KDPES Form C application be provided later–within the first two years after the mining operation has begun (projected date December 1, 2009) for the following reasons: 1. The mining operation has not begun, so the possible source(s) of pollution are not currently contributing to the receiving stream. 2. The treatment facilities (i.e. silt basins) will not be constructed until operations are imminent. 3. There are no representative mining activities conducted on Crane Creek presently.

The following items are enclosed as supplemental materials: 1. Vicinity Map - 1"=2000' scale USGS 7.5 minute Oneida quadrangle map. 2. DNR Permit Map - 1"= 400' scale Permit 826-0635 MRP/ERI Map. 3. Flow Chart Schematic– Longest Flow Path, 4. Sedcad Hyrologic Demonstration - 10 yr 24 Hour Storm representing worst case during mining runoff through Silt Basins with predicted discharge sediment concentrations, 5. Silt Basin Design Plans.

Please be advised I have retained Larry P. Stallard, P.E., Coal Production Engineering, Inc., P. O. Box 721, Winchester, KY 40392, Phone 859-771-1205, email coalprod@bellsouth.net to prepare this application. Mr. Stallard is authorized to make any changes on my behalf to satisfy the technical requirements of this application.

Thank you and if any more is required of me, please contact Mr. Larry P. Stallard. Please copy me on all correspondence.

Sincerely yours,

Marquetta Hensley
President

cc: Larry P. Stallard, Coal Production Engineering, Inc.

KPDES FORM 1

AZH 104706

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

RECEIVED
SEP 28 2009
By

PERMIT APPLICATION

This is an application to: (check one)

- ☒ Apply for a new permit.
- ☐ Apply for reissuance of expiring permit.
- ☐ Apply for a construction permit.
- ☐ Modify an existing permit.
  Give reason for modification under Item II.A.

A complete application consists of this form and one of the following:
Form A, Form B, Form C, Form F, or Form SC

For additional information contact:
KPDES Branch (502) 564-3410

CK 240 -

I. FACILITY LOCATION AND CONTACT INFORMATION	AGENCY USE	0	1	0	8	1	3	8

A. Name of Business, Municipality, Company, Etc. Requesting Permit
Blue Mountain Mining, Inc.

B. Facility Name and Location	C. Primary Mailing Address (all facility correspondence will be sent to this address). **Include owner's mailing address (if different) in D.**
Facility Location Name: DNR Permit 826-0635	Facility Contact Name and Title: Mr. ☐ Ms. ☒ Marquetta Hensley
Facility Location Address (i.e. street, road, etc., **not P.O. Box**): 1.41 miles SW KY 11 Junction with County Road 1019	Mailing Address: 109 Club Lane
Facility Location City, State, Zip Code: Clay County, Kentucky	Mailing City, State, Zip Code: Nicholasville, KY 40356
D. Owner's name (if not the same as in part A and C):	Facility Contact Telephone Number: 859-881-4309
Owner's Mailing Address: ,	Owner's Telephone Number (if different): 859-881-4309

II. FACILITY DESCRIPTION

A. Provide a brief description of activities, products, etc: Surface contour auger coal mining operations with runoff from disturbed areas flowing through silt basins prior to discharge into receiving stream

B. Standard Industrial Classification (SIC) Code and Description

Principal SIC Code & Description:	1221 Bituminous Surface Coal Mining Operation		
Other SIC Codes:			

III. FACILITY LOCATION

A. Attach a U.S. Geological Survey 7 ½ minute quadrangle map for the site. (See instructions)

B. County where facility is located:	City where facility is located (if applicable):
Clay	Ammie (nearest community)

C. Body of water receiving discharge:
Crane Creek

D. Facility Site Latitude (degrees, minutes, seconds):	Facility Site Longitude (degrees, minutes, seconds):
37d 16m 08s	83d 41m 27s

E. Method used to obtain latitude & longitude (see instructions): USGS Map

F. Facility Dun and Bradstreet Number (DUNS #) (if applicable):

IV. OWNER/OPERATOR INFORMATION

A. Type of Ownership:
☐ Publicly Owned ☒ Privately Owned ☐ State Owned ☐ Both Public and Private Owned ☐ Federally owned

B. Operator Contact Information (See instructions)

Name of Treatment Plant Operator: Not Applicable	Telephone Number:
Operator Mailing Address (Street):	
Operator Mailing Address (City, State, Zip Code):	
Is the operator also the owner? Yes ☐ No ☐	Is the operator certified? If yes, list certification class and number below. Yes ☐ No ☐
Certification Class:	Certification Number:

V. EXISTING ENVIRONMENTAL PERMITS

Current NPDES Number: Not Applicable	Issue Date of Current Permit:	Expiration Date of Current Permit:
Number of Times Permit Reissued: 0	Date of Original Permit Issuance:	Sludge Disposal Permit Number: Not Applicable
Kentucky DOW Operational Permit #: Not Applicable	Kentucky DSMRE Permit Number(s): 826-0635	

Which of the following additional environmental permit/registration categories will also apply to this facility?

CATEGORY	EXISTING PERMIT WITH NO.	PERMIT NEEDED WITH PLANNED APPLICATION DATE
Air Emission Source	Not Applicabele	
Solid or Special Waste	Not Applicable	
Hazardous Waste - Registration or Permit	Not Applicable	

VI. DISCHARGE MONITORING REPORTS (DMRs)

KPDES permit holders are required to submit DMRs to the Division of Water on a regular schedule (as defined by the KPDES permit). Information in this section serves to specifically identify the name and telephone number of the DMR official and the DMR mailing address (if different from the primary mailing address in Section I.C).

A. DMR Official (i.e., the department, office or individual designated as responsible for submitting DMR forms to the Division of Water):	Marquetta Hensley
DMR Official Telephone Number:	859-881-4309

B. DMR Mailing Address:
- Address the Division of Water will use to mail DMR forms (if different from mailing address in Section I.C), or
- Contact address if another individual, company, laboratory, etc. completes DMRs for you; e.g., contract laboratory address.

DMR Mailing Name:	Blue Mountain Mining, Inc.
DMR Mailing Address:	109 Club Lane
DMR Mailing City, State, Zip Code:	Nicholasville, KY 40356

VII. APPLICATION FILING FEE

KPDES regulations require that a permit applicant pay an application filing fee equal to twenty percent of the permit base fee. Please examine the base and filing fees listed below and in the Form 1 instructions and enclose a check payable to "Kentucky State Treasurer" for the appropriate amount (for permit renewals, please include the KPDES permit number on the check to ensure proper crediting). Descriptions of the base fee amounts are given in the "General Instructions."

Facility Fee Category:	Filing Fee Enclosed:
Surface Mining Operation	$240

VIII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (type or print):	TELEPHONE NUMBER (area code and number):
Mr. ☐ Ms. ☒ Marquetta Hensley, President	859-881-4309
SIGNATURE	DATE:
Marquetta Hensley	23 September 2009

Return completed application form and attachments to: **KPDES Branch, Division of Water, Frankfort Office Park, 14 Reilly Road, Frankfort, KY 40601. Direct questions to: KPDES Branch at (502) 564-3410.**

KPDES FORM C

AI # 107706

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT APPLICATION

A complete application consists of this form and Form 1.
For additional information, contact KPDES Branch, (502) 564-3410.

Name of Facility: DNR Permit 826-0635	County: Clay							
I. OUTFALL LOCATION	AGENCY USE	0	1	0	8	1	3	8

For each outfall list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

Outfall No. (list)	LATITUDE			LONGITUDE			RECEIVING WATER (name)
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	
S2	37	16	09	83	41	25	Crane Creek
S3	37	16	12	83	41	17	Crane Creek

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfall. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) the average flow contributed by each operation; and (3) the treatment received by the wastewater. Continue on additional sheets if necessary.

OUTFALL NO. (list)	OPERATION(S) CONTRIBUTING FLOW		TREATMENT	
	Operation (list)	Avg/Design Flow (include units)	Description	List Codes from Table C-1
S2	Surface Mining Disturbance Runoff	85.96 cfs in	Silt Basin No. 1	1-U
		49.32 cfs out		
		3.22 hr detention		
S2 (cont).	Surface Mining Disturbance Runoff	47.35 cfs in	Silt Basin No. 2	1-U
		44.76 cfs out		
		1.59 hr detention		
S3	Surface Mining Disturbance Runoff	12.31 cfs in	Silt Basin No. 3	1-U
		4.22 cfs out		
		12.84 hrdetention		

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES (Continued)

C. Except for storm water runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ Yes (Complete the following table.) ☒ No (Go to Section III.)

OUTFALL NUMBER (list)	OPERATIONS CONTRIBUTING FLOW (list)	FREQUENCY		FLOW				
		Days Per Week (specify average)	Months Per Year (specify average)	Flow Rate (in mgd)		Total volume (specify with units)		Duration (in days)
				Long-Term Average	Maximum Daily	Long-Term Average	Maximum Daily	
N/A								

III. MAXIMUM PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ Yes (Complete Item III-B) List effluent guideline category:

☐ No (Go to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measures of operation)?

☐ Yes (Complete Item III-C) ☒ No (Go to Section IV)

C. If you answered "Yes" to Item III-B, list the quantity which represents the actual measurement of your maximum level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

MAXIMUM QUANTITY			Affected Outfalls (list outfall numbers)
Quantity Per Day	Units of Measure	Operation, Product, Material, Etc. (specify)	
Not Applicable			

IV. IMPROVEMENTS

A. Are you now required by any federal, state or local authority to meet any implementation schedule for the construction, upgrading, or operation of wastewater equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders and grant or loan conditions.

☒ Yes (Complete the following table) ☐ No (Go to Item IV-B)

IDENTIFICATION OF CONDITION AGREEMENT, ETC.	AFFECTED OUTFALLS		BRIEF DESCRIPTION OF PROJECT	FINAL COMPLIANCE DATE	
	No.	Source of Discharge		Required	Projected
DNR Permit 826-0635	S2 S3	Mining Operations Mining Operations	Surface Mining, Fills, Haul Road Surface Mining, Fills, Haul Road	Prior Mining Prior Mining	12-01-09 12-01-09

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered 5-18.

D. Use the space below to list any of the pollutants (refer to SARA Title III, Section 313) listed in Table C-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

POLLUTANT	SOURCE	POLLUTANT	SOURCE
Not Applicable			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. Is any pollutant listed in Item V-C a substance or a component of a substance which you use or produce, or expect to use or produce over the next 5 years as an immediate or final product or byproduct?

