

Razavi, Mohammad (EEC)

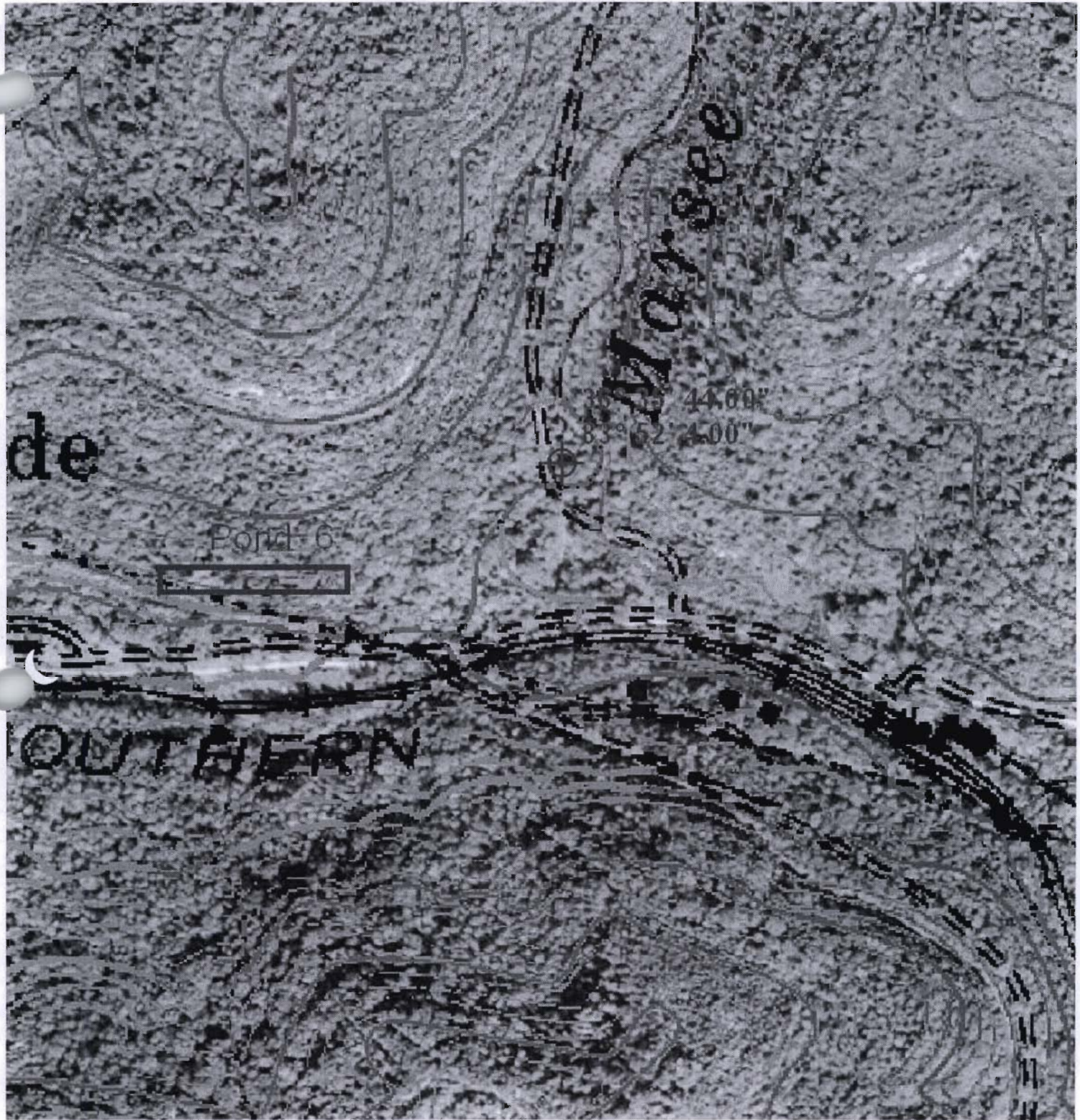
From: Razavi, Mohammad (EEC)
To: 'Danny Caudill'
Cc: Eneje, Jerome (EEC); 'Timothy C. Howard'; Boles, Tricia (EEC)
Subject: 807-0365 NW

Mr. Caudill,

Thanks for the attachments; I do not have anymore questions and I will forward my review to Mr. Eneje.

Regardless of 10% or less (Pond #6 has a 9.8% increase in flooding potential), it is understood that if pond #6 floods the adjoining/downstream road, it will not have adverse impacts on emergency vehicles (e.g., ambulance, etc.) getting through.

If this is not the case, our inspector and Mr. Howard will inform us immediately.



Sincerely,
Mohammad

--Original Message-----
From: Danny Caudill [mailto:dcaudill@howardeng-geo.com]
Sent: Monday, December 08, 2008 8:24 AM
To: Razavi, Mohammad (EEC)

12/9/2008

Subject: 807-0365 NW

Dear Mohammad:

Please find attached in pdf format the following responses to your e-mail dated December 4, 2008.

1. REAME run (plane failure): The pore-pressure of 0.05 has been replaced with 0.10 as requested.
2. Pond 6 (Pre-Mine Discharge): The acreage has been corrected to 30.00 for the SEDCAD run.
3. According to Department Policy if the pond 25 year SEDCAD run is within 10% of the Pre-Mine SEDCAD run we do not have to address any flooding potential.

If you have any questions or require additional information please let me know.

Thanks:
Danny Caudill
Howard Engineering & Geology, Inc.

12/9/2008

Razavi, Mohammad (EEC)

From: Danny Caudill [dcaudill@howardeng-geo.com]
Sent: Monday, December 08, 2008 8:24 AM
To: Razavi, Mohammad (EEC)
Subject: 807-0365 NW

Attachments: HF1ReameRun.pdf; Pond6-SEDCAD.pdf



HF1ReameRun.pdf (831 KB) Pond6-SEDCAD.pdf (405 KB)

Dear Mohammad:

Please find attached in pdf format the following responses to your e-mail dated December 4, 2008.

1. REAME run (plane failure): The pore-pressure of 0.05 has been replaced with 0.10 as requested.
2. Pond 6 (Pre-Mine Discharge): The acreage has been corrected to 30.00 for the SEDCAD run.
3. According to Department Policy if the pond 25 year SEDCAD run is within 10% of the Pre-Mine SEDCAD run we do not have to address any flooding potential.

If you have any questions or require additional information please let me know.

Thanks:

Danny Caudill
Howard Engineering & Geology, Inc.

Razavi, Mohammad (EEC)

From: Razavi, Mohammad (EEC)
Sent: Thursday, December 04, 2008 1:39 PM
To: 'Danny Caudill'
Subject: 807-0365 NW Three (3) requests

Mr. Caudill,

Depending on the amount of burden that is on your staff, if you prefer a TWW letter please let me know. Otherwise, please email the three (3) below documents (PDF, etc.):

1. REAME run (Plane failure): Please replace the pore-pressure of 0.05 with 0.10 to obtain the appropriate safety factors.
2. Pond 6 (Pre-Mine Discharge): P6-25yr-Pre-Rev1.sc4 is using 86.08-ac instead of 30.00-ac (as used in the during-mining files).
3. Short of Ponds 4 & 7, the rests have flooding potentials; regardless of 10%-or-less, please ask Mr. Howard (whom has signed/stamped these articles) if there would be adverse impacts on any structures (residential & non-residential) due to increase in the flooding potential.

These are two (2) simple requests (changing constants) & one (1) statement from the engineer in-charge.

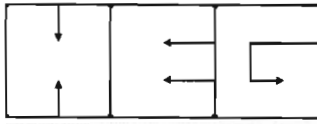
Sincerely,

Mohammad Razavi, P.E.

Division of Mine Permits
2 Hudson Hollow Road
Frankfort, KY 40601

Phone: 502-564-2320
Fax: 502-564-6764

Howard



Engineering & Geology, Inc.

P.O. Box 271 • 2550 W. Hwy. 72, Suite 1 • Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

November 12, 2008

Mr. Douglas L. Bartley, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Jerome Eneje

RE: Appolo Fuels, Inc.
Permit No. 807-0365, Original

Dear Jerome:

In response to your first technical review letter dated October 10, 2008, we have made the following corrections to the above referenced application.

- 1) Item 11.5: Letters from the gas company and power company have been provided. The lines that may be moved will be determined by field conditions and will not be known until the actual mining process begins.
- 2) Item 8.8: The calculated acreage fee has been corrected.
- 3) Item 24.5: This item has been addressed as requested.
- 4) Item 24.8: The requested information has been provided.
- 5) Item 26.3: Revised REAME runs have been provided.
- 6) Item 31.3: Revised pre-mining SEDCAD runs have been provided.

Critical Resource Section Review:

- 7) The size of the watershed has been provided.
- 8) Additional information and drawings have been provided.
- 9) A description of how the sediment between the toe of the fill and toe of the pond has been included.
- 10) Habitat enhancement discussion and drawings has been provided.
- 11) Drawing for the restored stream channel have been provided.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,

A handwritten signature in blue ink, appearing to read 'D. Caudill', is written over a light blue rectangular background.

Danny Caudill
Howard Engineering and Geology, Inc.



ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

October 10, 2008

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Permit Application No. 807-0365
Original
APPOLO FUELS INC

Dear Mr. Howard:

The Division of Mine Permits has completed the first technical review of the referenced permit application. Effective the date of this letter, this application has been placed in the "Technically Withdrawn" (TWW) status. The following deficiencies have been identified from the review:

1. Item 11.5: For the gas lines within the proposed permit area, specify which of them that will be relocated and the ones that will be undisturbed. Provide the approval documents from their owners. Also, provide waiver documents from Eastern Kentucky Utility.
2. Item 8.8: The calculated acreage fee for Increment 7 should be \$4,350.00.
3. Item 24.5: Be advised that unscheduled blasting may only be conducted in accordance with 405 KAR 16:120 Section 4 (1) (b-c). Address.
4. Item 24.8: Be advised that when blasting within 1000' of a public road traffic must be stopped. Provide a detailed public protection plan when blasting within

1000' of a public road and identify the road(s) where the protection plan will be implemented.

5. **Item 26.3:** Attachment 26.3.A: Since no interface material is modeled into REAME (circular failure), please make clear whether the applicant is excavating to bedrock for the footprint of the fill.
6. **Item 31.3:** Ponds 1, 2, 3, 4, 5, 6, & 7 (SEDCAD, Pre-mining): They all have CN=86, 79, etc. & mining land conditions; please clarify; if decide to replace them with CN=73, please discuss the flooding potential (if any).

Critical Resource Section Review:

7. The watershed size above lowest point of disturbance has not been included.
8. Pre-disturbance diagrams for the representative stream do not contain sufficient information. These diagrams should accurately reflect the existing conditions:
 - Profile, plan, and cross-sectional views of stream channel based on field measurements
 - Channel slope and width
 - Riffle-pool and/or riffle run ratios
9. A description of how sediment will be removed from stream segment between toe of fill and toe of pond should be included.
10. Describe the habitat enhancements to be utilized including method of construction and types (e.g. root wads or other large woody debris).
11. Include diagrams of restored stream channel (post-construction) *that are specific to the affected stream*, as opposed to diagrams of "typical" conditions. Restored stream channels **must** be based on reference reach conditions. The diagrams should include the following information:
 - Profile, plan, and cross-sectional view of stream channel (X-sect. through embankment area)
 - Channel slope and width
 - Location of riffles, pools, and runs
 - Location and orientation of habitat enhancements and hydrologic structures
 - Normal, bank-full, and flood prone widths
 - Riparian zone width and spacing of plantings

The deficiencies noted above must be corrected to comply with applicable State surface coal mining permitting laws and regulations [KRS 350 and 405 KAR].

TIMOTHY C HOWARD

Page 3

To ensure timely processing of your application, the Division respectfully requests that the deficiencies be corrected and the application returned to this agency within 60 days of the date of this letter. Failure to do so could result in additional enforcement action by the Division of Mine Reclamation and Enforcement.

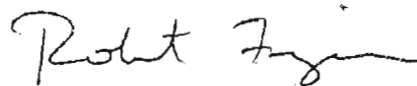
Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic format, an entirely new MPA file must be resubmitted. If in paper format, the Regional Office and this office must be updated with the corrections upon resubmittal. [Refer to 405 KAR 8:010 Section 12(1)(c)]

If you have questions concerning this matter, please contact me at (502) 564-2320.

Sincerely,



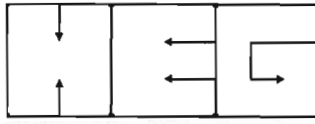
Douglas L. Bartley, Supervisor
Division of Mine Permits

DLB/JE/jd

Enclosure original and letter

c: File No. 807-0365 (e)
Middlesboro Regional Office (e)
Jerome Eneje (e)
GARY ASHER
APPOLO FUELS INC
PO BOX 1727
MIDDLESBORO KY 40965

Howard



Engineering & Geology, Inc.

P.O. Box 271 • 2550 W. Hwy. 72, Suite 1 • Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

August 13, 2008

Mr.: Douglas L. Bartley, Supervisor
Department for Natural Resources
Division of Mining Permits
#2 Hudson Hollow Complex
Frankfort, KY 40601

Attn: Jerome Eneje

RE: Appolo Fuels, Inc.
Permit No. 807-0365, Original

Dear Jerome:

In response to your first completeness review letter dated July 17, 2008, we have made the following corrections to the above referenced application.