☐ Yes (List all such pollutants below) ☒ No (Go to Item VI-B)

Not Applicable

B. Are your operations such that your raw materials, processes, or products can reasonably be expected to vary so that your discharge of pollutants may during the next 5 years exceed two times the maximum values reported in Item V?

☐ Yes (Complete Item VI-C) ☒ No (Go to Item VII)

C. If you answered "Yes" to Item VI-B, explain below and describe in detail to the best of your ability at this time the sources and expected levels of such pollutants which you anticipate will be discharged from each outfall over the next 5 years. Continue on additional sheets if you need more space.

Not Applicable

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge of or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes (Identify the test(s) and describe their purposes below) ☒ No (Go to Section VIII)

Not Applicable

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ Yes (list the name, address, and telephone number of, and pollutants analyzed by each such laboratory or firm below) ☐ No (Go to Section IX)

NAME	ADDRESS	TELEPHONE (Area code & number)	POLLUTANTS ANALYZED (list)
Clay Laboratorires, Inc.	2517 S Hwy 421 Ste 1, Manchester, KY 40962	606-598-8141	TSS, ph, CaCO3, Total SO4, Total Fe, Total Mn, Total Sb, Total As, Total Be, Total Cd, Total Cr;Total Cu, Total Pb, Total Hg, Total Ni, Total Se, Total Ag, Total Sulfate, Total Ti, Total Zn, Total Cyanide, Total Phenois

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (type or print):	TELEPHONE NUMBER (area code and number):
Marquetta Hensley, President	859-881-4309
SIGNATURE	DATE
Marquetta Hensley	23 September 2009

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. (See instructions)

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3 of Form C)												OUTFALL NO.
Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.												
1. POLLUTANT	2. EFFLUENT							3. UNITS (specify if blank)		4. INTAKE (optional)		
	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No of Analyses
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Biochemical Oxygen Demand (BOD)	N/A											
b. Chemical Oxygen Demand (COD)	N/A											
c. Total Organic Carbon (TOC)	N/A											
d. Total Suspended Solids (TSS)	X											
e. Ammonia (as N)	N/A											
f. Flow (in units of MGD)	VALUE X		VALUE		VALUE			MGD		VALUE		
g. Temperature (winter)	VALUE N/A		VALUE		VALUE			°c		VALUE		
h. Temperature (summer)	VALUE N/A		VALUE		VALUE			°c		VALUE		
i. pH	MINIMUM X	MAXIMUM X	MINIMUM	MAXIMUM				STANDARD UNITS				

Part B - In the MARK "X" column, place an "X" in the Believed Present column for each pollutant you know or have reason to believe is present. Place an "X" in the Believed Absent column for each pollutant you believe to be absent. If you mark the Believed Present column for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		6. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Bromide (24959-67-9)		X												
b. Bromine Total Residual		X												
c. Chloride		X												
d. Chlorine, Total Residual		X												
e. Color		X												
f. Fecal Coliform		X												
g. Fluoride (16984-48-8)		X												
h. Hardness (as $CaCO_3$)	X													
i. Nitrate – Nitrite (as N)		X												
j. Nitrogen, Total Organic (as N)		X												
k. Oil and Grease		X												
l. Phosphorous (as P), Total 7723-14-0		X												
m. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium Total		X												
(4) Radium, 226, Total		X												

Part B - Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
n. Sulfate (as SO_4) (14808-79-8)	X													
o. Sulfide (as S)		X												
p. Sulfite (as SO_4) (14286-46-3)		X												
q. Surfactants		X												
r. Aluminum, Total (7429-90)		X												
s. Barium, Total (7440-39-3)		X												
t. Boron, Total (7440-42-8)		X												
u. Cobalt, Total (7440-48-4)		X												
v. Iron, Total (7439-89-6)	X	X												
w. Magnesium Total (7439-96-4)		X												
x. Molybdenum Total (7439-98-7)		X												
y. Manganese, Total (7439-96-6)	X													
z. Tin, Total (7440-31-5)														
aa. Titanium, Total (7440-32-6)														

Part C – If you are a primary industry and this outfall contains process wastewater, refer to Table C-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in the **Testing Required** column for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark this column (secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions), mark "X" in the **Believed Present** column for each pollutant you know or have reason to believe is present. Mark "X: in the **Believed Absent** column for each pollutant you believe to be absent. If you mark either the **Testing Required** or **Believed Present** columns for any pollutant, you must provide the result of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE AND TOTAL PHENOLS															
1M. Antimony Total (7440-36-0)	X														
2M. Arsenic, Total (7440-38-2)	X														
3M. Beryllium Total (7440-41-7)	X														
4M. Cadmium Total (7440-43-9)	X														
5M. Chromium Total (7440-43-9)	X														
6M. Copper Total (7550-50-8)	X														
7M. Lead Total (7439-92-1)	X														
8M. Mercury Total (7439-97-6)	X														
9M. Nickel, Total (7440-02-0)	X														
10M. Selenium, Total (7782-49-2)	X														
11M. Silver, Total (7440-28-0)	X														

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE AND TOTAL PHENOLS (Continued)															
12M. Thallium, Total (7440-28-0)	X														
13M. Zinc, Total (7440-66-6)	X														
14M. Cyanide, Total (57-12-5)	X														
15M. Phenols, Total	X														
DIOXIN															
2,3,7,8 Tetra-chlorodibenzo, P, Dioxin (1784-01-6)		X		DESCRIBE RESULTS:											
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)		X													
2V. Acrylonitrile (107-13-1)		X													
3V. Benzene (71-43-2)		X													
5V. Bromoform (75-25-2)		X													
6V. Carbon Tetrachloride (56-23-5)		X													
7V. Chloro-benzene (108-90-7)		X													
8V. Chlorodibro-momethane (124-48-1)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
9V. Chloroethane (74-00-3)		X													
10V. 2-Chloro-ethylvinyl Ether (110-75-8)		X													
11V. Chloroform (67-66-3)		X													
12V. Dichloro-bromomethane (75-71-8)		X													
14V. 1,1-Dichloroethane (75-34-3)		X													
15V. 1,2-Dichloroethane (107-06-2)		X													
16V. 1,1-Dichlorethylene (75-35-4)		X													
17V. 1,2-Di-chloropropane (78-87-5)		X													
18V. 1,3-Dichloropro-pylene (452-75-6)		X													
19V. Ethyl-benzene (100-41-4)		X													
20V. Methyl Bromide (74-83-9)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
21V. Methyl Chloride (74-87-3)		X													
22V. Methylene Chloride (75-00-2)		X													
23V. 1,1,2,2-Tetrachloro-ethane (79-34-5)		X													
24V. Tetrachloro-ethylene (127-18-4)		X													
25V. Toluene (108-88-3)		X													
26V. 1,2-Trans-Dichloro-ethylene (156-60-5)		X													
27V. 1,1,1-Tri-chloroethane (71-55-6)		X													
28V. 1,1,2-Tri-chloroethane (79-00-5)		X													
29V. Trichloro-ethylene (79-01-6)		X													
30V. Vinyl Chloride (75-01-4)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chloro-phenol (95-57-8)		X													
2A. 2,4-Dichlor-Orophenol (120-83-2)		X													
3A. 2,4-Dimeth-ylphenol (105-67-9)		X													
4A. 4,6-Dinitro-o-cresol (534-52-1)		X													
5A. 2,4-Dinitro-phenol (51-28-5)		X													
6A. 2-Nitro-phenol (88-75-5)		X													
7A. 4-Nitro-phenol (100-02-7)		X													
8A. P-chloro-m-cresol (59-50-7)		X													
9A. Pentachloro-phenol (87-88-5)		X													
10A. Phenol (108-05-2)		X													
11A. 2,4,6-Tri-chlorophenol (88-06-2)		X													
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acena-phthene (83-32-9)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
2B. Acenaphtylene (208-96-8)		X													
3B. Anthracene (120-12-7)		X													
4B. Benzidine (92-87-5)		X													
5B. Benzo(a)-anthracene (56-55-3)		X													
6B. Benzo(a)-pyrene (50-32-8)		X													
7B. 3,4-Benzo-fluoranthene (205-99-2)		X													
8B. Benzo(ghl) perylene (191-24-2)		X													
9B. Benzo(k)-fluoranthene (207-08-9)		X													
10B. Bis(2-chloroethoxy)-methane (111-91-1)		X													
11B. Bis (2-chloroisopropyl)-Ether		X													
12B. Bis (2-ethylhexyl)-phthalate (117-81-7)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
13B. 4-Bromo-phenyl Phenyl ether (101-55-3)		X													
14B. Butyl-benzyl phthalate (85-68-7)		X													
15B. 2-Chloro-naphthalene (7005-72-3)		X													
16B. 4-Chloro-phenyl phenyl ether (7005-72-3)		X													
17B. Chrysene (218-01-9)		X													
18B. Dibenzo-(a,h) Anthracene (53-70-3)		X													
19B. 1,2-Dichloro-benzene (95-50-1)		X													
20B. 1,3-Dichloro-Benzene (541-73-1)		X													
21B. 1,4-Dichloro-benzene (106-46-7)		X													
22B. 3,3-Dichloro-benzidene (91-94-1)		X													
23B. Diethyl Phthalate (84-66-2)		X													

Part C – Continued															
1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
24B. Dimethyl Phthalate (131-11-3)		X													
25B. Di-N-butyl Phthalate (84-74-2)		X													
26B. 2,4-Dinitro-toluene (121-14-2)		X													
27B. 2,6-Dinitro-toluene (606-20-2)		X													
28B. Di-n-octyl Phthalate (117-84-0)		X													
29B. 1,2-diphenyl-hydrazine (as azonbenzene) (122-66-7)		X													
30B. Fluoranthene (208-44-0)		X													
31B. Fluorene (86-73-7)		X													
32B. Hexachloro-benzene (118-71-1)		X													
33B. Hexachloro-butadiene (87-68-3)		X													
34B. Hexachloro-cyclopenta-diene (77-47-4)		X													

Part C – Continued

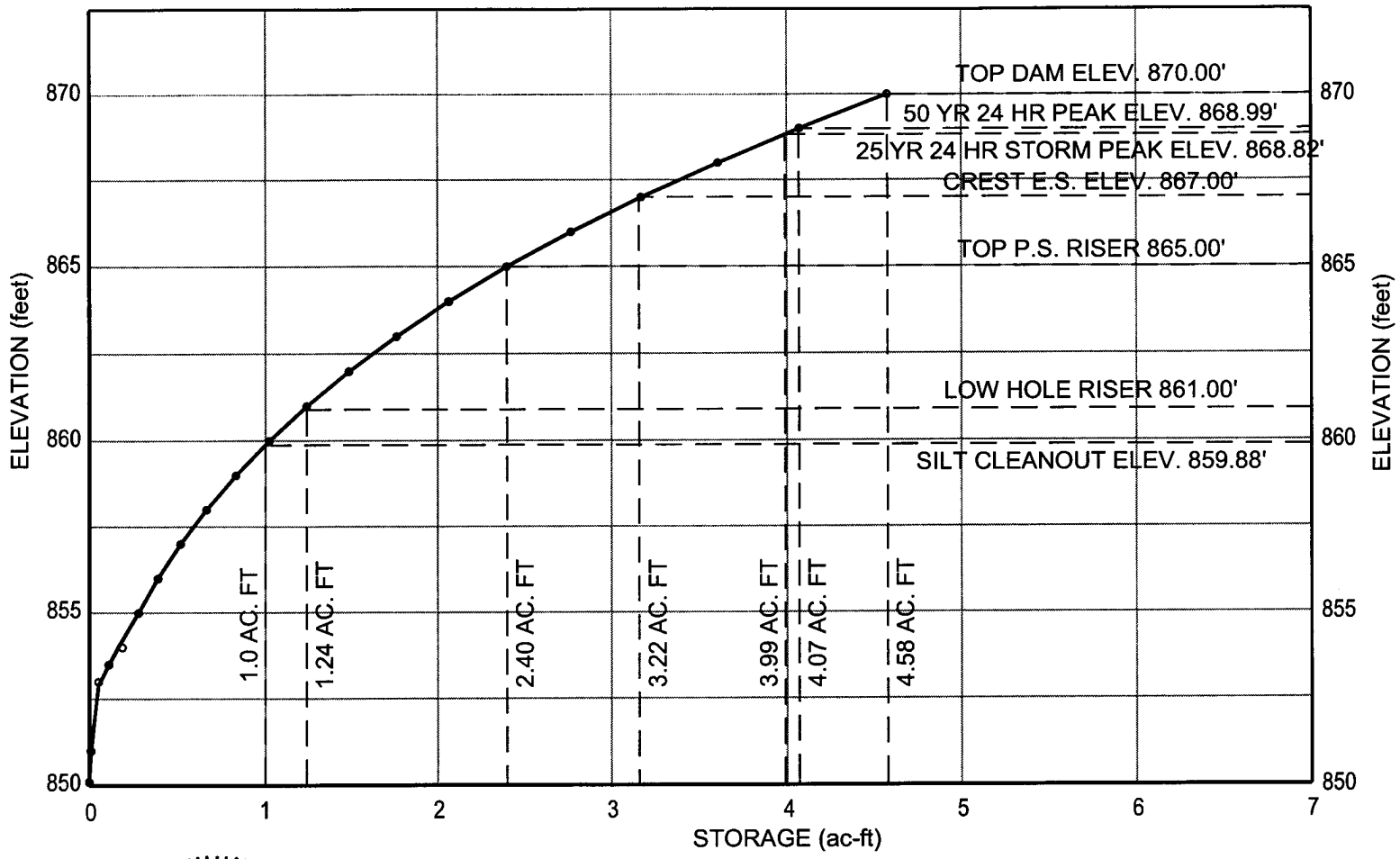
1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
35B. Hexachloroethane (67-72-1)		X													
36B. Indneo-(1,2,3-oc)-Pyrene (193-39-5)		X													
37B. Isophorone (78-59-1)		X													
38B. Napthalene (91-20-3)		X													
39B. Nitrobenzene (98-95-3)		X													
40B. N-Nitrosodimethylamine (62-75-9)		X													
41B. N-nitrosodi-n-propylamine (621-64-7)		X													
42B. N-nitrosodiphenylamine (86-30-6)		X													
43B. Phenanthrene (85-01-8)		X													
44B. Pyrene (129-00-0)		X													
45B. 1,2,4 Trichlorobenzene (120-82-1)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)		X													
2P. α-BHC (319-84-6)		X													
3P. β-BHC (58-89-9)		X													
4P. gamma-BHC (58-89-9)		X													
5P. δ-BHC (319-86-8)		X													
6P. Chlordane (57-74-9)		X													
7P. 4,4'-DDT (50-29-3)		X													
8P. 4,4'-DDE (72-55-9)		X													
9P. 4,4'-DDD (72-54-8)		X													
10P. Dieldrin (60-57-1)		X													
11P. α-Endosulfan (115-29-7)		X													
12P. β-Endosulfan (115-29-7)		X													
13P. Endosulfan Sulfate (1031-07-8)		X													
14P. Endrin (72-20-8)		X													

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – PESTICIDES															
15P. Endrin Aldehyde (7421-93-4)		X													
16P Heptachlor (76-44-8)		X													
17P. Heptaclor Epoxide (1024-57-3)		X													
18P. PCB-1242 (53469-21-9)		X													
19P. PCB-1254 (11097-69-1)		X													
20P. PCB-1221 (11104-28-2)		X													
21P. PCB-1232 (11141-16-5)		X													
22P. PCB-1248 (12672-29-6)		X													
23P. PCB-1260 (11096-82-5)		X													
24P. PCB-1016 (12674-11-2)		X													
25P. Toxaphene (8001-35-2)		X													



STAGE STORAGE CURVE
BASIN NO. 1

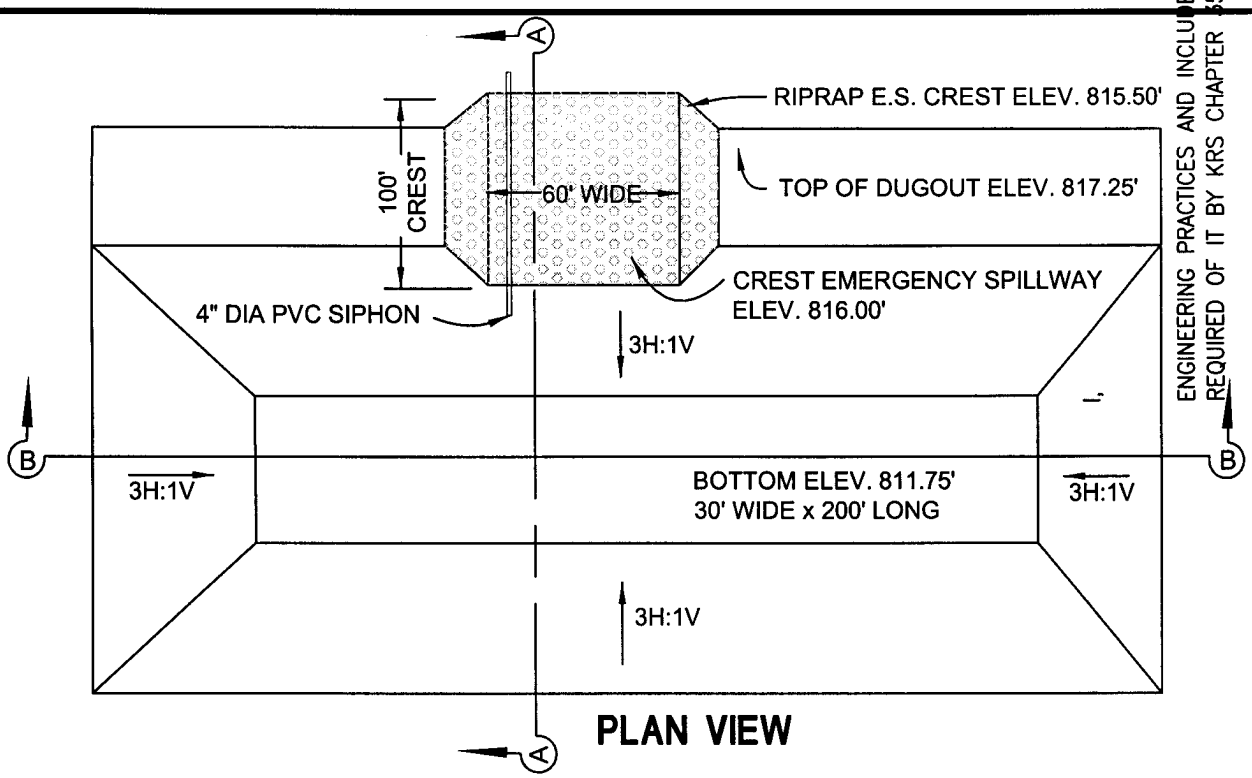
STATE OF KENTUCKY
LARRY P. STALLARD
12805
LICENSED
PROFESSIONAL ENGINEER

I, Larry P. Stallard 23 Sept 09
HEREBY CERTIFY, IN ACCORDANCE WITH 405 KAR 7:04 SECTION 10, THAT THIS DOCUMENT IS CORRECT AS DETERMINED BY ACCEPTED ENGINEERING PRACTICES AND INCLUDES ALL THE INFORMATION REQUIRED OF IT BY KRS CHAPTER 350 AND KAR TITLE 405.

BLUE MOUNTAIN MINING, INC.

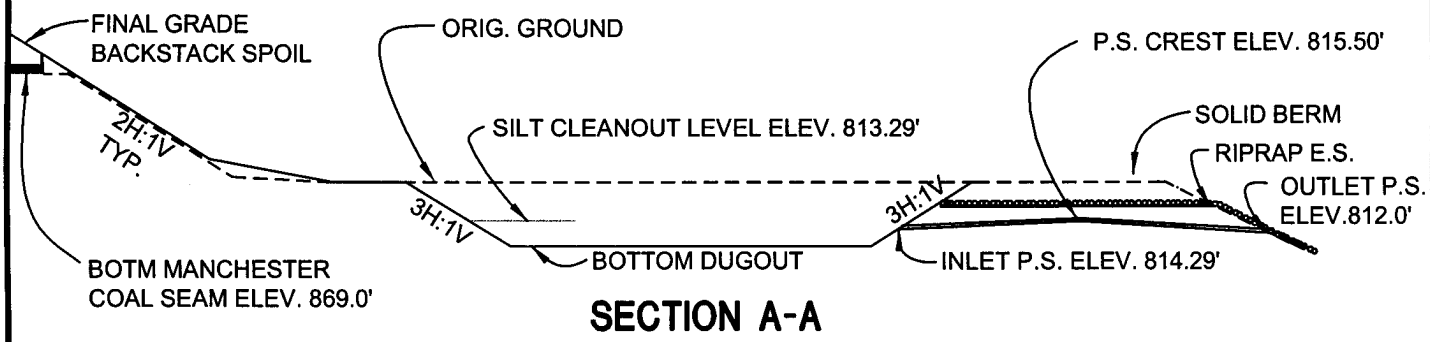
STAGE STORAGE CURVE
SILT BASIN 1
PERMIT NO. 826-0635
ATTACHMENT 33.1.A