- 1) Item 6.6 – A comprehensive walk has been completed.
- 2) Item 8.4 & 8.5:
 - a) The incremental bonding chart for Increment #2 has been corrected.
 - b) The incremental bonding chart for Increment #1 has been corrected.
 - c) The acreage on the items now agrees with that in Items 8.8 as well as with the MRP and ERI maps.
- 3) Facsimile of the overlapped areas in accordance with RAM 56 have been provided.
- 4) Item 11.5:
 - a) Acreage for the alternate topsoil now matches 7.2 and 8.5.
 - b) There is no mining proposed within 100 feet of a public road. The permit area within 100 feet of a public road is for road only. The road to the Cemetery is a mining road being used by the public.
 - c) There is no mining proposed within 300' of a house or church. The proposed permit area within 80 feet of the cemetery and 20' of the church are previously and currently permitted roads that have valid existing rights and will be used for access and coal haulage as previously and/or currently approved. There is no mining proposed within a 100' radius of any gas wells. The gas lines will either be undisturbed or relocated.
 - d) A waiver/variance map has been provided in Attachment 11.4.A.
 - e) The stream buffer zone has been included as one of the variances.
 - f) The waiver for alternate sediment control has been removed.
 - g) The church and the cemetery have been addressed in Attachment 11.4.A. and Attachment 11.6.A.

- h) A facsimile of the notice and a notarized copy of the certified mail receipt notifying the owner of the gas wells and gas lines of the proposed disturbance have been provided.
- 5) Item 12.2:
 - a) The first paragraph has been corrected.
 - b) The waiver for alternate sediment control has been removed from the application and therefore no discussion in this attachment is required.
- 6) Item 15:
 - a) The NP and PA have been shown for geologic sites HW-1 and HW-2
 - b) The geologic information sheet for PKC 4 has been provided.
 - c) The seam that will be used for alternate topsoil has been shown on the geologic columns drawing.
- 7) Item 16: The results for GW 5 have been included from Appolo Fuels permit #807-5025, Amendment #3.
- 8) Item 17: Data for sit SW 004 has been provided.
- 9) Item 21.6 & 21.10: The acreage has been corrected.
- 10) Items 21.7 & 21.8: The previous mining has been addressed.
- 11) Item 21.5: A notarized copy of the certified mail receipt showing delivery of the request for post mining land use comments has been provided.
- 12) A more detailed planting plan has been provided in Attachment 22.4.A.
- 13) A planting pattern drawing has been provided in Attachment 22.4.A.
- 14) An Archaeological Survey has been completed and the report is being compiled and will be submitted to the department upon receipt. A Stream Restoration Plan for Ponds #1 and #4 has been provided in Attachment 31.6.

If you have any questions or require additional information please call our office at your earliest convenience.

Sincerely,



Danny Caudill
Howard Engineering and Geology, Inc.



**ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES**

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

July 17, 2008

TIMOTHY C HOWARD
HOWARD ENGINEERING & GEOLOGY INC
PO BOX 271
HARLAN KY 40831

RE: Application No. 807-0365
Original
APPOLO FUELS INC

Dear Mr. Howard:

The Division of Mine Permits has conducted a completeness review of the above referenced application. As a result of this review your application was found incomplete and therefore unacceptable in the following respects:

1. Item 6.6: Due to proposed additions and changes, regional office personnel must perform an additional re-walk to verify all changes and new proposals.
2. Item 8.4 & 8.5:
 - a) Increment #2 is showing a total of 7.34 acres but the Incremental Bonding map is identifying 8.47 acres for the same increment. Clarify.
 - b) Increment #1 is showing a total of 27.65 acres while the IBM has identified 27.78 acres for the same increment. Clarify.

- c) The acreage on these items must agree with those in Items 8.8 as well as with the MRP and ERI maps.
3. Item 8.6: Provide a facsimile of the overlapped areas in accordance with RAM 56.
4. Item 11.5:
 - a) The acreage for the alternate topsoil does not match Items 7.2 and 8.4.
 - b) The public road must be addressed and an approval document from the government agency that has jurisdiction over it must be provided.
 - c) There appear to be lots of houses, cemeteries, gas lines and wells that have not been addressed. Provide all approval documents from all such owners and show all of them on the maps.
 - d) Provide a waiver/variance map and identify all the facilities, the names of each and how close the proposed operation will come to them.
 - e) Include the stream buffer zone as one the variances.
 - f) Provide design drawings of the alternate sediment control, including site plan with locations. Include a detailed description of the installation, the maintenance of the fence or bales, and the time frame for placement and removal. Since the water quality standards still must be maintained, a KPDES point should be included a couple of hundred feet below the larger alternate sediment control area.
 - g) The church and cemetery must be specifically addressed.
 - h) In accordance with KRS 350.063 the applicant must notify the owner of all oil and gas facilities of the intent to disturb access roads to such facilities. The Department will accept a facsimile of the notice and a certified mail receipt as documentation of compliance”.
5. Item 12.2:
 - a) The first paragraph of the attachment is addressing this permitting action as an amendment.

- b) Include a discussion about the alternate sediment controls.
6. Item 15:
 - a) Show the NP PA information on the geologic columns.
 - b) Provide the geologic information sheet for site PKC 4.
 - c) Show the seam that will be used for the alternate topsoil on the geologic columns.
7. Item 16: Provide the Sample data information for the GW 5 site.
8. Item 17: Provide the data for site SW004.
9. Item 21.6 & 21.10: The acreage shown does not agree with the surface area being added.
10. Items 21.7 and 21.8: Address for the previous mining operation associated with the proposed operation.
11. Item 21.5: Provide comments concerning the proposed post mining land use by each legal or equitable owner of record of the surface of the proposed permit area. See 405 KAR 8:030/8:040, Section 37(1) (e).
12. Provide a detailed planting plan, which includes but is not limited to, a schedule and sequence of planting, whether tree seeds or seedlings will be planted, and a description of planting methods.
13. Provide a planting pattern that shows the placement and spacing of the tree seedlings.
14. As identified in the Combined cover letter dated June 24, 08; the applicant must submit a Stream Restoration Plan, and an Archaeological Survey. CRRS will not AAA until these items are received.

This review has resulted in the application being administratively withdrawn effective the date of this letter. (All corrections identified above should be made and the application resubmitted to this office within 30 days of the date of this letter. The applicant is also responsible for ensuring that the Regional Office copy and Frankfort office copy of the application are also corrected.)

TIMOTHY C HOWARD

Page 4

Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit.

Please disregard if you have filed the NOI.

NOTE: If this application is in an electronic media format, the CD/disk will be retained by this office and a new CD/disk must be resubmitted with the red original binder.

Should you have any questions regarding this matter, you may contact me at (502) 564-2320.

Sincerely,



Douglas L. Bartley, Supervisor
Division of Mine Permits

DLB/JE/jd

Enclosure original and letter

c: File No. 807-0365 (e)

Middlesboro Regional Office (e)

Jerome Eneje (e)

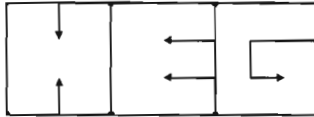
GARY ASHER

APPOLO FUELS INC

PO BOX 1727

MIDDLESBORO KY 40965

Howard



Engineering & Geology, Inc.

P.O. Box 271 • 2550 W. Hwy. 72, Suite 1 • Harlan, Ky 40831 • Phone/Fax: (606) 573-6924 • Email: dcaudill@howardeng-geo.com

July 2, 2008

Department for Natural Resources
Middlesboro Regional Office
1804 East Cumberland Avenue
Middlesboro, Kentucky 40965

RE: Appolo Fuels, Inc.
Permit No. 807-0365
Original Application

To Whom It May Concern:

We are submitting our "MPA-01" and "MPA-03" Applications for the above referenced Mining operation. The mining operation is located 0.02 miles northeast from the junction of Kentucky 74 with Kentucky 535 in Bell County. This operation is further located on the Eagan & Fork Ridge 7 ½ minute U.S.G.S. Quadrangle maps at Latitude 36°35'44"N and Longitude 83°52'04"W.

Please contact us at our office if you have any questions or require additional information.

Sincerely,

A handwritten signature in blue ink that reads "Danny Caudill".

Danny Caudill
Howard Engineering & Geology, Inc.

RECEIVED
MINE RECLAMATION & ENF
MIDDLEBORO OFFICE

RECEIVED
2008 JUL -2 P 12:47

TECHNICAL INFORMATION FOR A MINING PERMIT

This form supplies all technical information in regard to the mining and reclamation plan for the permit. It shall be filed in conjunction with MPA-01 for all original and amendment applications.	PERMIT NUMBER <u>807-0365</u>
	DSMRE ID NUMBER <u>000095</u>

3. Identification of Applicant/Engineer

3.1 Applicant Name Appolo Fuels, Inc.

3.2 Engineer Timothy C. Howard Registration No. 15,317
Associated with Howard Engineering & Geology, Inc.
Address P.O. Box 271, 2550 W.Hwy. 72 Suite 1
City Harlan State KY Zip 40831
Telephone No. (606)573-6924 FAX (606)573-9543

3.3 Indicate the name, address, and telephone number of the individual to whom all permit application correspondence including return of the application for correction or modification, is to be addressed. If such designation is not made, the cabinet will return the application only to the applicant. If such designation is changed at some future date, the applicant is responsible for notifying the cabinet.

Name Timothy C. Howard Telephone No. (606)573-6924
Address P.O. Box 271, 2550 W.Hwy. 72 Suite 1
City Harlan State KY Zip 40831

4. Site Location Information

4.1 Name of proposed mine Jellico Mine #1
Local Address P.O. Box 1727, Middlesboro, Kentucky 40965

4.2 Contact person at mine site Larry Hunley Title Environmental Manager
Telephone Number (606) 248-1535

4.3 County(ies) Bell Quadrangle(s) Fork Ridge & Eagar
Latitude 36-35-44 Longitude 83-52-04
Nearest named stream Back Creek Nearest community Fonde

4.4 Is any of the proposed mining area previously permitted or pending permitting under KRS 350?
[XX] YES [] NO. If "YES", list the permittee name, permit number, and current status of operations. If additional pages are necessary, identify as "Item 4.4 continued".
See Attachment 4.4.A.

5. Application Information

5.1 Type of application Original Amendment No. _____

ATTACHMENT 4.4.A

PREVIOUSLY PERMITTED AREAS/OVERLAPS

The permits which will be overlapped as part of this permit application are described as follows:

- 1) Appolo Fuels, Inc. permit #807-0314. Permit status is issued and active.
- 2) Bell County Coal Corporation permit #807-5202. Permit is issued and active.
- 3) Bell County Coal Corporation permit #807-5157. Permit is issued and active.

The above listed permits have been delineated on the Mining and Reclamation Plan Map provided in this application.

5.2 Type of Operation: (check all appropriate boxes)

- | | |
|---|--|
| <input type="checkbox"/> Surface Area (SA) | <input type="checkbox"/> Refuse Disposal (RD) |
| <input checked="" type="checkbox"/> Surface Contour (SC) | <input type="checkbox"/> Underground (UG) |
| <input checked="" type="checkbox"/> Surface Auger (SG) | <input type="checkbox"/> Processing Plant (PP) |
| <input checked="" type="checkbox"/> Surface Remining (SR) | <input type="checkbox"/> Haul Road Only (LO) |
| <input type="checkbox"/> Surface Refuse Recovery (RR) | <input type="checkbox"/> Load Out Only (LO) |
| <input type="checkbox"/> Steep Slope (SS) | <input type="checkbox"/> In-situ (IS) |
| <input type="checkbox"/> Surface Mountaintop (SM) | <input type="checkbox"/> Other _____ |

6. Advance Notification Information

6.1 Is proposed permit located within boundaries for which a governmental planning agency has jurisdiction to act with regard to land use, air, or water quality planning? YES NO. If "YES", provide agency name and correct mailing address:

Agency Name _____
 Mailing Address _____

6.2 Is proposed permit area located within boundaries of any sewage and/or water treatment authorities, water companies which provide sewage or water services to citizens in the area or the proposed permit, or have water sources, collection, treatment, or distribution facilities located in the area of the proposed permit? YES NO.

Authority/Company Name _____
 Mailing Address _____

6.3 Is proposed permit area located within the watershed of any U.S. Army Corps of Engineer projects? YES NO. If "YES", indicate below and provide one additional copy of the application:

- | | | |
|---------------------|--|--|
| Huntington District | <input type="checkbox"/> Dewey Lake | <input type="checkbox"/> Fishtrap Lake |
| | <input type="checkbox"/> Grayson Lake | <input type="checkbox"/> Paintsville Lake |
| | <input type="checkbox"/> Yatesville Lake | |
| Louisville District | <input type="checkbox"/> Buckhorn Lake | <input type="checkbox"/> Carr Fork Lake |
| | <input type="checkbox"/> Cave Run Lake | <input type="checkbox"/> Green River Watershed |
| Nashville District | <input type="checkbox"/> Lake Cumberland | <input type="checkbox"/> Laurel River Lake |
| | <input type="checkbox"/> Martin's Fork Watershed | <input type="checkbox"/> Lake Barkley |
| | <input type="checkbox"/> Dale Hollow Lake | <input type="checkbox"/> Middlesboro Flood Control Project Watershed |

6.4 Is proposed permit area located within the official limits of any town, city or municipality? YES NO. If "YES", provide name and county:

Town/City Name _____ County _____

6.5 Was any of the data presented in this application prepared/provided as a result of a Small Operator Assistance Program (SOAP) grant?

YES NO. If "YES", provide SOAP identification number _____.

6.6 Is the proposed permit boundary and acreage under this application the same as proposed under the corresponding "preliminary" permit application?

YES NO. If "NO", describe differences:

7.25 acres of Roads, 3.58 acres of Mine Management Areas and 3.92 acres of Mining Area have been added to the permit

NOTE: If significant differences are determined to exist, another field walk by regional personnel may be required.