DATE: APRIL 19, 2009 SCALE AS SHOWN

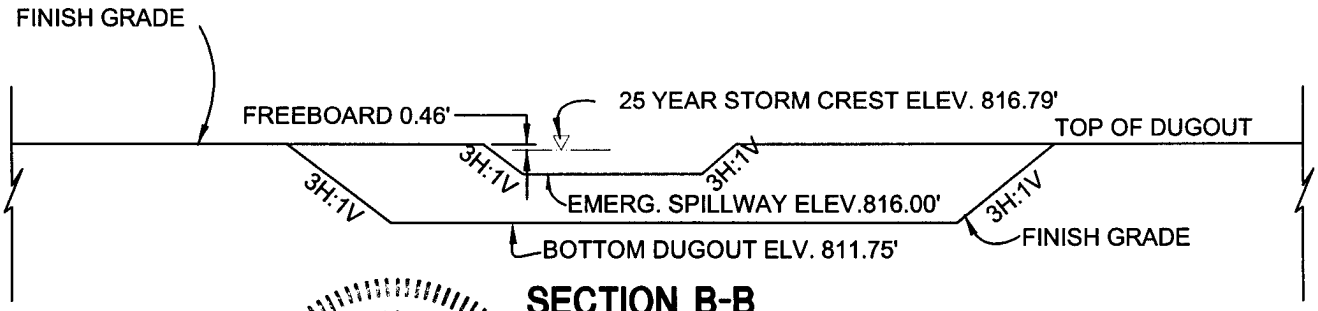


ENGINEERING PRACTICES AND INCLUDES REQUIRED OF IT BY KRS CHAPTER 350

PLAN VIEW



SECTION A-A



SECTION B-B

HAZARD CLASS: A

STATE OF KENTUCKY
LARRY P STALLARD
12805
LICENSED
PROFESSIONAL ENGINEER

I, Larry P Stallard 23 Sept 09

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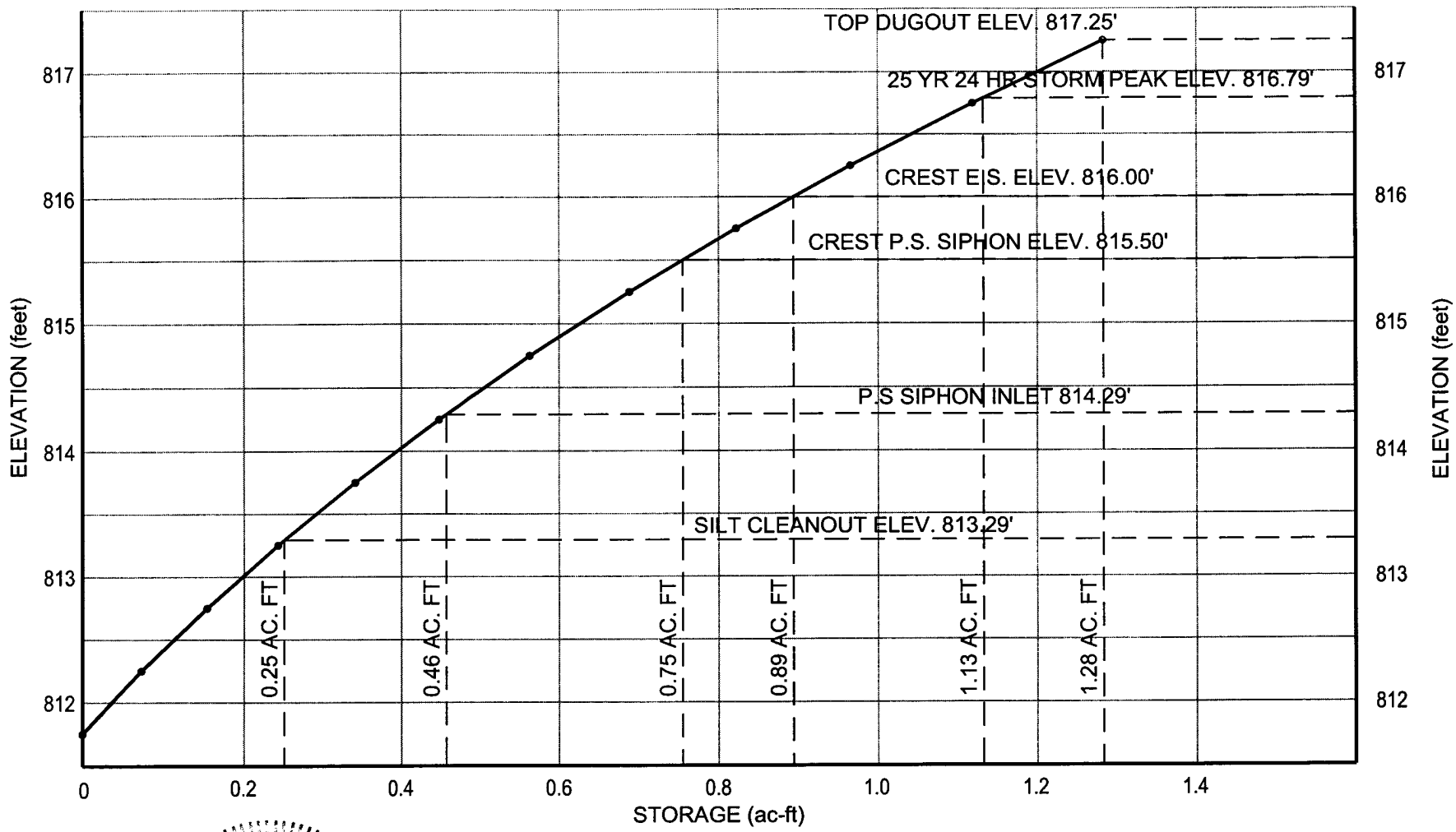
BLUE MOUNTAIN MINING, INC.

PLAN, PROFILE & SECTIONS
SILT BASIN 2
PERMIT NO. 826-0635
ATTACHMENT 33.1.B

DATE: APRIL 19, 2009 NOT TO SCALE



STAGE STORAGE CURVE
BASIN NO. 2

STATE OF KENTUCKY
LARRY P. STALLARD
12805
LICENSED
PROFESSIONAL ENGINEER

I, _____ 23 Sept 09
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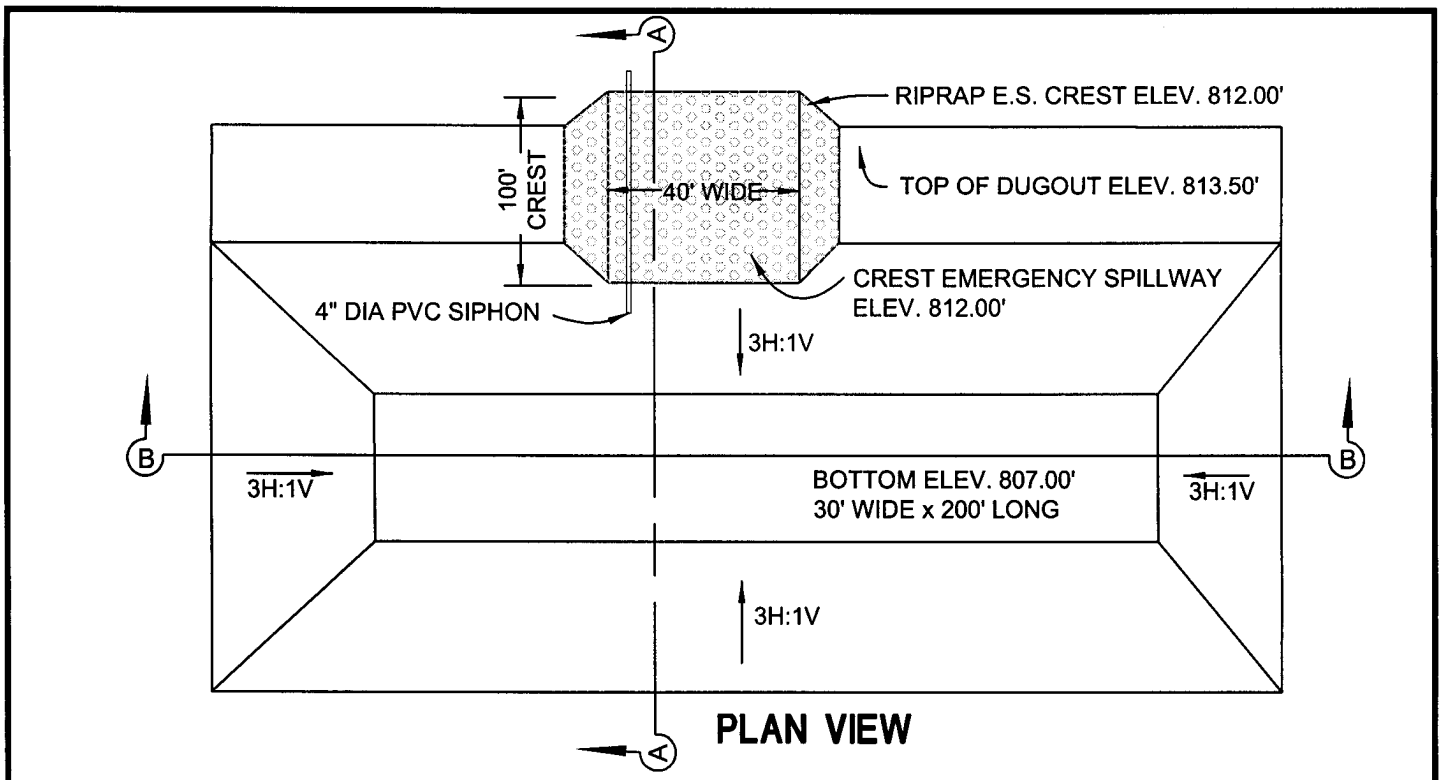
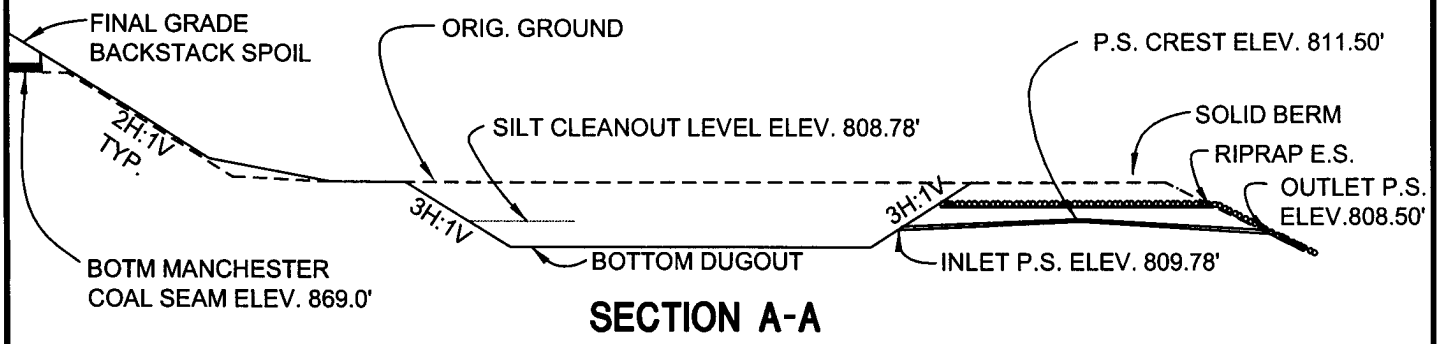
BLUE MOUNTAIN MINING, INC.