7. Permit Information

7.1 Each new original permit will be issued for a term of five (5) years. If an initial term in excess of five (5) years is required, provide the information stipulated by 405 KAR 8:010, Section 17 as "Attachment 7.1.A."

N/A, More than five (5) year permit term not requested

7.2 Provide the acreage associated with the following activities. If additional pages are necessary, identify as "Item 7.2 continued".

	Currently Permitted	Additions/ Deletions	Redesignations	Total Acreage
Mining or Face Up Areas	---	150.45	---	150.45
Roads	---	31.36	---	31.36
Sediment Ponds	---	1.31 ¹	---	1.31 ¹
Spoil Storage Areas	---	6.54	---	6.54
Waste Disposal Areas	---	---	---	---
Facility and Processing Areas	---	---	---	---
Coal Stockpile & Loading Areas	---	---	---	---
Mine Management Areas	---	3.58	---	3.58
Total Surface Disturbance Area	---	193.24 ✓	---	193.24
Underground Areas	---	---	---	---
Auger Areas	---	263.50	---	263.50
Total Underground/Auger Area	---	263.50 ✓	---	263.50
Permit Area	---	456.74 ✓	---	456.74

¹ On-Bench Dug-Out Pond Acreage Included In Mining Area and Roads.

7.3 If this permit contains acreage in more than one county, name the counties affected and specify surface and underground acreage within each county. If incremental acreage fees are being used, provide a table indicating acreage per county, per increment as Attachment 7.3.A.

N/A - All Acreage In Bell County Only

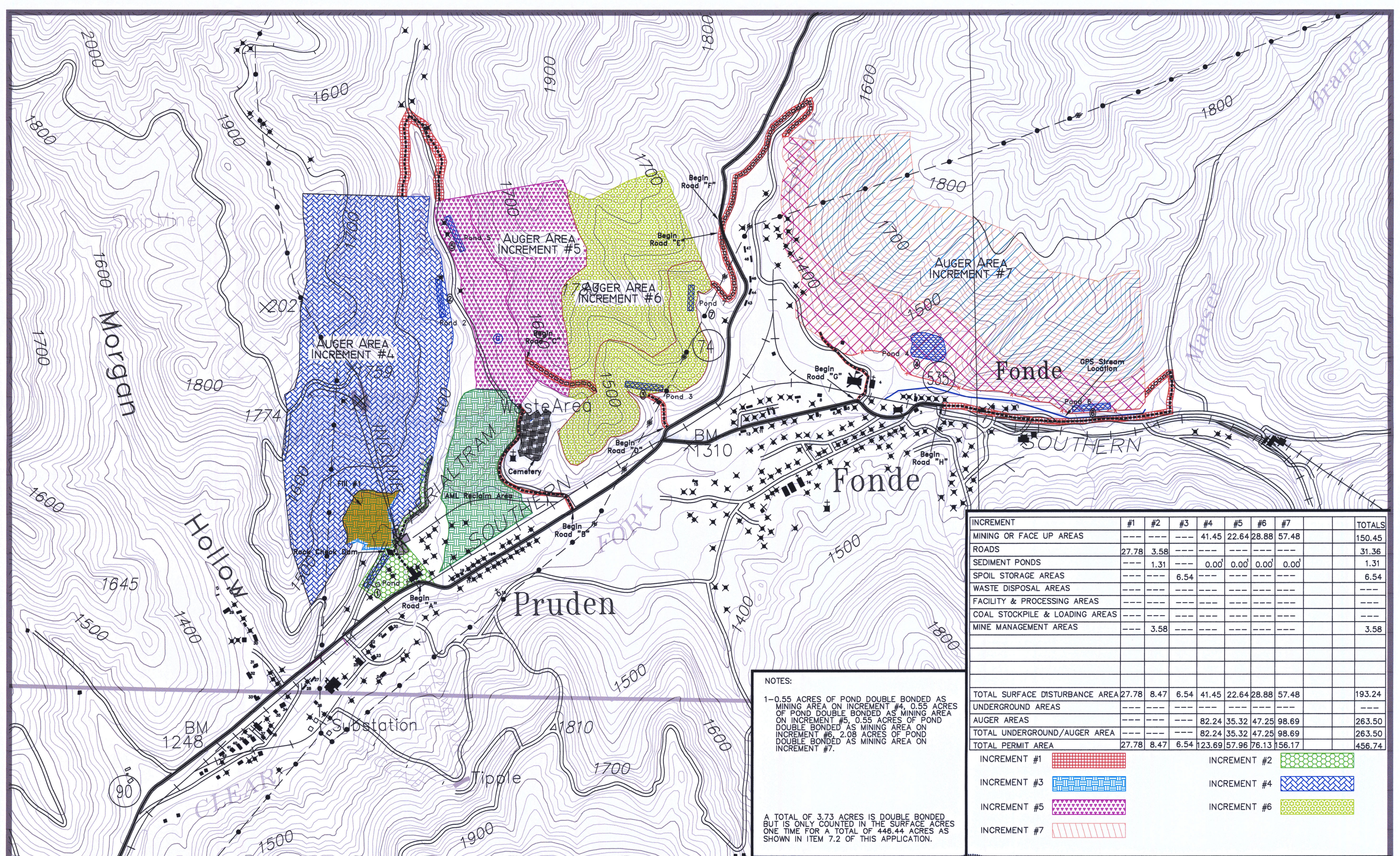
County	Total Surface Acreage	Total Underground Acreage

8. Bonding & Fees

- 8.1 Check the proposed bonding plan to be used:
 Single Area Incremental, with Seven (7) total increments.
- 8.2 If incremental bonding is proposed, identify the increment(s) which will be initially bonded prior to permit issuance.
Increment #1
- 8.3 For incremental bonding submit an incremental bonding map to clearly identify the number and boundary of each increment.
See Attachment 8.3.A
- 8.4 Complete the following charts with acreage for each increment:

Increment	#1	#2	#3
Mining or Face Up Areas	---	---	---
Roads	27.78	3.58	---
Sediment Ponds	---	1.31	---
Spoil Storage Area	---	---	6.54
Waste Disposal Areas	---	---	---
Facility and Processing Areas	---	---	---
Coal Stockpile & Loading Areas	---	---	---
Mine Management Areas	---	3.58	---
Total Surface Disturbance Area	27.78	8.47	6.54
Underground Areas	---	---	---
Auger Areas	---	---	---
Total Underground/Auger Area	---	---	---
Permit Area	27.78	8.47	6.54

See Attachment 8.4.A For Additional Increments.



INCREMENT	#1	#2	#3	#4	#5	#6	#7	TOTALS
MINING OR FACE UP AREAS	---	---	---	41.45	22.64	28.88	57.48	150.45
ROADS	27.78	3.58	---	---	---	---	---	31.36
SEDIMENT PONDS	---	1.31	---	0.00'	0.00'	0.00'	0.00'	1.31
SPOIL STORAGE AREAS	---	---	6.54	---	---	---	---	6.54
WASTE DISPOSAL AREAS	---	---	---	---	---	---	---	---
FACILITY & PROCESSING AREAS	---	---	---	---	---	---	---	---
COAL STOCKPILE & LOADING AREAS	---	---	---	---	---	---	---	---
MINE MANAGEMENT AREAS	---	3.58	---	---	---	---	---	3.58
TOTAL SURFACE DISTURBANCE AREA	27.78	8.47	6.54	41.45	22.64	28.88	57.48	193.24
UNDERGROUND AREAS	---	---	---	---	---	---	---	---
AUGER AREAS	---	---	---	82.24	35.32	47.25	98.69	263.50
TOTAL UNDERGROUND/AUGER AREA	---	---	---	82.24	35.32	47.25	98.69	263.50
TOTAL PERMIT AREA	27.78	8.47	6.54	123.69	57.96	76.13	156.17	456.74

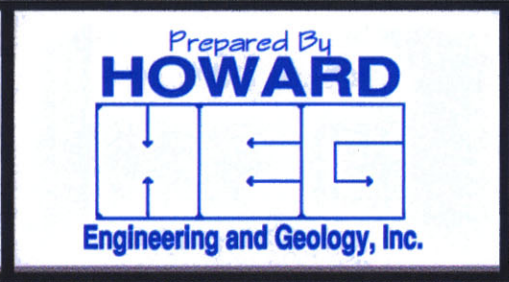
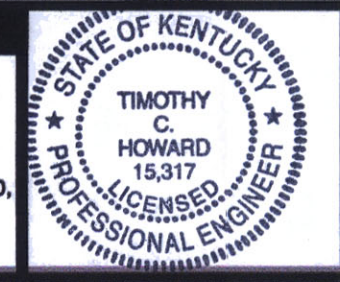
NOTES:
 1-0.55 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #4, 0.55 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #5, 0.55 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #6, 2.08 ACRES OF POND DOUBLE BONDED AS MINING AREA ON INCREMENT #7.

A TOTAL OF 3.73 ACRES IS DOUBLE BONDED BUT IS ONLY COUNTED IN THE SURFACE ACRES ONE TIME FOR A TOTAL OF 446.44 ACRES AS SHOWN IN ITEM 7.2 OF THIS APPLICATION.

INCREMENT #1		INCREMENT #2	
INCREMENT #3		INCREMENT #4	
INCREMENT #5		INCREMENT #6	
INCREMENT #7			

ACTIVE/ABANDONED AREA DISCLAIMER
 The areas marked as "ACTIVE" and/or "ABANDONED" on this map were copied from a map purportedly prepared by a third-party. HEG affirmatively states that it has used its best engineering practices in utilizing the third party map information but, due to physical conditions, CANNOT VERIFY, OR REPRESENT OR WARRANT THE ACCURACY OR COMPLETENESS of the third party map information. HEG DISCLAIMS ALL REPRESENTATIONS AND/OR WARRANTIES whether express, implied or statutory including but not limited to, warranties of title, merchantability and fitness for a particular purpose or use, and it makes no representation as to any property rights and further disclaims all liability for any and all damages that may arise from the use of the third party map information by anyone. HEG specifically disclaims all liability for the consequences of decisions made by anyone on the basis of the third party map information and affirmatively states that it is the user's responsibility to review and understand the limitations of the information.

CERTIFICATION
 I, Timothy C. Howard P.E. No. 15,317
 Date: 11/13/2014
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 360 and KAR Title 405.



Appolo Fuels, Inc.
 Application #807-0365
 Incremental Bonding Map
 SCALE 1" = 500'

ATTACHMENT 8.4.A

INCREMENTAL BOND PLAN

Increment	#4	#5	#6
Mining or Face Up Areas	41.45	22.64	28.88
Roads	---	---	---
Sediment Ponds	0.00 ¹	0.00 ¹	0.00 ¹
Spoil Storage Areas	---	---	---
Waste Disposal Areas	---	---	---
Facility and Processing Areas	---	---	---
Coal Stockpile & Loading Areas	---	---	---
Mine Management Areas	---	---	---
Total Surface Disturbance Area	41.45	22.64	28.88
Underground Areas	---	---	---
Auger Areas	82.24	35.32	47.25
Total Underground/Auger Area	82.24	35.32	47.25
PERMIT AREA	123.69	57.96	76.13

¹ – 0.55 acres of Pond double bonded as Mining Area on Increment #4, 0.55 acres of Pond double bonded as Mining Area on Increment #5, 0.55 acres of Pond double bonded as Mining Area on Increment #6, 2.08 acres of Pond double bonded as Mining Area on Increment #7.

ATTACHMENT 8.4.A

INCREMENTAL BOND PLAN

Increment	#7		Total
Mining or Face Up Areas	57.48		150.45
Roads	---		31.36
Sediment Ponds	0.00 ¹		1.31
Spoil Storage Areas	---		6.54
Waste Disposal Areas	---		---
Facility and Processing Areas	---		---
Coal Stockpile & Loading Areas	---		---
Mine Management Areas	---		3.58
Total Surface Disturbance Area	57.48		193.24
Underground Areas	---		---
Auger Areas	98.69		263.50
Total Underground/Auger Area	98.69		263.50
PERMIT AREA	156.17		456.74

¹ – 0.55 acres of Pond double bonded as Mining Area on Increment #4, 0.55 acres of Pond double bonded as Mining Area on Increment #5, 0.55 acres of Pond double bonded as Mining Area on Increment #6, 2.08 acres of Pond double bonded as Mining Area on Increment #7.

8.5 Complete the following chart which details additional information about each increment.

Increment	#1	#2	#3
Prelaw Mined Acreage	---	---	---
Alternate Topsoil Acreage	---	3.89	6.54
Mulching Variance	---	---	---
Prime Farmland Acreage	---	---	---
Stream Channel Alternate Acreage	---	---	---
Number of Off Bench Ponds	0	1	0

See Attachment 8.5.A

If additional pages are necessary, duplicate this chart and identify as "Item 8.5 continued".

8.6 Provide a narrative describing all acreage overlaps. This includes double bonding and shared facilities (with identification of other permits involved). In addition, all overlaps shall be clearly identified on the map requested in Item 8.3.

See Attachment 8.6.A

8.7 Check the method of acreage fee payment to be used:
 Single Area Incremental

8.8 Permitting processing fee of \$375 is included.

If applicable, indicate amount of acreage fees included:

Number of surface acres 193.24 X \$75 = 14,550.00 acreage fee.

To Be Provided When Application Is TAC'ed

ATTACHMENT 8.5.A

Increment	#4	#5	#6	#7	Totals
Prelaw Mined Acreage	21.50	---	---	---	21.50
Alternate Topsoil Acreage	41.45	22.64	28.88	57.48	160.88
Mulching Variance	---	---	---	---	---
Prime Farmland Acreage	---	---	---	---	---
Stream Channel Alteration Acreage	---	---	---	---	---
Number of Off Bench Ponds	0	0	0	0	0

ATTACHMENT 8.6.A

Permit Overlaps

1. Proposed haul/access Road H will overlap a portion of existing road which is currently permitted by Appolo Fuels, Inc. on their permit #807-0314.
2. Proposed mining area will overlap face-up area, proposed haul/access Road H will overlap a portion of existing road and proposed haul/access road G will overlap an existing road which are currently permitted by Bell County Coal Corporation on their permit #807-5202.
3. Proposed haul/access Road H will overlap a portion of existing road which is currently permitted by Bell County Coal Corporation on their permit #807-5157.

The proposed overlaps will be bonded by this permit application and facsimile RAM #56 statements have been provided in this attachment.

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number 807-0365 overlaps areas already included in 807-0314 held by Appolo Fuels, Inc. Appolo Fuels, Inc. expressly agrees to assume liability, immediately upon issuance of 807-0365, for reclamation of all areas included within the permit area of 807-0314 including any areas previously disturbed by Appolo Fuels, Inc.

Reclamation of areas disturbed prior to issuance of 807-0365 shall proceed according to the following schedule: Backfill and grading plan. Appolo Fuels, Inc. (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. 807-0365 will guarantee reclamation of the entire permit area of 807-0365, whether disturbed in connection with 807-0365 or previously disturbed in connection with 807-0314.

APPLICANT/AUTHORIZED REPRESENTATIVE

DATE

PRINT NAME: _____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC _____
MY COMMISSION EXPIRES _____

SURETY REPRESENTATIVE

DATE

PRINT NAME: _____

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number 807-0365 overlaps areas already included in 807-5157 held by Bell County Coal Corporation. Appolo Fuels, Inc. expressly agrees to assume liability, immediately upon issuance of 807-0365, for reclamation of all areas included within the permit area of 807-5157 including any areas previously disturbed by Bell County Coal Corporation.

Reclamation of areas disturbed prior to issuance of 807-0365 shall proceed according to the following schedule: Backfill and grading plan. Appolo Fuels, Inc. (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. 807-0365 will guarantee reclamation of the entire permit area of 807-0365, whether disturbed in connection with 807-0365 or previously disturbed in connection with 807-5157.

APPLICANT/AUTHORIZED REPRESENTATIVE

DATE

PRINT NAME: _____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC _____
MY COMMISSION EXPIRES _____

SURETY REPRESENTATIVE

DATE

PRINT NAME: _____

ATTACHMENT 8.6

STATEMENT OF LIABILITY FOR OVERLAPPED AREAS
(in accordance with RAM #56)

Appolo Fuels, Inc. acknowledges that its Application Number 807-0365 overlaps areas already included in 807-5202 held by Bell County Coal Corporation. Appolo Fuels, Inc. expressly agrees to assume liability, immediately upon issuance of 807-0365, for reclamation of all areas included within the permit area of 807-5202 including any areas previously disturbed by Bell County Coal Corporation.

Reclamation of areas disturbed prior to issuance of 807-0365 shall proceed according to the following schedule: Backfill and grading plan. Appolo Fuels, Inc. (and the undersigned SURETY, if applicable) expressly agree that the bond filed with Application No. 807-0365 will guarantee reclamation of the entire permit area of 807-0365, whether disturbed in connection with 807-0365 or previously disturbed in connection with 807-5202.

APPLICANT/AUTHORIZED REPRESENTATIVE

DATE

PRINT NAME: _____

SUBSCRIBED AND SWORN BEFORE ME BY _____
THIS _____ DAY OF _____, 2006.

NOTARY PUBLIC _____
MY COMMISSION EXPIRES _____

SURETY REPRESENTATIVE

DATE

PRINT NAME: _____

ATTACHMENT 8.8.A

Acreage Fees

<u>Increment #</u>	<u>Surface Acreage</u>	<u>Acreage Fee</u>
Increment #1	27.78	\$2,100.00
Increment #2	8.47	\$ 675.00
Increment #3	6.54	\$ 525.00
Increment #4	41.45	\$3,150.00
Increment #5	22.64	\$1,725.00
Increment #6	28.88	\$2,175.00
Increment #7	57.48	\$4,350.00

8.9 Have credit acres been applied to the acreage fee amount? [] YES [X] NO.
 If "YES", list below the permit number, permittee name, acreage and amount.
 Attach copies of the bond release forms showing that those acreages were not
 disturbed. Identify attached documents as "Attachment 8.9.A, 8.9.B" etc.
 If additional pages are necessary, identify as "Item 8.9 continued".

PERMIT NUMBER	PERMITTEE NAME	UNDISTURBED ACREAGE	RATE PER ACRE	TOTAL

Total acreage fee credit \$ _____

8.10 If permittee name is different from applicant, submit a letter from the
 permittee granting the credit acres to the applicant.

N/A

8.11 Based upon all surface acres total to be disturbed under the proposed permit,
 provide an estimate of costs of reclamation. Attach detailed supporting
 calculations as "Attachment 8.11.A".

See Attachment 8.11.A.

9. Right of Entry

9.1 For all properties to be permitted by this application, complete the following
 chart for all surface and mineral owners. In the case of surface owners of severed
 estates which overlies underground works, but no surface disturbance is proposed,
 list n/a for type of document, grantor of rights, and date.

OWNER	TYPE OF DOCUMENT	GRANTOR OF RIGHTS	EXECUTION DATE	ACREAGE
<i>Appolo Fuels, Inc.</i>	<i>Lease</i>	<i>WPP LLC</i>	<i>6/01/2001</i>	<i>+2500</i>
<i>Appolo Fuels, Inc.</i>	<i>Lease</i>	<i>Corrigan TLP LLC c/o Molpus Hardwoods Group LLC</i>	<i>3/01/2001</i>	<i>+2500</i>

ATTACHMENT 8.11.A

As part of this application we are providing the following reclamation cost estimations for the areas affected by this application.

A) Removal of all office or shop buildings
0 Shop Building @ \$0,000.00 \$0,000.00

Total \$0,000.00

B) Auger holes will be sealed as part of the backfilling and grading no additional cost will be incurred.
\$0.00

Total \$0.00

C) Backfill and Grading
Since backfilling and grading will be accomplished in a contemporaneous method. We have calculated the cost of backfilling and grading the final pit to be mined and reclaimed.
$$(L)\frac{(500) \times 17,114 \text{ sq. ft.}}{27} = 42,519 \text{ cu. yds.}$$

42,519 cu.yds. X \$0.75 per cu. yd. = \$31,889.00

D) Pond Removal
\$750.00/pond @ 5 ponds = \$3,750.00

E) An alternate material has been requested for this permit consisting of a mixture of all the overburden. No additional cost will be incurred. \$0.00

Total \$0.00

F) Top Soil Distribution
Based on last 5 acres of surface disturbance
Volume of topsoil/acre =
$$(0.5') \times \frac{43,560 \text{ sq. ft.}}{27} = 807 \text{ cu. yds.}$$

5ac. X 807 cu. yds./ac. = 4,035 cu. yds.
4,035 cu. yds. X \$0.80/yd. = \$ 3,228.00

ATTACHMENT 8.11.A

G) Seed and mulch surface disturbances
189.32ac @ \$496/ac = \$93,903.00

*Seed 55# @ \$2/# = \$110.00
Fertilizer 210# @ \$2.50/50# = \$ 11.00
Lime 2T @ \$25/T = \$ 50.00
Mulch 1.5T @ \$150/T = \$225.00
Labor @ \$100/ac = \$100.00
\$496.00

Total \$93,903.00

H) Cost For Monitoring Sediment Structures Until Removal is as follows:
(4) years of quarterly monitoring at \$10.00/inspection for each pond. 5
ponds X \$10.00 = \$50.00 cost per round of inspection. \$50 cost per
round X 16 quarters of inspections = \$800.00

I) Maintenance Cost
(2) days labor and equipment per quarter for 4 years @ 40.00/hr. 16
quarters X 16hrs./quarter X \$40.00 = \$10,240.00

J) Surface and Groundwater Monitoring
(4) years of active bi-monthly monitoring at silt structures, quarterly
monitoring at groundwater points and quarterly monitoring of surface
water monitoring points.

A) Bi-monthly at pond:
5 ponds X 6 samples/year X 4 years = 120 samples

B) Quarterly at Groundwater Monitoring Points:
(3) groundwater points X 4 samples/yr. X 4 years = 48 samples

C) Quarterly at Surface water Points:
2 sites X 4 samples/yr. X 4 years = 32 samples
Total Samples 200 X \$20.00/sample = \$4,000.00

Total Reclamation Cost = \$147,810.00

9.2 Explain the legal rights claimed by the applicant for the proposed permit area:
See Attachment 9.2.A

9.3 Are any rights to enter and mine the area, as claimed by the applicant, subject to any pending litigation? [] YES [X] NO

9.4 Have the private surface and mineral estates been severed for any parcel of land within the proposed permit area? [] YES [X] NO. If "YES", and the applicant proposes to extract coal by surface mining methods, one (1) of the following items shall be provided as part of this application:

- (a) Notarized copy of the letter or a lease document from the surface owner(s) consenting to the use of surface mining methods to extract coal within the proposed permit area; or
- (b) Notarized copy of the document of conveyance which originally severed the private surface and mineral estates and also expressly grants or reserves the right to extract coal by surface mining methods; or
- (c) Notarized copy of a judicial order which expressly grants or reserves the right to extract coal by surface mining methods.

Is the order subject to pending litigation? [] YES [] NO

Documents submitted in response to this requirement shall be identified as "Attachments 9.4.A., 9.4.B.", etc.

9.5 Describe any interest, options or pending bids on interest held or made by the applicant for lands which are contiguous to the proposed permit area. If additional pages are needed, identify as "Item 9.5 continued". **None**

9.6 Is the proposed permit area within or adjacent to any lands where a federal agency owns either the surface or mineral rights? [] YES [X] NO. If "YES", list the agency controlling such lands. Describe the location and boundaries of these lands with respect to the proposed permit area. If additional pages are needed, identify as "Item 9.6 continued".

Agency _____

Address _____ () Telephone Number _____

ATTACHMENT 9.2.A

The applicant, Appolo Fuels, Inc. has a lease from the landowner, CORRIGAN TLP LLC C/O MOLPUS HARDWOODS GROUP LLC and the mineral owner WPP LLC, dated June 1, 2000. CORRIGAN TLP LLC C/O MOLPUS HARDWOODS GROUP LLC is the legal and equitable owner of the surface rights and WPP, LLC is the legal and equitable owner of the mineral rights to all of the property contained in this application for surface mining. Appolo Fuels, Inc. has the right to enter, mine by surface mining methods, construct mine related facilities with the rights to ingress and egress the subject property containing over 2,500 acres in Bell County. These rights are not subject to any pending litigation.

10. Notice of Intention to Mine

10.1 List the name of the newspaper of largest circulation in each county in which the proposed operation will be located.

COUNTY	NEWSPAPER
<i>Bell</i>	<i>Middlesboro Daily News</i>

10.2 Provide on a separate page immediately following this section the language of the "Notice of Intention to Mine" to be advertised in the newspaper(s) listed in Item 10.1 and identify as "Attachment 10.2.A.". In accordance with 405 KAR 8:030, or 8:040, a copy of each of the four newspaper advertisements or an affidavit from the newspaper editor(s) including a copy of the final advertisement shall be submitted to the department not later than 15 days after the date of the final advertisement. NOTE: The cabinet cannot complete the final processing and issuance of a mining permit unless and until all advertising requirements have been properly fulfilled by the applicant. Failure to submit accurate newspaper advertisements in a timely manner will result in the delayed issuance of a permit.
See Attachment 10.2.A.

11. Areas Designated Unsuitable for Mining & Requests for Variances

NOTE: Only those waivers and variances identified in this section will be considered for approval by the cabinet.

11.1 Is any part of the proposed permit area: within lands designated by the state as unsuitable for mining; under study for designation as such; within an area with special conditions as a result of a lands unsuitable study. If entire permit area is not designated unsuitable and not currently under study for such designation, check here **[XX]**. Attach DSMRE clearance letter as "Attachment 11.1.A."

11.2 Indicate if proposed surface mining and reclamation activities will occur on, or are adjacent to: national park system; national or state forest lands; national system of trails; national wilderness preservation system; wild and scenic rivers system, including "study" rivers; state wild rivers established pursuant to KRS 146; national recreation areas; public wildlife management area; and/or places listed in or eligible for listing in the National Register of Historic Places. If not, check here **[XX]**.

ATTACHMENT 10.2.A

**NOTICE OF INTENTION TO MINE
PURSUANT TO APPLICATION NUMBER 807-0365**

- 1) In accordance with KRS 350.055, notice is hereby given that Appolo Fuels, Inc., P.O. Box 1727, Middlesboro, Kentucky, 40965, has applied for a permit for a surface coal mining and reclamation operation affecting 456.74 acres located 0.13 miles northeast of Fonde in Bell County.
- 2) The proposed operation is approximately 0.02 miles northeast from KY 74's junction with KY 535 and located on Back Creek. The latitude is 36°35'44" N. The longitude is 83°52'04" W.
- 3) The proposed amendment is located on the Fork Ridge and Eagan U.S.G.S. 7 1/2 minute quadrangle maps. The operation will use the contour, remining and auger methods of surface mining. The surface area to be disturbed by the amendment is owned by Corrigan TLP LLC C/O Molpus Hardwoods Group LLC. The operation will underlie land owned by WPP LLC.
- 4) The application has been filed for public inspection at the Department for Natural Resources Middlesboro Regional Office, 1804 East Cumberland Avenue; Middlesboro, Kentucky 40965. Written comments, objections, or requests for a permit conference must be filed with the Director, Division of Mining Permits, #2 Hudson Hollow, U.S. 127 South, Frankfort, Kentucky 40601

(NOTE TO PUBLISHER: 4Th and final advertisement to include this additional paragraph)

This is the final advertisement of this application. All comments, objections or request for a permit conference must be received within thirty days of today's date.