STAGE STORAGE CURVE
SILT BASIN 2
PERMIT NO. 826-0635
ATTACHMENT 33.1.B

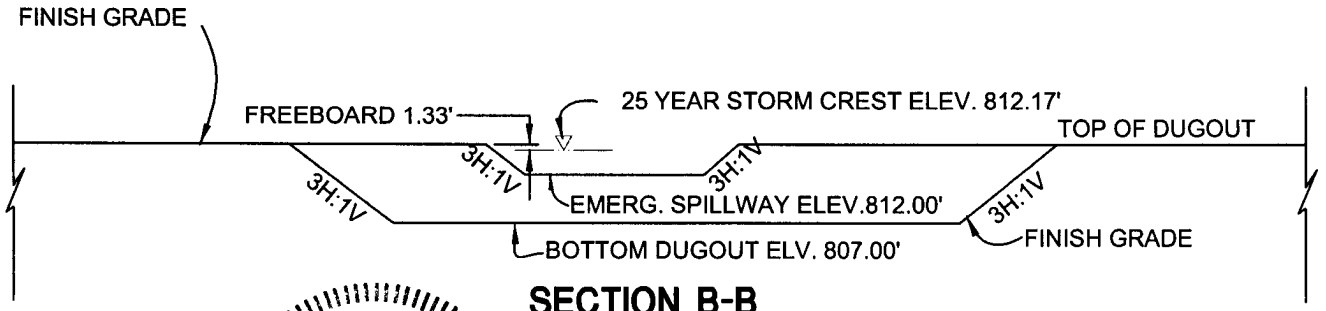
DATE: APRIL 19, 2009 SCALE AS SHOWN



PLAN VIEW



SECTION A-A



SECTION B-B

HAZARD CLASS "A"

STATE OF KENTUCKY
LARRY P. STALLARD
12805
LICENSED
PROFESSIONAL ENGINEER

I, Larry P. Stallard 23 Sept 09

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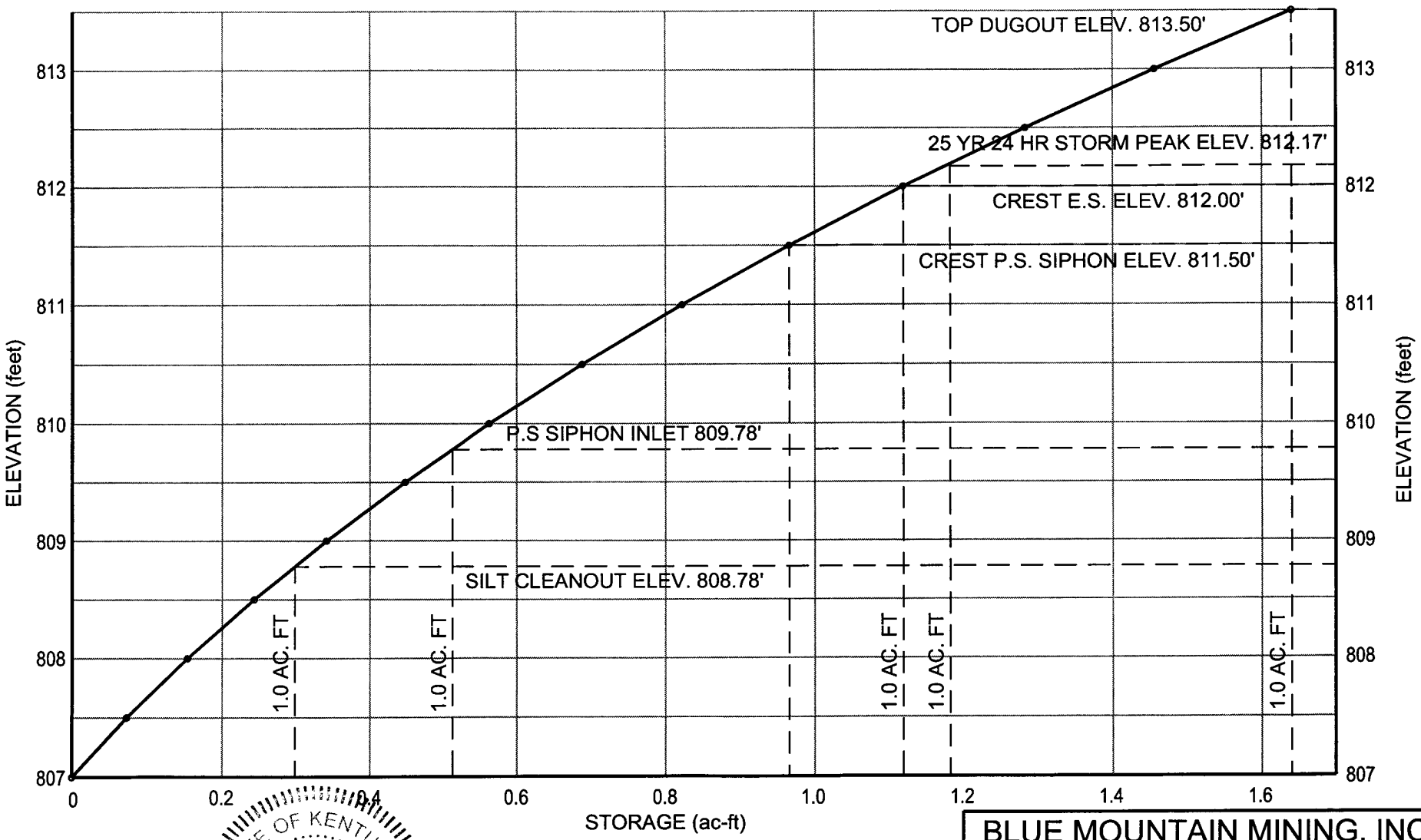
BLUE MOUNTAIN MINING, INC.

PLAN, PROFILE & SECTIONS
SILT BASIN 3
PERMIT NO. 826-0635
ATTACHMENT 33.1.C

DATE: APRIL 19, 2009 NOT TO SCALE



STAGE STORAGE CURVE
BASIN NO. 3

STATE OF KENTUCKY
LARRY P. STALLARD
12805
LICENSED
PROFESSIONAL ENGINEER

I, Larry P. Stallard 24 Sept 09
HEREBY CERTIFY, IN ACCORDANCE WITH 405 KAR 7:04 SECTION 10, THAT THIS DOCUMENT IS CORRECT AS DETERMINED BY ACCEPTED ENGINEERING PRACTICES AND INCLUDES ALL THE INFORMATION REQUIRED OF IT BY KRS CHAPTER 350 AND KAR TITLE 405.

BLUE MOUNTAIN MINING, INC.

STAGE STORAGE CURVE
SILT BASIN 3
PERMIT NO. 826-0635
ATTACHMENT 33.1.C

DATE: APRIL 19, 2009 SCALE AS SHOWN

Blue Mountain Mining, Inc.
Permit 826-0635

Worst During Mining Conditions

10 yr 24 hr Storm Event

STATE OF KENTUCKY
LARRY P STALLARD
12805
LICENSED
PROFESSIONAL ENGINEER

23 Sept 09

Larry P. Stallard, P.E.

Coal Production Engineering, Inc.
P.O. Box 721
Winchester, KY 40392

Phone: 859-737-0730
Email: coalprod@bellsouth.net

General Information

Storm Information:

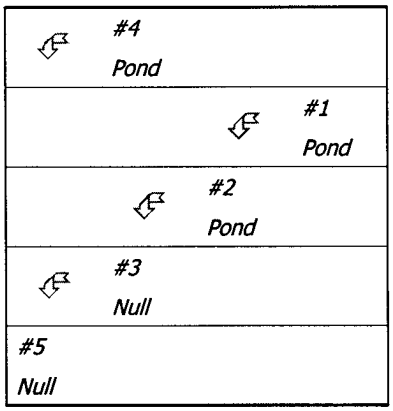
Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	4.400 inches

Particle Size Distribution:

Size (mm)	undisturbed	disturbed
3.0000	100.000%	100.000%
2.0000	93.000%	99.900%
1.0000	86.000%	98.000%
0.5000	78.000%	92.000%
0.3000	73.000%	87.000%
0.2000	67.000%	80.000%
0.1000	55.000%	70.000%
0.0500	44.000%	60.000%
0.0300	35.000%	50.000%
0.0200	27.000%	42.000%
0.0100	18.000%	32.000%
0.0050	14.000%	21.000%
0.0030	9.000%	15.000%
0.0010	3.000%	4.000%
0.0001	0.000%	0.000%

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Pond	#1	==>	#2	0.121	0.333	Basin #1 Impoundment
Pond	#2	==>	#3	0.000	0.000	Basin #2 Dugout
Null	#3	==>	#5	0.035	0.398	Discharge Pt Crane Ck
Pond	#4	==>	#5	0.000	0.000	Basin #3 Dugout
Null	#5	==>	End	0.000	0.000	End Permit Crane Ck



Structure Routing Details:

Stru #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	6. Grassed waterway	2.33	5.20	223.08	2.29	0.027
	6. Grassed waterway	3.67	11.20	305.19	2.87	0.029
	8. Large gullies, diversions, and low flowing streams	4.67	10.00	214.31	6.48	0.009
	7. Paved area and small upland gullies	1.00	0.50	50.00	2.01	0.006
	6. Grassed waterway	2.31	2.50	108.28	2.27	0.013
	8. Large gullies, diversions, and low flowing streams	33.33	5.00	15.00	17.32	0.000
	6. Grassed waterway	0.25	0.25	100.00	0.75	0.037
#1	**Muskingum K:**					**0.121**
#3	9. Small streams flowing bankfull	0.55	4.75	864.26	6.67	0.035
#3	**Muskingum K:**					**0.035**

Structure Summary:

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#4	In	5.999	5.999	12.31	1.23	274.3	284,420	151.85	79.70
	Out			4.22	1.62	47.1	46,799	0.01	0.01
#1	In	45.043	45.043	85.96	6.96	1,256.0	497,906	268.36	65.49
	Out			49.32	6.96	393.0	96,345	2.70	1.21
#2	In	4.065	49.107	47.35	7.98	377.0	178,376	22.26	4.46
	Out			44.76	8.07	317.8	88,744	0.61	0.22
#3		1.553	50.661	45.32	8.28	317.8	87,663	0.60	0.21
#5		0.000	56.660	45.75	9.90	364.9	87,208	0.48	0.17

The 24 hour Arithmetic Average (24AA) is under review. It is anticipated that the 24AA will be replaced by the peak settleable solids concentration (ml/l) with the addition of new sediment input factor values.