APPOLO FUELS, INC.
Application No. 807-0365 NW
June 24, 2008

Application Item 11.1: Lands Unsuitable for Mining

1. Please be advised that mining operations seeking new or modified coverage under the Coal KPDES General Permit must submit a Notice of Intent (NOI-CM) to the Division of Water. Please file the NOI-CM with the Division of Water as soon as possible in order to avoid potential delays in the processing and issuance of your SMCRA/DNR permit. The proposed permit area is not located within a U.S. Army Corps of Engineers project area.
2. As of this date, there are no lands in the proposed permit area designated unsuitable for surface coal mining or under study for such designation, as provided in 405 KAR Chapter 24.
3. The proposed permit area does not fall within an area with special conditions as a result of a lands unsuitable study.
4. The proposed permit area is not located within a U.S. Army Corps of Engineers project area.
5. Based on information available to the Department, there are no federal lands within or adjacent to the proposed permit area.
6. The proposed permit area may include an in-stream discharge and will require a Section 401 WQC from the Commonwealth of Kentucky, and a 404 Permit from the U.S. Army Corp of Engineers. Applications should be submitted as soon as possible to DNR in order to expedite review.

11.3 Indicate if the proposed permit area is within: 500' of known abandoned or active underground mines; 300' of a public park, public building, school, church, community or institutional building; 300' of an occupied dwelling; 100' of the outside right-of-way line of a public road; 100' of a stream; 100' of a cemetery, or prehistoric burial ground. If not, check here .

11.4 For each item checked in items 11.2 and 11.3 above, attach appropriate maps to identify the location and boundaries of the lands or facilities referenced. These attachments shall be identified as "Attachment 11.2.A." and "Attachment 11.3.A." respectively. Any required waiver documentation such as land owner consent or approval of appropriate state or federal agencies shall be attached. These attachments shall be identified as "Attachment 11.4.A., 11.4.B.", etc. Any engineering designs for Item 11.3 shall be submitted in other appropriate sections of this application.
See Attachment 11.4.A.

11.5 Indicate below all waivers and variances to be requested for the proposed operation. The acreage (or facility designation) affected should be provided as requested. Those variances which have been granted in previous applications to this permit should be marked with an [x] while those proposed or expanded as part of this application should be marked with an [*]. The documentation necessary to approve each variance requested as part of this application shall be submitted in the appropriate sections of this application.

- Post mining land use change
- Alternate topsoil material for 160.88 acres
- Permanent pond # _____
- AOC variance: remaining for _____ acres
- AOC variance: steep slope for _____ acres
- AOC variance: mountaintop removal for _____ acres
- Alternate contemporaneous reclamation standards
- Alternate contemporaneous reclamation standards for joint surface and underground operations
- Mulching variance
- Permanent road(s) # Road "A", "B", "C", "D", "E", "F", "G", "H" & "I"
- Culvert spacing variance for roads # Road "A", "B", "C", "D", "E", "F", "G", "H" & "I"
- Grade variance for roads # Road "D"

OTHERS: Prime farmland negative determination Waiver to mine within 50 feet of Clear Fork, Sowder Branch and Back Creek Within 500' of abandoned mine works

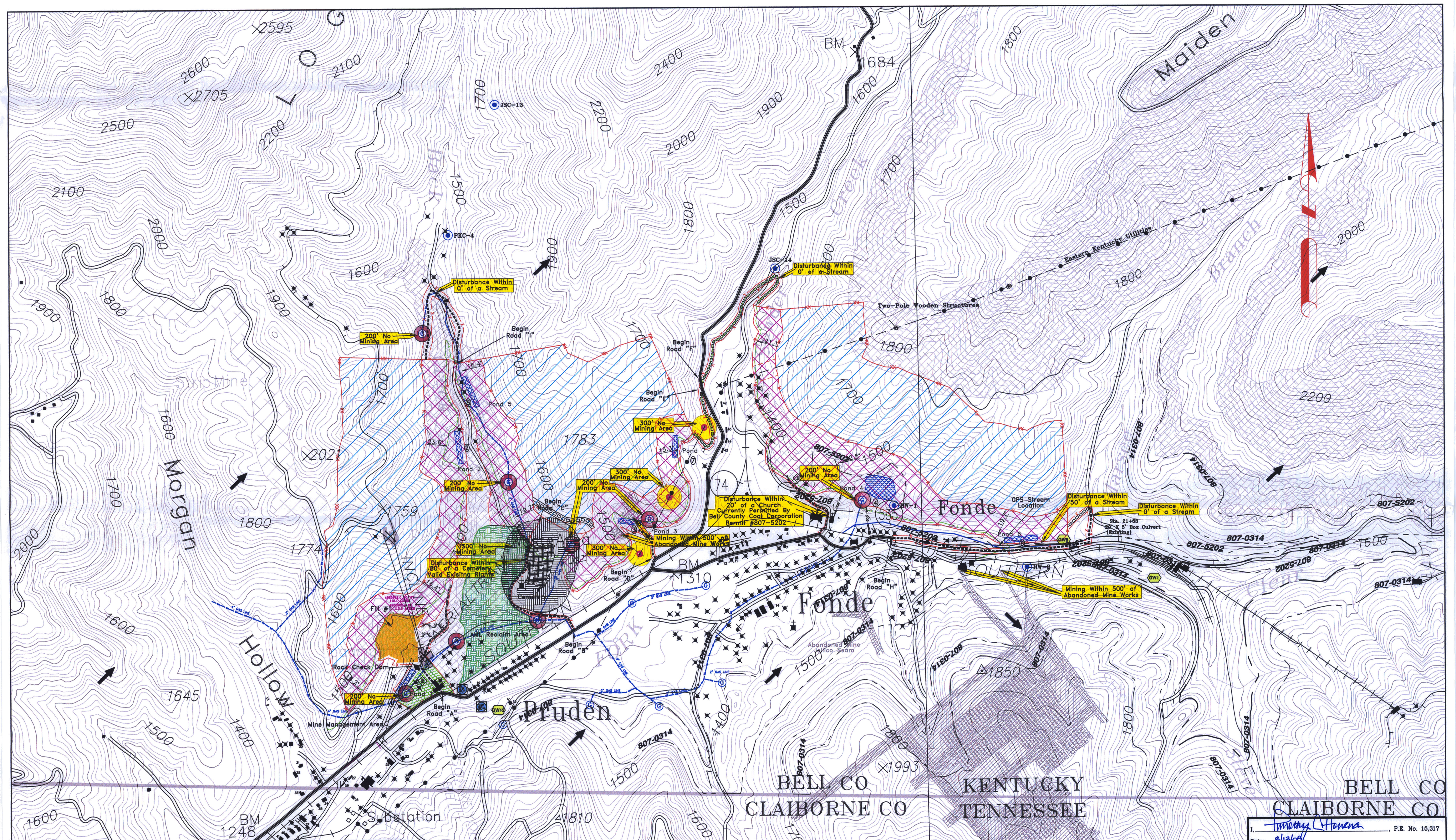
11.6 If valid existing rights are claimed for any part of the proposed permit area identified in 11.1, 11.2, or 11.3, submit the required information as "Attachment 11.6.A".
See Attachment 11.6.A

ATTACHMENT 11.4.A

WAIVERS AND VARIANCES

The following waivers and/or variances have been granted for previous permitting actions and will be requested as part of this application:

- 1) Waiver in order to use Alternate Topsoil Material as a part of the reclamation of the mining area.
- 2) Waiver for contemporaneous reclamation standards.
- 3) A Prime Farmland Negative Determination.
- 4) A waiver in order to make surface disturbances within 100 feet of a stream.
- 5) AOC variance for re-mining.
- 6) Retain roads as permanent structures.
- 7) Waiver for mining within 500' of known abandoned mine works.
- 8) Stream buffer zone.
- 9) Disturbance within 80' of a cemetery (existing road only).
- 10) Disturbance within 20' of a church (existing and currently permitted road only).

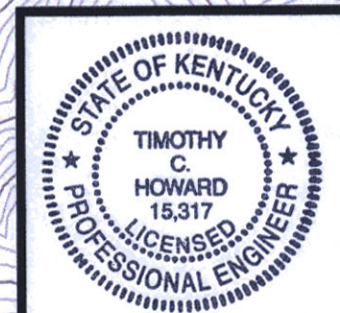


***** NOTES *****

ACTIVE/ABANDONED AREA DISCLAIMER
 The areas marked as "ACTIVE" and/or "ABANDONED" on this map were copied from a map purportedly prepared by a third-party. HEG affirmatively states that it has used its best engineering practice in utilizing the third party map information but, due to physical conditions, CANNOT VERIFY, OR REPRESENT OR WARRANT THE ACCURACY OR COMPLETENESS of the third party map information. HEG DISCLAIMS ALL REPRESENTATIONS AND/OR WARRANTIES, whether express, implied or statutory including but not limited to, warranties of title, merchantability and fitness for a particular purpose or use, and it makes no representation as to any property rights and further disclaims all liability for any and all damages that may arise from the use of the third party map information by anyone. HEG specifically disclaims all liability for the consequences of decisions made by anyone on the basis of the third party map information and affirmatively states that it is the user's responsibility to review and understand the limitations of the information.

All gas wells and gas lines are owned by Daugherty Petroleum, Inc.

I, Timothy C. Honora, P.E. No. 15,317
 Date: 8/13/08
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
 Permit No. 807-0365
 Waiver/Variance Map
 Attachment 11.4
 Scale: 1" = 500' Page No. 1 of 1
 Prepared by:
Howard Engineering & Geology, Inc.

BELL CO
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DAUGHERTY PETROLEUM, INC.
A SUBSIDIARY OF NGAS RESOURCES, INC.

November 10, 2008

Division of Mine Permits
#2 Hudson Hollow
Frankfort, KY 40601

Re: Apollo Fuels, Inc. Mine Permit No. 807-0365, Bell County, KY

Dear Sir/Madam:

Daugherty Petroleum, Inc. has several gas wells with gathering lines that traverse the proposed mining area of Apollo Fuels as above referenced. In the event that any of these lines in the mining area need to be moved for mining operations, Daugherty Petroleum, Inc agrees to move the lines one time to accommodate the mining operation. Should you have any questions regarding this matter, please feel free to contact me at your convenience at (859) 263-3948.

Respectfully,

Rick Bender
Vice President – Land

Cc: Larry Hundley – Apollo Fuels, Inc.
Tim Messer – Howard Engineering & Geology, Inc.



KENTUCKY UTILITIES COMPANY P.O. BOX 87 FOURMILE, KY 40939

November 11, 2008

Mr. Ron Mills
Director of Permits
Natural Resources & Environmental Protection Cabinet
#2 Hudson Hollow Complex
U.S. 127 South
Frankfort, Ky 40601

Re: Application Number 807-0365

Mr. Adams:

Kentucky Utilities Company has no objection to strip mining by Appolo Fuels in the area of our Fonde 12KV line, providing the following conditions are met.

1. No surface shall be removed within 50 feet of any pole on the subject line. At the edge of the undisturbed zone (50 ft), the soil overburden will be graded on a 2:1 slope to the top of the rock. No highwall shall come within 75 feet of a Kentucky Utilities Company distribution structure. Appolo Fuels will accept responsibility for all damage of any nature to our lines as a result of its mining operation, and will make restitution thereof.
2. No surface shall be removed within 25 feet of any Kentucky Utilities Company distribution anchor. At the edge of the undisturbed zone (25 ft), the soil overburden will be graded on a 2:1 slope to the top of the rock.
3. No material will be filled under the lines without written approval from Kentucky Utilities Company.
4. Only controlled blasting will be permitted within 300 ft. of the distribution line. Appolo Fuels assumes liability for all damages incurred by such blasting.
5. During mining and reclamation work, Kentucky Utilities Company must, at all times, retain access to the distribution line. Access to the line will be required for both heavy and light duty rubber tired equipment.
6. Reclamation of the site, specifically around the structures, shall be performed in such a manner to promote positive drainage and re-vegetation. The conditions as allowed in (1&2) above are temporary and will be reclaimed in such a manner to assure soil stability around the structures. Surface slopes around the structure shall not be less than 2:1. Access to line for maintenance equipment shall be maintained.

7. All mining equipment, vehicles, etc., that operate underneath our lines or in close proximity to it shall maintain clearances not less than those required by National Electric Safety Code Standards. Appolo Fuels will assume liability for all damages incurred to our transmission lines as result of the operation of its equipment.

In reference to any structures on this distribution line in the areas of auger mining, as indicated on the submitted permit map, such mining will be conducted as follows:

1. Appolo Fuels agrees that an additional 15 feet beyond the base of the structures on all sides shall be left for the support and protection of such structures, with the structure being in the center of the surface square, and extending to below the depth of the underlying coal seams.
2. From the perimeter of the aforementioned solid block, a 15 degree fracture angle shall be projected to intersect each of the seams, along with an additional length based upon the downhill ground slope in each direction. The area between the unmined solid block and the location of the fracture lines shall be mined only to an extent of 50% for support to the surface.

Appolo Fuels will be responsible for all damaged caused to the electric facilities or any damages caused by the electric facilities as a result of this mining operation.

If you should need additional information or have any questions, please let me know.

Sincerely,



Mike Money
Eng. Design Tech
Kentucky Utilities company

cc: Cecil Jackson
Stewart Spradlin
File

David Howard
Howard Eng. and Geology, Inc.
P.O. Box 271 2550 W. Hwy 27 Suite 1
Harlan, Ky 40831

**Valid Existing Rights for Haul/Access Road "B" located within
300' of Unnamed Cemetery**

This is to certify that the Haul/Access road "B" located within 300 feet of the Unnamed Cemetery as contained in Appolo Fuels, Inc. Permit #807-0365 was in existence and was used for coal haulage and access by mining operations prior to the Surface Mining Control and Reclamation Act of 1977.

Signature: Ronald Robinson

SUBSCRIBED AND SWORN TO BEFORE ME BY Ronald Robinson THE 16th
DAY OF December, 2008.

NOTARY PUBLIC: Shirley C. Codd

STATE IN WHICH COMMISSIONED: Kentucky

MY COMMISSION EXPIRES: 2-13-10

**Valid Existing Rights for Haul/Access Road "G" located within
300' of Fonde Baptist Church**

This is to certify that the Haul/Access road "G" located within 300 feet of the Fonde Baptist Church as contained in Appolo Fuels, Inc. Permit #807-0365 was in existence and was used for coal haulage and access by mining operations prior to the Surface Mining Control and Reclamation Act of 1977.

Signature: Ronald Robinson

SUBSCRIBED AND SWORN TO BEFORE ME BY Ronald Robinson THE 16th
DAY OF December, 2008.

NOTARY PUBLIC: Don H. Collier

STATE IN WHICH COMMISSIONED: Kentucky

MY COMMISSION EXPIRES: 2-13-10

ATTACHMENT 11.6.A

There will be no additional disturbance of Haul/Access road "D" within 300 feet (20') of the Fonde Baptist Church other than grading and surfacing with durable material, the road will be used as it currently exists, within the 300 foot zone.

There will be no additional disturbance of Haul/Access road "B" within 300 feet (80') of the cemetery other than grading and surfacing with durable material, the road will be used as it currently exists, within the 300 foot zone.

12 General Description of Mining and Reclamation Operations

12.1 Indicate the types of facilities to be constructed/utilized:

- Sediment ponds, no. 7
- Fresh water ponds, no. _____
- Levees, _____ ft.
- Water treatment facilities
- Coal haulroads
- Access roads
- Conveyors, _____ ft.
- Rail loading facilities
- Coal refuse fills
- Coal slurry impoundments
- Coal stockpiles
- Excess spoil fills, no. 1
- Hard rock/durable rock fills, no. _____
- Deep mine entries, no. _____
- Coal processing facilities
- Mine management and/or support areas
- Loading facilities
- Other _____

12.2 Provide a narrative description, identified as "Attachment 12.2.A.", of each phase of the proposed surface and underground mining operation. Include the anticipated starting and termination dates of each phase and/or increment, major equipment to be utilized, acreage affected in each phase, and the total acreage affected over the life of this permit. the narrative should describe the location and mitigation plans for any utility lines which will be encountered. If this application is an amendment, describe any changes to the mining plan proposed for the currently permitted area.

See Attachment 12.2.A.

12.3 Describe the plan for maximizing resource recovery. Provide as Attachment 12.3.A.

See Attachment 12.3.A.

13. Cultural or Historic Resources

13.1 List and describe any cultural or historic resources listed, or eligible for listing, on the National Register of Historic Places and any known archaeological sites within or adjacent to the proposed permit area. Provide under separate cover a description of the measures to be taken to mitigate adverse impacts to these sites and a map showing their location.

See Attachment 13.1.A

ATTACHMENT 12.2.A

Plan of Operation

The mining activity proposed in this application will allow for the remining, contour strip and highwall/auger mining of the Jellico coal seam. This operation is located near the community of Fonde in Bell county in Back Creek of Clear Fork on the Fork Ridge and Eagan 7 ½ Minute U.S.G.S. Maps at Latitude 36° 35' 44" and Longitude 83° 52' 04" at the eastern most point of the operation. The proposed application will consist of 193.24 acres of surface disturbance and underlie an additional 263.50 acres for a total proposed permit area of 456.74 acres within the permit boundary.

Access to the mining area will be provided from the existing Roads "A", "B", "C", "D", "E", "F", "G", "H" and "I". Upon issuance of this application, it is anticipated that mining will begin in the general area of Hollow Fill #1. Pond #1 will be constructed prior to any disturbance in its watershed. Upon the completion of Pond #1 clearing and grubbing will begin in the footprint of Hollow fill #1. The initial cuts taken will be stored in Hollow Fill #1.

Sediment control for the mining activities proposed in this application will be provided by the construction of seven (7) on-bench sediment control ponds. These ponds will control the run-off from the proposed mining areas. The on-bench ponds are identified as Ponds #1, #2, #3, #4, #5, #6 and #7. The mining activities proposed in this application include contour strip, remining, auger and/or highwall mining.

As mining advances, on-bench structures will be constructed to control the sediment run-off. It is to be understood that these proposed ponds are on-bench ponds and will not be constructed until coal mining has advanced beyond the designated pond location site. After coal has been removed from the pit floor, the pond will be promptly constructed and an as-built certification for the respective pond submitted to the Regional DNR office. Operationally, all water runoff on the bench areas in advance of the last constructed pond

ATTACHMENT 12.2.A

shall be intercepted and controlled within the mine pit area and from this location either gravity drained or pumped back to the latest constructed on-bench sediment pond. No water from a mine pit shall be released from the mining area without flowing through a sediment pond.

Each sediment pond will provide the primary sediment control for the surface disturbance within the appropriate drainage area. As field conditions justify, secondary sediment control will be utilized in order to control water and sediment runoff. This secondary sediment control can be in the form of sumps, straw bales, and/or silt fence and can be freely installed throughout the entire permitted area without the need of permitting modifications or revisions provided these secondary sediment control devices are located within the permit boundary limits. Periodic inspections of the sediment control devices (both primary and secondary) will ensure that all structures are functioning properly. Access to construct and maintain each sediment pond will be provided directly from within the permit boundary.

In order to minimize the effects on the streams we will use Best Management Practices (BMP's) during construction of the sediment ponds and road construction. BMP's which may be used either singly or in combination any of the following:

- Basins
- Diversion Ditches
- Filter Strips
- Land grading and shaping
- Minimization of surface disturbance
- Mulching
- Placement of rip-rap
- Rapid revegetation, especially along stream banks
- Rock check dams

ATTACHMENT 12.2.A

- Silt fences
- Straw bale barriers
- Stream bank stabilization
- Sumps and Work in periods of no/low flow or dry weather.

Each sediment pond will be constructed at their design location as detailed on the M.R.P. Map. Each pond will be constructed by excavating material from natural ground in order to construct the pond. Once the pond excavation has been completed, the principal spillway will be installed and/or the emergency spillway will be constructed. The spillway will be checked for proper elevation and width. All spillways will be rip-rapped from the inlet side through the outlet side to reduce erosion and to dissipate energy. The rip-rap that will be used to line the spillways will either be obtained from this job site or will be purchased from a local quarry. It is anticipated that there will be adequate amounts of durable rock generated during the surface mining activity.

The mining activities proposed in this application include secondary highwall cuts associated with re-mining and highwall auger mining within the mining area. This is most effective and economical method of mining given the circumstances. Prior to excavating any spoil as a part of the surface mining activity on the coal seam, vegetation will be stripped from the site. All trees and woody material will be windrowed on the outside edge of the bench and will not be placed below the lowest coal seam to be mined or burned. The alternate topsoil which exists throughout the permit area will be segregated as part of the on-going mining operation and will be placed over the backfill area as needed.

It is proposed by this application to request an alternate contemporaneous reclamation variance described as follows: With the rate of mining for the highwall mining machine versus the contour stripping mining rate, it is anticipated that a total distance of 4500 feet and a time of 180 days will be necessary for this operation. This would allow enough room

ATTACHMENT 12.2.A

to operate the different equipment in the various pits on the seam. The additional distance requested does not consist of all open highwall. It will also contain areas of clearing and grubbing and areas where drill benches are created. Therefore, not all of the requested distance will be open highwall and necessitate the storing of spoil material. Also, it is anticipated that the time requirements will be exceeded because the excavations on the coal seam will not be reclaimed within 120 days because of the auger mining activities on the Jellico coal seam. Additional Supplemental Assurance in the amount of Fifty Thousand Dollars (\$50,000.00) for each 1,500 feet of additional highwall beyond the initial 1,500 feet. This will result in a total additional distance of 3,000 feet and One Hundred Thousand Dollars (\$100,000.00) of supplemental assurance. The supplement assurance shall be paid in \$50,000.00 dollar increments prior to the increment disturbance.

Upon completion of all mining activity described in this application, all areas of the permit area will be backfilled with all available spoil material. Complete details and designs on the proposed backfilling and grading of the mine site are provided in Attachment 25.1.A of this application. Details and designs of the sediment pond are provided in Attachment 31.3.A. The mine area will be revegetated with a variety of grasses, legumes and trees to a post-mining land use of Unmanaged Forestland.

The mining will continue until all coal that can be economically removed has been mined from the permit area.

At this time the applicant has elected to install a 300' "No Mining Zone" buffer around the existing cemetery. However in the future an archeological detail survey of the cemetery be performed at which time the "No Mining Zone" buffer will be reduced to the standard 100' buffer.

ATTACHMENT 12.2.A

A 150 foot radius buffer zone has been provided around the Kentucky Utilities power poles. Negotiations are in the process and if and when an agreement can be attained the Kentucky Utilities power line will be relocated and the 150 foot radius buffer zone will be removed.

It is anticipated that the equipment which will be used in the surface operation will include but will not be limited to the following:

- 1) Hydraulic Excavators, 2-3
- 2) Bulldozers, 2-4
- 3) Haulback Trucks, 4-6
- 4) Endloaders, 1-3
- 5) Road Grader, 1-2
- 6) Blasthole Drill, 1-2
- 7) Water Truck, 1-2
- 8) Hydroseeder, 1-2
- 9) Mulcher, 1-2
- 10) Coal Trucks (Tandem), 2-6
- 11) Highwall Mining Machine or Auger, 1

Additionally the existing Back Creek stream has a visible iron content in the water. As no toxic strata has been identified in the geologic sampling the permit engineer feels that the iron contamination is the result of the previous refuse processing and storage that was conducted at the site by past mining operations. Based on local history the area has had active mining and mine processing since the establishment of the community in around 1910. The materials that were stored and

ATTACHMENT 12.2.A

processed in Back Creek have been reclaimed by AML and have an iron discharge that enters Back Creek which could account for the iron contentment noted by the field inspectors.

APPOLO FUELS, INC.
Application No. 807-0365 NW
June 24, 2008

Application Item 12.2: General Description of Mining and Reclamation Operations

The proposed permit may result in impacts on aquatic resources. The Division recommends the use of Best Management Practices (BMPs) to aid in sediment control. BMPs may include, but are not limited to, any of the following, singly or in combination:

- Basins
- Diversion ditches
- Filter strips
- Land grading and reshaping
- Maintenance of a 100' buffer zone along streams
- Minimization of surface disturbance
- Mulching
- Placement of rip-rap
- Rapid revegetation, especially along stream banks
- Rock check dams
- Silt fences
- Straw bale barriers
- Stream bank stabilization
- Sumps
- Work in periods of no or low flow or dry weather

The narrative description of mining operations (Attachment 12.2.A) provided in the comprehensive application should specify what BMPs will be implemented.

The proposed permit may temporarily affect intermittent or perennial stream segment(s) OF AN UNNAMED TRIBUTARY TO CLEAR FORK, IMPACTED BY POND 4. The Division recommends that the applicant include a **stream restoration plan** as an attachment to Application Item 31.6. Restoration should strive to reconstruct the pre-mining conditions of the natural stream. The plan must, at a minimum, describe the following pre-disturbance stream parameters and propose measures to reconstruct them: substrate characterization, channel slope and width, riffle-pool ratios, run-bend ratios, water depth, average flow, and riparian vegetation. Profile, plan, and cross-sectional views of the pre-mining and the restored stream channel must also be included.

The applicant must include a copy of the restoration plan in the comprehensive application and submit **one (1) copy under separate cover** to the following address: Critical Resources Review Section, Division of Mine Permits, #2 Hudson Hollow, Frankfort, Kentucky 40601.

ATTACHMENT 12.3.A

Maximum Resource Recovery Plan

As detailed previously in this application, the mining activity proposed in this application will include surface contour, re-mining and highwall auger mining activity on the Jellico coal seam. We will provide in this attachment the general plan for maximizing the resource recovery proposed in this permit.

The surface mining activity proposed in this application will use the contour, re-mining and highwall auger mining method of mining. The re-mining will provide a secondary excavation on the existing bench on the coal seam. This cut will extend back into the location depicted on the cross sections in Item 25. In any case, the mining activity proposed in this application will remove the maximum volume of overburden and coal as is determined by current economic conditions. Removal from all of the coal via this method will extract perimeter coal which would not be accessible by underground mining methods. The mining activity described above will utilize the best technology currently available to insure complete and efficient removal of the remaining reserves in this seam that were not previously extracted by underground and contour/auger mining during past mining operations.

Appolo Fuels, Inc.
Application No. 807-0365, NW
June 23, 2008

Application Item 13.1: Cultural or Historic Resources

The Division of Mine Permits has received comments from the State Historic Preservation Officer (SHPO) concerning the potential for archaeological resources within the proposed permit area. A copy of the SHPO comments is attached for your information and use.