The 24AA is provided for your convenience during this transition period.

		24AA (ml/l)
#4	In	26.15
	Out	0.00
#1	In	27.10
	Out	0.45
#2	In	2.01
	Out	0.08
#3		0.07
#5		0.07

Particle Size Distribution(s) at Each Structure

Structure #4 (Basin #3 Dugout):

Size (mm)	In	Out
3.0000	100.000%	100.000%
2.0000	100.000%	100.000%
1.0000	98.174%	100.000%
0.5000	92.571%	100.000%
0.3000	87.903%	100.000%
0.2000	81.367%	100.000%
0.1000	71.385%	100.000%
0.0500	61.186%	100.000%
0.0300	50.988%	100.000%
0.0200	42.829%	100.000%
0.0100	32.631%	100.000%
0.0050	21.415%	100.000%
0.0030	15.296%	89.146%
0.0010	4.079%	23.773%
0.0001	0.000%	0.000%

Structure #1 (Basin #1 Impoundment):

Size (mm)	In	Out
3.0000	100.000%	100.000%
2.0000	99.883%	100.000%
1.0000	97.970%	100.000%
0.5000	91.966%	100.000%
0.3000	86.966%	100.000%
0.2000	79.968%	100.000%
0.1000	69.963%	100.000%
0.0500	59.961%	100.000%
0.0300	49.963%	100.000%
0.0200	41.963%	100.000%
0.0100	31.966%	100.000%
0.0050	20.983%	67.065%
0.0030	14.985%	47.896%

Size (mm)	In	Out
0.0010	3.998%	12.777%
0.0001	0.000%	0.000%

Structure #2 (Basin #2 Dugout):

Size (mm)	In	Out
3.0000	100.000%	100.000%
2.0000	100.000%	100.000%
1.0000	99.840%	100.000%
0.5000	99.360%	100.000%
0.3000	98.960%	100.000%
0.2000	98.400%	100.000%
0.1000	97.600%	100.000%
0.0500	94.724%	100.000%
0.0300	90.753%	100.000%
0.0200	87.576%	100.000%
0.0100	83.606%	99.174%
0.0050	78.242%	92.811%
0.0030	55.879%	66.284%
0.0010	14.906%	17.681%
0.0001	0.000%	0.000%

Structure #3 (Discharge Pt Crane Ck):

Size (mm)	In/Out
3.0000	100.000%
2.0000	100.000%
1.0000	100.000%
0.5000	100.000%
0.3000	100.000%
0.2000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0300	100.000%
0.0200	100.000%
0.0100	99.174%
0.0050	92.811%
0.0030	66.283%
0.0010	17.682%
0.0001	0.000%

Structure #5:

Size (mm)	In/Out
3.0000	100.000%
2.0000	100.000%
1.0000	100.000%
0.5000	100.000%
0.3000	100.000%
0.2000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0300	100.000%
0.0200	100.000%
0.0100	99.280%
0.0050	93.738%
0.0030	69.232%
0.0010	18.467%
0.0001	0.000%

Structure Detail:

Structure #4 (Pond)

Basin #3 Dugout

Pond Inputs:

Initial Pool Elev:	809.78 ft
Initial Pool:	0.21 ac-ft
*Sediment Storage:	0.25 ac-ft
Dead Space:	0.00 %

**Sediment capacity was entered by user*

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
812.00	100.00	3.00:1	3.00:1	40.00

Fixed Siphon

Crest Elev	Inlet Elev	Outlet Elev	Diameter (in)	Length (ft)	Manning's n
811.50	809.78	808.50	4.00	150.00	0.0140

Pond Results:

Peak Elevation:	812.06 ft
H'graph Detention Time:	12.84 hrs
Pond Model:	CSTRS
Dewater Time:	1.20 days
Trap Efficiency:	82.84 %

Dewatering time is calculated from peak stage to lowest spillway

Elevation-Capacity-Discharge Table

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
808.78	0.196	0.000	0.000		Top of Sed. Storage
809.00	0.204	0.045	0.000		
809.50	0.222	0.151	0.000		
809.78	0.232	0.215	0.000		
810.00	0.240	0.267	0.285	2.21*	
810.50	0.259	0.391	0.334	4.52*	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
811.00	0.278	0.526	0.378	4.29*	
811.50	0.297	0.669	0.418	4.16*	Spillway #2
811.78	0.308	0.754	0.440	3.20	
812.00	0.317	0.823	0.456	5.70	Spillway #1
812.06	0.319	0.843	4.224	4.75	Peak Stage
812.50	0.337	0.986	31.589		
813.00	0.358	1.160	62.720		
813.50	0.379	1.344	140.524		

**Designates time(s) to dewater have been extrapolated beyond the 50 hour hydrograph limit.*

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Fixed Siphon (cfs)	Combined Total Discharge (cfs)
808.78	0.000	0.000	0.000
809.00	0.000	0.000	0.000
809.50	0.000	0.000	0.000
809.78	0.000	0.000	0.000
810.00	0.000	0.285*	0.285
810.50	0.000	0.334*	0.334
811.00	0.000	0.378*	0.378
811.50	0.000	0.418	0.418
811.78	0.000	0.440	0.440
812.00	0.000	0.456	0.456
812.50	31.098	0.491	31.589
813.00	62.196	0.524	62.720
813.50	139.969	0.555	140.524

Structure #1 (Pond)

Basin #1 Impoundment

Pond Inputs:

Initial Pool Elev:	861.00 ft
Initial Pool:	0.24 ac-ft
*Sediment Storage:	1.00 ac-ft
Dead Space:	0.00 %

**Sediment capacity was entered by user*

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
867.00	100.00	2.00:1	2.00:1	15.00

Perforated Riser

Riser Diameter (in)	Riser Height (ft)	Barrel Diameter (in)	Barrel Length (ft)	Barrel Slope (%)	Manning's n	Spillway Elev (ft)	Number of Holes per Elev
36.00	18.36	15.00	175.00	3.68	0.0240	865.00	4

Pond Results:

Peak Elevation:	868.21 ft
H'graph Detention Time:	3.22 hrs
Pond Model:	CSTRS
Dewater Time:	1.56 days
Trap Efficiency:	68.71 %

Dewatering time is calculated from peak stage to lowest spillway

Elevation-Capacity-Discharge Table

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
859.88	0.201	0.000	0.000		Top of Sed. Storage
860.00	0.204	0.024	0.000		
860.10	0.207	0.044	0.000		
860.60	0.221	0.151	0.000		
861.00	0.232	0.242	0.000		Low hole SPW #2
861.10	0.235	0.265	0.133	6.95	
861.60	0.248	0.386	0.325	6.80	
862.00	0.260	0.487	0.420	3.30	
862.10	0.263	0.513	0.574	0.65	
862.60	0.277	0.648	0.857	2.30	
863.00	0.289	0.762	1.014	1.50	
863.10	0.292	0.791	1.182	0.30	
863.60	0.307	0.940	1.534	1.35	
864.00	0.320	1.066	1.742	0.90	
864.10	0.323	1.098	1.789	0.25	
864.60	0.339	1.263	2.006	1.05	
865.00	0.351	1.401	2.162	3.55	Spillway #2
865.10	0.355	1.437	2.200	1.55	
865.60	0.372	1.618	12.269	5.10	

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
866.00	0.386	1.770	12.366	0.30	
866.10	0.389	1.809	12.390	0.05	
866.60	0.406	2.008	12.509	0.40	
867.00	0.419	2.173	12.603	0.50	Spillway #1
867.10	0.422	2.215	15.014	0.10	
867.60	0.438	2.429	27.068	0.40	
868.00	0.450	2.607	36.712	0.20	
868.10	0.454	2.652	42.085		
868.21	0.457	2.703	49.316	0.05	Peak Stage
868.60	0.470	2.883	75.168		
869.00	0.484	3.074	109.746		
869.10	0.487	3.122	119.368		
869.60	0.504	3.370	173.273		
870.00	0.519	3.575	223.319		

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Perf. Riser (cfs)	Combined Total Discharge (cfs)
859.88	0.000	0.000	0.000
860.00	0.000	0.000	0.000
860.10	0.000	0.000	0.000
860.60	0.000	0.000	0.000
861.00	0.000	2.00>0.000	0.000
861.10	0.000	0.133	0.133
861.60	0.000	0.325	0.325
862.00	0.000	2.00>0.420	0.420
862.10	0.000	0.574	0.574
862.60	0.000	0.857	0.857
863.00	0.000	2.00>1.014	1.014
863.10	0.000	1.182	1.182
863.60	0.000	1.534	1.534
864.00	0.000	1.742	1.742
864.10	0.000	1.789	1.789
864.60	0.000	2.006	2.006
865.00	0.000	2.162	2.162
865.10	0.000	2.200	2.200
865.60	0.000	12.269	12.269
866.00	0.000	12.366	12.366

Elevation (ft)	Emergency Spillway (cfs)	Perf. Riser (cfs)	Combined Total Discharge (cfs)
866.10	0.000	12.390	12.390
866.60	0.000	12.509	12.509
867.00	0.000	12.603	12.603
867.10	2.387	12.626	15.014
867.60	14.325	12.743	27.068
868.00	23.876	12.836	36.712
868.10	29.226	12.859	42.085
868.60	62.195	12.974	75.168
869.00	96.681	13.065	109.746
869.10	106.281	13.087	119.368
869.60	160.072	13.200	173.273
870.00	210.030	13.290	223.319

Structure #2 (Pond)

Basin #2 Dugout

Pond Inputs:

Initial Pool Elev:	814.29 ft
Initial Pool:	0.21 ac-ft
*Sediment Storage:	0.25 ac-ft
Dead Space:	0.00 %