The Division of Mine Permits has considered these comments and has determined that the proposed operation may potentially impact archaeological resources that are eligible for listing in the National Register of Historic Places. **Therefore, an archaeological survey of the proposed permit area is required.** If you so request, a list of individuals and firms qualified to conduct archaeological investigations in the Commonwealth will be provided to you. Please have the consultant contact the archaeologist at the Division prior to beginning field work.

The applicant must submit five (5) copies of the resulting archaeological survey report to the following address: Critical Resources Review Section, Division of Mine Permits, Department for Natural Resources, No. 2 Hudson Hollow, Frankfort, KY 40601.



ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR NATURAL RESOURCES

Steven L. Beshear
Governor

Division of Mine Permits
2 Hudson Hollow
Frankfort, Kentucky 40601
Phone (502) 564-2320
Fax (502) 564-6764
www.minepermits.ky.gov

Leonard K. Peters
Secretary

Carl E. Campbell
Commissioner

October 16, 2008

T. C. HOWARD
HOWARD ENGINEERING & GEOLOGY, INC.
P.O. BOX 271, 116 EVERSELE ST., SUITE 201
HARLAN, KENTUCKY 40831

RE: Appolo Fuels, Inc.
Application # 807-0365, NW

Dear Mr. Howard:

This office recently received the report, "Phase I Archaeological Survey of the Appolo Fuels, Inc. Fonde-Pruden Coal Permit Area Bell County, Kentucky," prepared by Betty J. McGraw of McGraw, Inc. This report presents the results of a preliminary reconnaissance survey of the above referenced permit application.

During the course of the archaeological investigation, it was determined that no sites eligible for listing in the National Register of Historic Places exist within the proposed permit area. The large cemetery is to be protected by a 300-foot buffer zone as shown on the MRP. Therefore, the investigator has **recommended that no additional work be conducted within this area**. Division of Mine Permits personnel and the State Historic Preservation Officer have reviewed the author's methodology and conclusions, and concur with this recommendation. A copy of the SHPO comments is attached for your information.

The Department now considers the applicant to have successfully completed the permitting requirement to consider and protect significant cultural resources for the subject permit application. If you have any questions concerning this matter, please contact Rose Moore, staff archaeologist, Critical Resources Review Section at (502) 564-2320.

Sincerely,

Rose Moore for T.B.

Thomas Barbour, Acting Supervisor
Critical Resources Review Section/
Small Operator Assistance Program/
401 WQC
Division of Mine Permits

Enclosure

c: Rose Moore (e)
Mark Dennen, SHPO
Betty J. McGraw, 2361 Woodfield Circle, Lexington, KY 40515
Permit File Jerome Eneje (e)



COMMERCE CABINET
KENTUCKY HERITAGE COUNCIL

Steven L. Beshear
Governor

The State Historic Preservation Office
300 Washington Street
Frankfort, Kentucky 40601
Phone (502) 564-7005
Fax (502) 564-5820
www.kentucky.gov

Marcheta Sparrow
Secretary

October 13, 2008

Thomas Barbour, Acting Supervisor
Critical Resources Review Section
DSMRE/Division of Permits
#2 Hudson Hollow Complex
U.S. 127 South
Frankfort, Kentucky 40601

Re: Appolo Fuels, Inc.
Application #807-0365 NW

Dear Mr. Barbour:

2008 OCT 15 P 11:03 AM
RECEIVED
DIVISION OF PERMITS

Thank you for your letter of September 17, 2008 (received September 19, 2008) regarding the above referenced project. I have completed my review of the archaeological report entitled "Phase I Archaeological Survey of the Appolo Fuels, Inc. Fonde-Pruden Coal Permit Area Bell County" by Betty McGraw of McGraw, Inc. The author found no prehistoric or historic archaeological sites in the permit area and recommends no further work. I concur with the author's findings and recommendations. In accordance with 36CFR Part 800.4 (d) of the Advisory Council's revised regulations our finding is that there are No Historic Properties Present within the undertaking's area of potential impact. Therefore, we have no further comments and DSMRE's responsibility for consultation with the Kentucky State Historic Preservation Officer under the Section 106 review process for this individual permit is fulfilled.

A cemetery containing numerous graves is located adjacent to the project area. We recommend a 300 foot buffer zone be maintained between the project area and the cemetery. Protective fencing should be installed to facilitate this protection area.

The author also mentions that roads were investigated by "vehicular examination". While this may have been accepted by previous reviewers, such examination does not meet the *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* requirements. Nor does it conform to the National Park Services standards or to any other professional standards that we are aware. Future investigations using this technique for archaeological fieldwork will not be accepted by this office. Should you have any questions, feel free to contact Lori Stahlgren of my staff at (502) 564-7005.

Sincerely,

Mark Dennen, Acting Executive Director
Kentucky Heritage Council and
State Historic Preservation Officer

LCS/lcs

cc: Dr. George Crothers
Betty McGraw



14. Fish and Wildlife Information

14.1 Has any threatened or endangered species or the critical habitat of such species been identified within or adjacent to the proposed permit area?
 YES NO. If "No", attach DSMRE documentation to verify this determination. Identify as "Attachment 14.1.A".

14.2 If the answer to 14.1 is "YES" or a threatened or endangered species or critical habitat has been reported within or adjacent to the proposed permit area, list the species involved and provide a map identifying its location relative to the proposed permit area. Identify as "Attachment 14.2.A".
See Attachment 14.2.A.

14.3 Will any "wetland" area be impacted by the proposed operation?
 YES NO.

If "YES", provide acreage of wetland, and delineate its boundaries on the ERI Map.
 Acreage of wetland N/A

14.4 Provide as "Attachment 14.4.A", the results of any fish and wildlife survey conducted for the proposed area, or other studies required by DSMRE.
N/A

14.5 Provide a description of the measures which will be taken to avoid or minimize adverse impacts to wetland areas, important fish and wildlife species, the critical habitat of such species, or other species protected by state or federal law. If additional pages are needed, identify as "Item 14.5 continued".
See Attachment 14.5.A

15. Geologic Information

15.1 Provide the information requested below concerning the coal seam(s) to be mined:

<u>USGS Name</u>	<u>Thickness (inches)</u>	<u>% Total Sulfur</u>	<u>% Pyrite Sulfur</u>	<u>Elevation</u>
<u>Jellico</u>	<u>24"-42"</u>	<u><1.00%</u>	<u> </u>	<u>1390'-1410'</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

15.2 Provide a description of the geology within the proposed permit area down to and including the stratum immediately below the lowest coal seam to be mined. The description shall include the structural geology, lithology, thickness and chemical characteristics of the overburden strata which will be removed and strata which may be impacted in areas overlying underground works. Include the results of the baseline geologic sampling program on cabinet approved forms and all appropriate drill logs, stratigraphic columns, cross sections, geochemical lab results and other information on which the description is based. Submit description and related information as "Attachment 15.2.A, 15.2.B", etc.
See Attachment 15.2.A

APPOLO FUELS, INC.
Application No. 807-0365 NW
June 24, 2008

Application Item 14.1: Fish and Wildlife Information

1. The Division's review of the Kentucky State Nature Preserves Commission's Natural Heritage Database indicates that occurrences of state/federal designated threatened or endangered species **have NOT been recorded** within or adjacent to the proposed permit area.

APPOLO FUELS, INC.
Application No. 807-0365 NW
June 24, 2008

Application Item 14.4: Fish and Wildlife Survey

Based upon the Division's environmental review, it has been determined that the proposed mine operation will not adversely impact any of the resources referenced in 405 KAR 8:030/040, Section 20 (a-c). Therefore, surveys for site-specific fish and wildlife resource information **will not be required** in this application.

ATTACHMENT 14.5.A

It is not anticipated that the surface disturbances proposed in this application will adversely affect or impact any wetlands, important fish and wildlife species or other species protected by state or federal law.

ATTACHMENT 15.2.A

Geologic Description

The coal bed to be extracted in this proposed permit is identified on the Eagan and Fork Ridge U.S.G.S. geologic quadrangles as the Jellico seam. The entire interval to be impacted by this operation is within the Breathitt Group of the Pennsylvanian Age. North of Pine Mountain, the Fire Clay, Jellico and Blue Gem coal beds have been extensively mined. All have supported commercial underground mining in the past. Remaining reserves in the Fire Clay bed is probably small. The Jellico and Blue Gem coal beds have been strip mined and have been worked by numerous truck mines and adits (now abandoned) along the lower slopes of hills. Reserves of the Blue Gem and Jellico may exist in beds less than two and one half feet thick. The upper of two Jellico coal beds locally contain a one (1) foot thick shale parting and is overlain by a massive sandstone bed. The lower Jellico coal bed is thin and discontinuous, locally missing in the northwestern part of the quadrangle map where its stratigraphic position is occupied by a massive sandstone underlying the upper Jellico coal bed.

Based on the pre-mining geologic sampling program, the structural geology within the proposed permit area which includes the Jellico seam is predominantly medium gray shales and gray sandstones.

The immediate material above the Jellico seam at sample site locations identified in this application consists of 5.00 feet to 20.00 feet of gray shale.

The floor material for the Jellico coal seam in this proposed permit application is dark gray shale in almost all locations. The geologic information forms on the following pages contain a specific description and thickness for each unit at a minimum of 10 feet above and below the Jellico coal seam.

STRUCTURAL GEOLOGY

Regionally, the proposed area lies in the southwest portion of the Middlesboro Syncline. More locally the strata and coal beds to be impacted by this operation is influenced by the southern limb of the smaller syncline within the Middlesboro Syncline located to the northwest of the proposed permit area giving this strata a dip of less than 1 percent towards N 55° E. No known major faulting or fracturing exists in the permit area.

ATTACHMENT 15.2.A

CHEMICAL CHARACTERISTICS

As can be seen on the subsequent pages, two (2) highwall samples are shown as true and accurate copies of the originals as presented in Bell County Coal Corporation approved permit 807-5202. The results of the geological testing on the two (2) highwall samples has determined that no potentially acidic strata will be impacted by this proposed application.

As part of this application, we are proposing to provide geologic data from the following locations within the permit area. No additional samples will be collected, the two (2) highwall samples are representative of the strata above and below the coal seam to be mined within this proposed permit application.

HW-1	-	Latitude 36°-35'-45" N(4,053,678) Longitude 83°-52'-33" W(242,732)
HW-2	-	Latitude 36°-35'-37" N(4,053,413) Longitude 83°-52'-14" W(243,207)
JSC 13	-	Latitude 36°-35'-35" N(4,055,272) Longitude 83°-53'-32" W(241,314)
JSC 14	-	Latitude 36°-36'-14" N(4,054,595) Longitude 83°-52'-51" W(242,313)
PKC 4	-	Latitude 36°-36'-19" N(4,054,785) Longitude 83°-53'-40" W(241,100)

SYSTEM	SERIES	GROUP, FORMATION, MEMBER, AND BED	LITHOLOGY	THICKNESS OF COAL BED, IN FEET	THICKNESS, IN FEET		
QUATERNARY		Alluvium and colluvium			0-50	Alluvium is composed of silt, clay, sand, and gravel: Silt: Sand, white to light-gray to light-yellowish-brown; co beds or distinctive partings between silt and clay. S plains and interfingering with colluvium along valley b boulders of sandstone, siltstone, coal, quartz, chert, ar of finer alluvium. Colluvium consists of poorly sort sand matrix. Occurs as debris fans (including some below sandstone ledges and escarpments. Although in extent than 1 acre; mapped by interpretation of hun is interfingering and gradational.	
	PENNSYLVANIAN	Lower and Middle Pennsylvanian	Breathitt Formation		?	490+	
				Magoffin Beds of Morse (1931) *	0-1 1/2		
					0-1 1/2		
					0-2		
					0-1	170-225	
					0-1		
				Fire Clay coal bed *	1-2		
					0-11		
				Whitesburg coal zone *	0-1		
				1-2	190-240		
	1-2						
Kendrick Shale of Jillson (1919)	0-1						
Amburgy coal zone *	1-2						
	0-1						
	1-1 1/2	26-35					
	0-2						
	0-2						
Jellico coal zone *	0-3 1/2						
	0-1	90-140					
	?						
Blue Gem coal zone *	1-3 1/2						
	1-3 1/2						
	0-1						
Little Blue Gem coal bed	0-1	135+					

PROPOSED Mining Zone

Siltstone, shale, sandstone, and coal: Siltstone, medium-gr. ments. Shale, medium- to dark-gray, laminated to th Amburgy coal zone is dark olive gray to dark gray, cont light-gray to light-yellowish-brown, medium-grained, wi discordant beds and lenses. A coal zone about 80 fe none of which are extensively mappable, although onr beds locally contains a 1-foot-thick shale parting; in massive sandstone bed. The lower Jellico coal bed i where its stratigraphic position is occupied by a massi or three coal beds in 20 to 30 feet of sandy siltstone; i locally eroded and discontinuous. Within the zone arc

I, Timothy C. Howard, P.E. No. 15,317
 Date: 7/1/08
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
 Permit No. 807-0365
 Geologic Setting Map
 Attachment 15.2
 Scale: None
 Page No. 1 of 1
 Prepared by:
Howard Engineering & Geology, Inc.

ATTACHMENT 15.2.A

The following twelve (12) pages, Geologic Information are true and accurate copies of the originals as presented and approved in Bell County Coal Corporation #807-5202, Original Application.

Notary Public: Deborah A. Coble

State in which commissioned: Kentucky

My commission expires: 2-13-10

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Name Eagan

2. Latitude

3 6 3 5 4 5

3. Longitude

8 3 5 2 3 3

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16)

1 7

5. UTM Easting coordinate

2 4 2 7 3 2

6. UTM Northing coordinate

4 0 5 3 6 7 8

7. Quadrangle Scale

1

1/24,000 = 1; 1/62,500 = 2; 1/125,000 = 3; Other = 4 - Explain

8. State Identification Code Number

2 1

(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form)

0 0 7

10. Coal Company Name Bell County Coal Corporation, Inc.

11. Operator's

same

Last

First

M.I.