**Sediment capacity was entered by user*

Emergency Spillway

Spillway Elev	Crest Length (ft)	Left Sideslope	Right Sideslope	Bottom Width (ft)
816.00	100.00	3.00:1	3.00:1	60.00

Fixed Siphon

Crest Elev	Inlet Elev	Outlet Elev	Diameter (in)	Length (ft)	Manning's n
815.50	814.29	812.00	4.00	150.00	0.0140

Pond Results:

Peak Elevation:	816.41 ft
H'graph Detention Time:	1.59 hrs
Pond Model:	CSTRS
Dewater Time:	1.57 days
Trap Efficiency:	15.70 %

Dewatering time is calculated from peak stage to lowest spillway

Elevation-Capacity-Discharge Table

Elevation	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
813.29	0.188	0.000	0.000		Top of Sed. Storage
813.75	0.204	0.091	0.000		
814.00	0.213	0.143	0.000		
814.25	0.222	0.198	0.000		
814.29	0.223	0.207	0.000		
814.50	0.231	0.254	0.378	1.53*	
814.75	0.240	0.313	0.399	1.79*	
815.00	0.250	0.374	0.418	1.77*	
815.25	0.259	0.438	0.437	1.76*	
815.50	0.269	0.504	0.456	1.75*	Spillway #2
815.75	0.278	0.572	0.473	3.10	
816.00	0.287	0.643	0.491	5.95	Spillway #1
816.25	0.297	0.716	27.325	19.85	
816.41	0.304	0.766	44.761	0.30	Peak Stage
816.75	0.317	0.869	80.993		
817.25	0.337	1.033	134.659		

**Designates time(s) to dewater have been extrapolated beyond the 50 hour hydrograph limit.*

Detailed Discharge Table

Elevation (ft)	Emergency Spillway (cfs)	Fixed Siphon (cfs)	Combined Total Discharge (cfs)
813.29	0.000	0.000	0.000
813.75	0.000	0.000	0.000
814.00	0.000	0.000	0.000
814.25	0.000	0.000	0.000
814.29	0.000	0.000	0.000
814.50	0.000	0.378*	0.378
814.75	0.000	0.399*	0.399
815.00	0.000	0.418*	0.418
815.25	0.000	0.437*	0.437
815.50	0.000	0.456	0.456
815.75	0.000	0.473	0.473
816.00	0.000	0.491	0.491

Elevation (ft)	Emergency Spillway (cfs)	Fixed Siphon (cfs)	Combined Total Discharge (cfs)
816.25	26.818	0.507	27.325
816.75	80.453	0.540	80.993
817.25	134.089	0.570	134.659

Structure #3 (Null)

Discharge Pt Crane Ck

Structure #5 (Null)

End Permit Crane Ck

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#4	1	1.616	0.088	0.314	0.312	70.000	S	2.90	0.216
	2	1.883	0.028	0.282	0.281	91.000	F	5.87	0.533
	3	2.500	0.285	0.000	0.000	86.000	M	4.51	0.485
	Σ	**5.999**						**12.31**	**1.233**
#1	1	37.235	0.079	0.055	0.405	70.000	S	66.71	4.969
	2	5.488	0.058	0.000	0.000	86.000	M	15.63	1.330
	3	2.320	0.029	0.000	0.000	91.000	F	7.24	0.657
	Σ	**45.043**						**85.96**	**6.956**
#2	1	0.954	0.058	0.128	0.319	91.000	F	2.98	0.270
	2	3.111	0.097	0.000	0.000	86.000	M	8.86	0.754
	Σ	**49.107**						**47.35**	**7.979**
#3	1	1.553	0.060	0.026	0.391	70.000	S	2.78	0.207
	Σ	**50.661**						**45.32**	**8.279**
#5	Σ	**56.660**						**45.75**	**9.898**

Subwatershed Sedimentology Detail:

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
#4	1	0.320	75.00	50.00	0.0005	1.0000	1	0.1	561	0.36	0.19
	2	0.320	75.00	33.00	0.9000	1.0000	2	256.1	521,338	280.86	159.21
	3	0.320	75.00	5.00	0.6400	1.0000	2	18.3	50,368	23.54	12.78
	Σ							**274.3**	**284,420**	**151.85**	**79.70**
#1	1	0.320	75.00	55.00	0.0005	1.0000	1	3.1	899	0.58	0.29
	2	0.320	75.00	50.00	0.6400	1.0000	2	775.5	595,261	320.69	186.57
	3	0.320	75.00	50.00	0.9000	1.0000	2	477.4	695,817	374.86	221.81
	Σ							**1,256.0**	**497,906**	**268.36**	**65.49**
#2	1	0.320	75.00	33.00	0.9000	1.0000	2	119.5	484,291	260.90	148.57
	2	0.320	75.00	5.00	0.6400	1.0000	2	30.2	52,502	28.28	15.59
	Σ							**377.0**	**178,376**	**22.26**	**4.46**
#3	1	0.320	75.00	55.00	0.0005	1.0000	1	0.1	623	0.40	0.20

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
	Σ							**317.8**	**87,663**	**0.60**	**0.21**
#5	Σ							**364.9**	**87,208**	**0.48**	**0.17**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	1. Forest with heavy ground litter	5.95	2.00	33.62	0.610	0.015
		1. Forest with heavy ground litter	71.40	20.00	28.01	2.130	0.003
		1. Forest with heavy ground litter	32.66	20.00	61.23	1.440	0.011
		1. Forest with heavy ground litter	46.64	20.00	42.88	1.720	0.006
		1. Forest with heavy ground litter	74.21	20.00	26.95	2.170	0.003
		1. Forest with heavy ground litter	68.94	20.00	29.01	2.100	0.003
		1. Forest with heavy ground litter	55.74	20.00	35.88	1.880	0.005
		1. Forest with heavy ground litter	44.62	20.00	44.82	1.690	0.007
		1. Forest with heavy ground litter	51.52	20.00	38.82	1.810	0.005
		1. Forest with heavy ground litter	50.40	20.00	39.68	1.790	0.006
		8. Large gullies, diversions, and low flowing streams	45.57	20.00	43.89	20.250	0.000
		8. Large gullies, diversions, and low flowing streams	34.42	20.00	58.10	17.600	0.000
		8. Large gullies, diversions, and low flowing streams	38.11	20.00	52.48	18.510	0.000
		8. Large gullies, diversions, and low flowing streams	24.69	20.00	81.00	14.900	0.001
		8. Large gullies, diversions, and low flowing streams	21.37	20.00	93.60	13.860	0.001
		8. Large gullies, diversions, and low flowing streams	32.89	20.00	60.80	17.200	0.000
		8. Large gullies, diversions, and low flowing streams	18.99	20.00	105.34	13.070	0.002
		8. Large gullies, diversions, and low flowing streams	17.57	20.00	113.81	12.570	0.002
		8. Large gullies, diversions, and low flowing streams	12.77	20.00	156.66	10.710	0.004
		8. Large gullies, diversions, and low flowing streams	10.79	20.00	185.28	9.850	0.005
#1	**1**	**Time of Concentration:**					**0.079**
#1	2	3. Short grass pasture	10.76	5.25	48.80	2.620	0.005
		8. Large gullies, diversions, and low flowing streams	7.01	14.75	210.28	7.940	0.007
		8. Large gullies, diversions, and low flowing streams	7.41	20.00	269.74	8.160	0.009

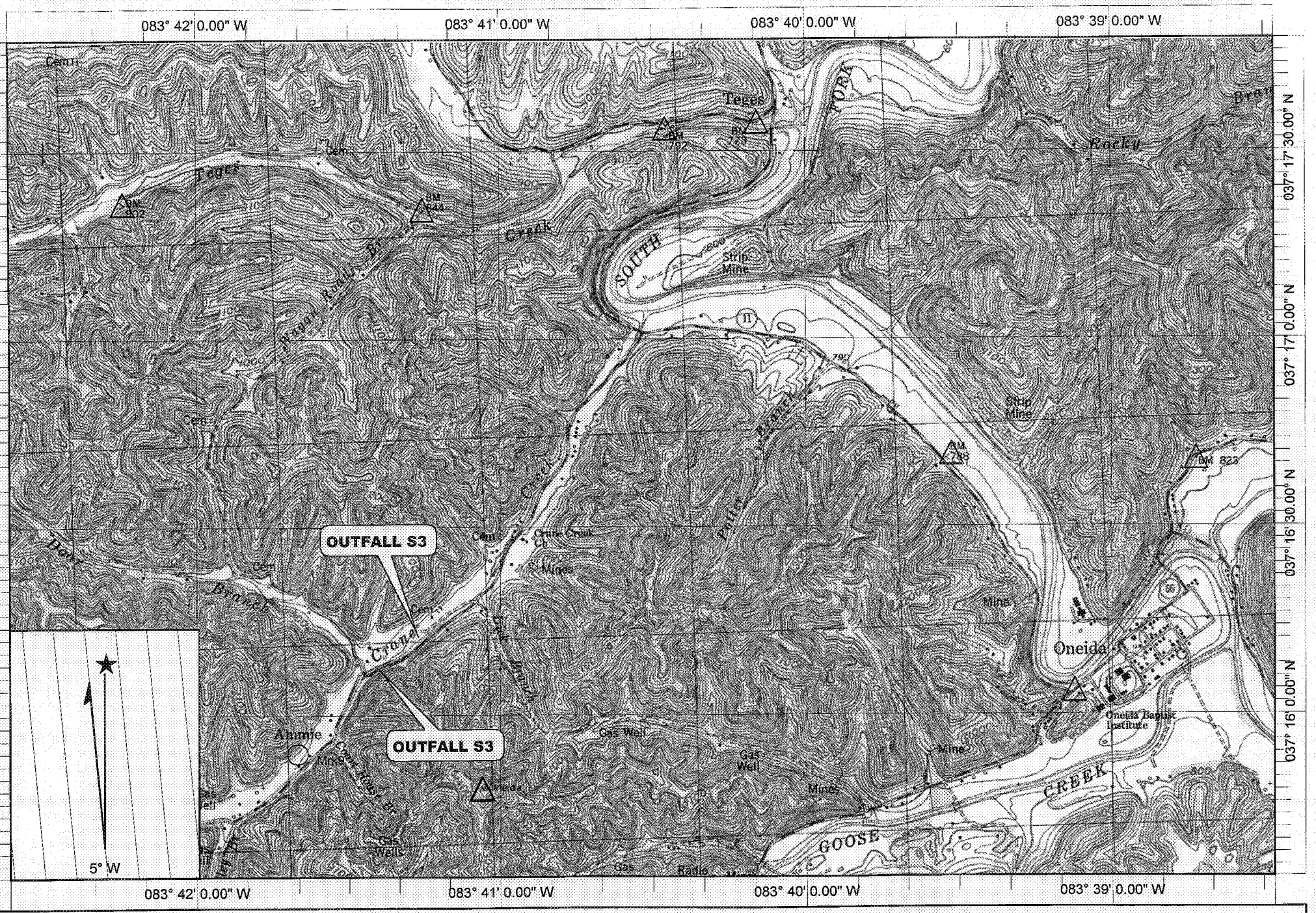
Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
		8. Large gullies, diversions, and low flowing streams	7.85	20.00	254.88	8.400	0.008
		8. Large gullies, diversions, and low flowing streams	2.63	10.00	379.88	4.860	0.021
		8. Large gullies, diversions, and low flowing streams	1.28	1.00	77.83	3.400	0.006
		8. Large gullies, diversions, and low flowing streams	24.07	4.00	16.62	14.710	0.000
		8. Large gullies, diversions, and low flowing streams	23.70	5.00	21.10	14.600	0.000
		8. Large gullies, diversions, and low flowing streams	20.81	5.00	24.03	13.680	0.000
		8. Large gullies, diversions, and low flowing streams	21.18	4.00	18.89	13.800	0.000
		8. Large gullies, diversions, and low flowing streams	2.18	0.90	41.24	4.430	0.002
#1	**2**	**Time of Concentration:**					**0.058**
#1	3	5. Nearly bare and untilled, and alluvial valley fans	50.00	20.00	40.00	7.070	0.001
		5. Nearly bare and untilled, and alluvial valley fans	50.00	20.00	40.00	7.070	0.001
		5. Nearly bare and untilled, and alluvial valley fans	42.66	19.34	45.34	6.530	0.001
		8. Large gullies, diversions, and low flowing streams	4.24	1.00	23.59	6.170	0.001
		8. Large gullies, diversions, and low flowing streams	2.63	10.00	379.87	4.860	0.021
		8. Large gullies, diversions, and low flowing streams	6.42	5.00	77.83	7.600	0.002
		8. Large gullies, diversions, and low flowing streams	24.07	4.00	16.62	14.710	0.000
		8. Large gullies, diversions, and low flowing streams	23.70	5.00	21.10	14.600	0.000
		8. Large gullies, diversions, and low flowing streams	20.81	5.00	24.03	13.680	0.000
		8. Large gullies, diversions, and low flowing streams	21.18	4.00	18.89	13.800	0.000
		8. Large gullies, diversions, and low flowing streams	2.18	0.90	41.24	4.430	0.002
#1	**3**	**Time of Concentration:**					**0.029**
#2	1	1. Forest with heavy ground litter	32.03	20.00	62.45	1.430	0.012
		1. Forest with heavy ground litter	50.70	20.00	39.45	1.800	0.006
		1. Forest with heavy ground litter	49.78	20.00	40.18	1.780	0.006
		1. Forest with heavy ground litter	51.28	20.00	39.00	1.810	0.005
		1. Forest with heavy ground litter	33.34	29.20	87.57	1.460	0.016
		6. Grassed waterway	3.87	5.48	141.47	2.950	0.013
#2	**1**	**Time of Concentration:**					**0.058**
#2	2	3. Short grass pasture	40.76	3.00	7.36	5.100	0.000
		6. Grassed waterway	11.21	10.00	89.17	5.020	0.004

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
		6. Grassed waterway	4.67	10.00	214.31	3.240	0.018
		7. Paved area and small upland gullies	1.00	0.50	50.00	2.010	0.006
		7. Paved area and small upland gullies	33.33	5.00	15.00	11.620	0.000
		3. Short grass pasture	0.25	0.25	100.00	0.400	0.069
#2	**2**	**Time of Concentration:**					**0.097**
#3	1	1. Forest with heavy ground litter	30.38	20.00	65.83	1.390	0.013
		1. Forest with heavy ground litter	62.21	20.00	32.15	1.990	0.004
		1. Forest with heavy ground litter	60.70	20.00	32.95	1.970	0.004
		1. Forest with heavy ground litter	69.49	20.00	28.78	2.100	0.003
		1. Forest with heavy ground litter	74.24	20.00	26.94	2.170	0.003
		1. Forest with heavy ground litter	64.00	20.00	31.25	2.020	0.004
		1. Forest with heavy ground litter	86.84	20.00	23.03	2.350	0.002
		1. Forest with heavy ground litter	88.62	22.90	25.84	2.380	0.003
		8. Large gullies, diversions, and low flowing streams	3.04	4.30	141.28	5.230	0.007
		8. Large gullies, diversions, and low flowing streams	3.28	5.30	161.82	5.420	0.008
		8. Large gullies, diversions, and low flowing streams	3.35	6.60	197.00	5.490	0.009
#3	**1**	**Time of Concentration:**					**0.060**
#4	1	1. Forest with heavy ground litter	17.70	20.00	113.00	1.060	0.029
		1. Forest with heavy ground litter	20.69	20.00	96.66	1.150	0.023
		1. Forest with heavy ground litter	42.18	20.00	47.42	1.640	0.008
		1. Forest with heavy ground litter	24.17	20.00	82.76	1.240	0.018
		1. Forest with heavy ground litter	51.83	20.00	38.59	1.820	0.005
		1. Forest with heavy ground litter	53.88	20.00	37.12	1.850	0.005
#4	**1**	**Time of Concentration:**					**0.088**
#4	2	3. Short grass pasture	0.00	0.00	0.00	0.000	0.000
		4. Cultivated, straight row	39.46	10.00	25.34	5.610	0.001
		4. Cultivated, straight row	49.74	20.00	40.21	6.300	0.001
		4. Cultivated, straight row	49.52	20.00	40.39	6.290	0.001
		4. Cultivated, straight row	79.53	19.00	23.89	7.970	0.000
		4. Cultivated, straight row	1.30	1.00	76.65	1.020	0.020
		4. Cultivated, straight row	33.33	25.00	75.00	5.160	0.004
		4. Cultivated, straight row	6.84	1.00	14.61	2.330	0.001
#4	**2**	**Time of Concentration:**					**0.028**
#4	3	3. Short grass pasture	13.43	23.50	174.95	2.930	0.016
		6. Grassed waterway	2.04	7.50	368.20	2.140	0.047
		8. Large gullies, diversions, and low flowing streams	33.33	5.80	17.40	17.320	0.000
		3. Short grass pasture	0.10	0.20	200.00	0.250	0.222
#4	**3**	**Time of Concentration:**					**0.285**

Subwatershed Muskingum Routing Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	8. Large gullies, diversions, and low flowing streams	7.01	14.75	210.28	7.940	0.007
		8. Large gullies, diversions, and low flowing streams	7.41	20.00	269.74	8.160	0.009
		8. Large gullies, diversions, and low flowing streams	7.85	20.00	254.88	8.400	0.008
		8. Large gullies, diversions, and low flowing streams	2.63	10.00	379.88	4.860	0.021
		8. Large gullies, diversions, and low flowing streams	1.28	1.00	77.83	3.400	0.006
		8. Large gullies, diversions, and low flowing streams	24.07	4.00	16.62	14.710	0.000
		8. Large gullies, diversions, and low flowing streams	23.70	5.00	21.10	14.600	0.000
		8. Large gullies, diversions, and low flowing streams	20.81	5.00	24.03	13.680	0.000
		8. Large gullies, diversions, and low flowing streams	21.18	4.00	18.89	13.800	0.000
		8. Large gullies, diversions, and low flowing streams	2.18	0.90	41.24	4.430	0.002
		8. Large gullies, diversions, and low flowing streams	7.69	6.25	81.30	8.310	0.002
#1	**1**	**Muskingum K:**					**0.055**
#2	1	3. Short grass pasture	40.76	3.00	7.36	5.100	0.000
		6. Grassed waterway	11.22	10.00	89.12	5.020	0.004
		6. Grassed waterway	2.77	4.54	163.72	2.490	0.018
		6. Grassed waterway	4.67	10.00	214.31	3.240	0.018
		7. Paved area and small upland gullies	1.00	0.50	50.00	2.010	0.006
		6. Grassed waterway	2.31	2.50	108.28	2.270	0.013
		8. Large gullies, diversions, and low flowing streams	33.33	5.00	15.00	17.320	0.000
		3. Short grass pasture	0.25	0.25	100.00	0.400	0.069
#2	**1**	**Muskingum K:**					**0.128**
#3	1	7. Paved area and small upland gullies	3.08	0.80	26.00	3.530	0.002
		8. Large gullies, diversions, and low flowing streams	1.87	3.97	212.00	4.100	0.014
		7. Paved area and small upland gullies	34.00	1.09	3.20	11.730	0.000
		9. Small streams flowing bankfull	0.51	0.34	66.51	6.430	0.002
		9. Small streams flowing bankfull	0.79	1.95	246.86	7.990	0.008
#3	**1**	**Muskingum K:**					**0.026**
#4	1	3. Short grass pasture	39.46	10.00	25.34	5.020	0.001
		3. Short grass pasture	49.74	20.00	40.21	5.640	0.001
		3. Short grass pasture	50.00	20.00	40.00	5.650	0.001

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
		3. Short grass pasture	49.52	20.00	40.39	5.620	0.001
		3. Short grass pasture	79.53	19.00	23.89	7.130	0.000
		3. Short grass pasture	1.30	1.00	76.65	0.910	0.023
		3. Short grass pasture	33.33	25.00	75.00	4.610	0.004
		3. Short grass pasture	6.84	1.00	14.61	2.090	0.001
		3. Short grass pasture	15.26	23.50	154.00	3.120	0.013
		6. Grassed waterway	2.04	7.50	368.11	2.140	0.047
		8. Large gullies, diversions, and low flowing streams	33.33	5.80	17.40	17.320	0.000
		3. Short grass pasture	0.10	0.20	200.00	0.250	0.222
#4	**1**	**Muskingum K:**					**0.314**
#4	2	3. Short grass pasture	15.26	23.50	154.00	3.120	0.013
		6. Grassed waterway	2.04	7.50	368.11	2.140	0.047
		8. Large gullies, diversions, and low flowing streams	33.33	5.80	17.40	17.320	0.000
		3. Short grass pasture	0.10	0.20	200.00	0.250	0.222
#4	**2**	**Muskingum K:**					**0.282**



Name: ONEIDA
Date: 9/23/2009
Scale: 1 inch equals 2000 feet

Location: 037° 16' 41.3" N 083° 40' 32.44" W
Caption: KPDES PERMIT
Blue Mountain Mining, Inc. DNR Permit No. 826-0635

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