12. Permit Number

8 0 7 - 5 2 0 2

13. SOAP Identification Number

14. Hole Number

HW 1

15. Date (month, day, year)

1 2 0 4 0 1

16. Driller's

Bell County Coal

Last

First

M.I.

17. Type of Sample

9

Core = 5; Chip = 6; Auger = 7; Geophysical log = 8; Highwall = 9;

Other = 10 - Explain

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*)

1 4 5 4

F

19. Top of hole determination

T

Barometer = B; Survey = S; Hand Level = H; Topo = T;

Other = O - Explain

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*)

9 3

F

Quadrar
(For
office
use
only)

Name of geologist or engineer responsible for preparing this form

Howard

Last

David

First

W.

M.I.

P.G.#50

Title

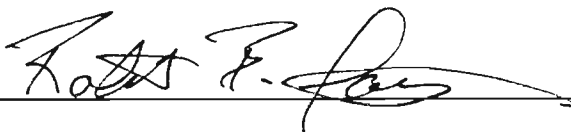
SAMPLE IDENTIFICATION : BELL COUNTY COAL CORPORATION

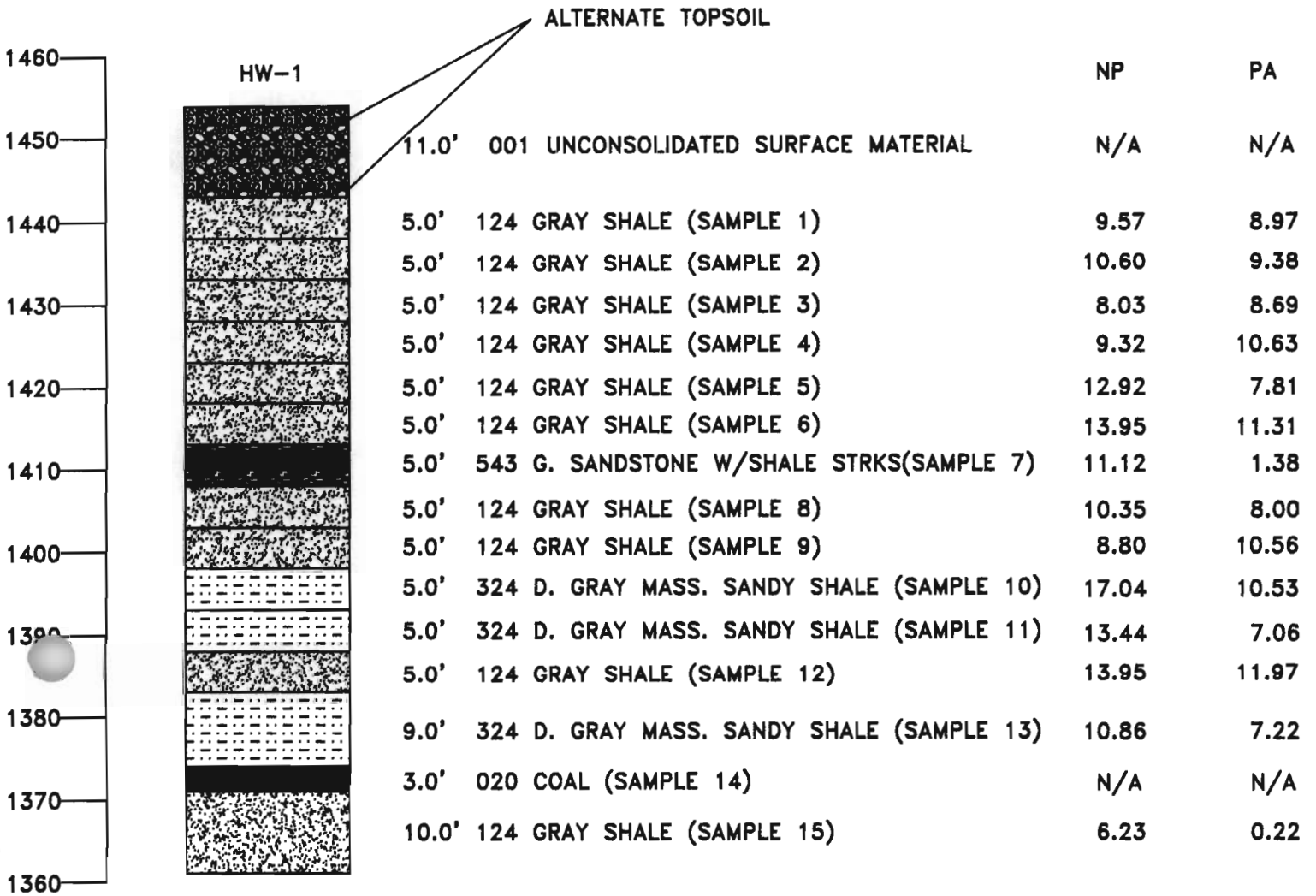


PERMIT NUMBER : 807 - 5202, (HW - 1)

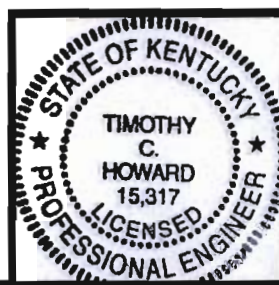
SAMPLED BY : BCCC
SAMPLE DATE : 12/03/2001
REPORT DATE : 12/12/2001

SAMPLE #	FIZZ RATING	PASTE pH	NEUTRALIZATION POTENTIAL	TOTAL SULFUR %	POTENTIAL ACIDITY	CODE		
1	NONE	7.55	9.57	0.287	8.97	124		
2	NONE	7.64	10.60	0.300	9.38	124		
3	NONE	7.00	8.03	0.278	8.69	124		
4	NONE	6.77	9.32	0.340	10.63	124		
5	NONE	7.35	12.92	0.250	7.81	124		
6	NONE	7.23	13.95	0.362	11.31	124		
7	NONE	7.75	11.12	0.044	1.38	543		
8	NONE	7.78	10.35	0.256	8.00	124		
9	NONE	7.56	8.80	0.338	10.56	124		
10	NONE	7.57	17.04	0.337	10.53	324		
11	NONE	7.66	13.44	0.226	7.06	324		
12	NONE	7.75	13.95	0.383	11.97	124		
13	NONE	7.30	10.86	0.231	7.22	324		
14				1.065		020		
15	NONE	7.54	6.23	0.007	0.22	124		

SUBMITTED BY : 



I, Timothy C. Howard, P.E. No. 15,317
 Date: 8/13/03
 hereby certify in accordance with 405 KAR 7:040, Section 10,
 that this document is correct as determined by accepted
 engineering practices and includes all information required
 of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
 Permit No. 807-0365
 Geologic Highwall Sample HW-1
 Attachment 15.2.A
 Scale: 1" = 20' Page No. 1 of 1
 Prepared by
Howard Engineering & Geology, Inc.

GEOLOGICAL INFORMATION FORM

(Please print or type all responses)

1. Quadrangle Fork Ridge

2. Latitude 3 6 3 5 3 7

3. Longitude 8 3 5 2 1 4

4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16) 1 7

5. UTM Easting coordinate 2 4 3 2 0 7

6. UTM Northing coordinate 4 0 5 3 4 1 3

7. Quadrangle Scale 1

1/24,000 = 1; 1/62,500 = 2; 1/125,000 = 3; Other = 4 - Explain

8. State Identification Code Number 2 1

(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)

9. County Code Number (refer to county number list on the last page of this form) 0 0 7

10. Coal Company Bell County Coal Corporation, Inc.

11. Operator's same Last First M.I.

12. Permit Number 8 0 7 - 5 2 0 2

13. SCAP Identification Number

14. Hole Number HW 2

15. Date (month, day, year) 1 2 0 4 0 1

16. Driller's Bell County Coal Corporation Last First M.I.

17. Type of Sample 9

Core = 5; Chip = 6; Auger = 7; Geophysical log = 8; Highwall = 9; Other = 10 - Explain

18. Top of hole elevation (round to nearest unit of measurement and indicate units used*) 1 4 8 7 F

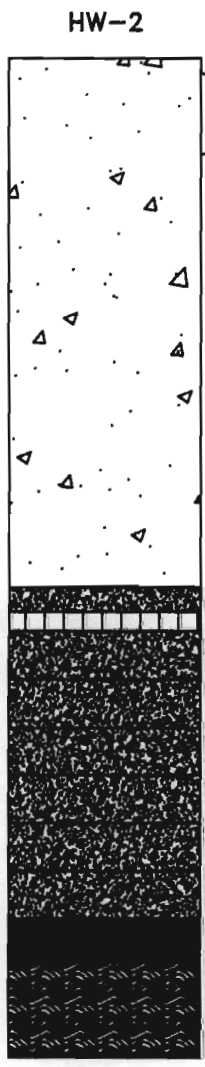
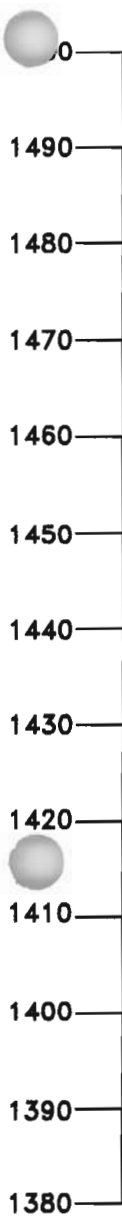
19. Top of hole determination T

Barometer = B; Survey = S; Hand Level = H; Topo = T; Other = O - Explain

20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*) 1 0 4 F

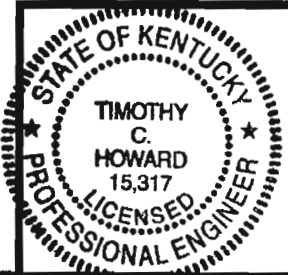
Name of geologist or engineer responsible for preparing this form Howard David W. P.G.#50 Last First M.I. Title

Quadra (For office use only)



Depth	Description	NP	PA
	ALTERNATE TOPSOIL		
55.0'	001 UNCONSOLIDATED SURFACE MATERIAL	N/A	N/A
2.5'	124 GRAY SHALE (SAMPLE 1)	5.89	8.53
2.0'	500 GRAY SANDSTONE (SAMPLE 2)	10.48	6.75
5.0'	124 GRAY SHALE (SAMPLE 3)	8.44	4.63
5.0'	124 GRAY SHALE (SAMPLE 4)	7.92	2.44
5.0'	124 GRAY SHALE (SAMPLE 5)	11.50	9.00
5.0'	124 GRAY SHALE (SAMPLE 6)	13.03	2.06
5.0'	124 GRAY SHALE (SAMPLE 7)	11.24	6.06
5.0'	124 GRAY SHALE (SAMPLE 8)	9.71	4.13
4.5'	020 COAL (SAMPLE 9)	N/A	N/A
10.0'	114 BLACK SHALE (SAMPLE 10)	15.32	6.22

I, Timothy C. Howard, P.E. No. 15,317
 Date: 8/13/68
 hereby certify in accordance with 405 KAR 7:040, Section 10,
 that this document is correct as determined by accepted
 engineering practices and includes all information required
 of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
 Permit No. 807-0365
 Geologic Highwall Sample HW-2
 Attachment 15.2.A
 Scale: 1" = 20' Page No. 1 of 1
 Prepared by:
Howard Engineering & Geology, Inc.



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1010 SOUTH HIGHLAND AVE., SUITE 210-B, LOUKAARD, 1 LINCOLN MI 48138 • TEL: 520-953-9300 FAX: 520-952-8329

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ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A
MIDDLESBORO, KY 40365
TEL: (506) 248-4205
FAX: (506) 248-0044

November 20, 2001

BELL COUNTY COAL CO.
RT. 1 BOX 290
MIDDLESBORO KY 40365

Sample identification by
BELL COUNTY COAL CO.

Kind of sample
reported to us COAL

Sample taken at

sample taken by BELL COUNTY COAL CO.

Date sampled November 16, 2001

Date received November 20, 2001

SAMPLE BROUGHT IN
DRILL HOLE:DH6-01
LOCATION:NORTH SIDE OF STEVE CREEK OFF
CLEAR FORK
SEAM:JYLICO(JZ-3)
INTERVAL:515-37' TO 520.02'
SEAM SECTION:47" COAL
2" BONE
3" ROCK
57" SEAM

Analysis report no. 49-173617

FUSION TEMPERATURE OF ASH, (F) 1.60 FLOAT COMPOSITE
REDUCING

Initial Deformation (IT)	2441
Softening (ST)	2488
Hemispherical (HT)	2506
Fluid (FT)	2530

Grindability Index 55

Respectfully submitted
COMMERCIAL TESTING & ENGINEERING CO.

Middlesboro Laboratory



BELL COUNTY COAL CO.
MIDDLESBORO KY

DRILL HOLE: DHS-01
LOCATION: NORTH SIDE OF STEVE CREEK OFF
CLEAR FORK
SEAM: JELLICO (JE-3)
INTERVAL: 515.27' TO 520.02'
SEAM SECTION: 47" COAL/2" BONE COAL/8" ROCK/57" SEAM
Date sampled November 16, 2001

Lab no. 49-173617

November 20, 2001

FLOAT AND SINK ANALYSIS

SPECIFIC GRAVITY		DRY BASIS				CUMULATIVE RECOVERY (FLOAT)				CUMULATIVE REJECT (SINK)			
Sink	Float	% Wt	% Ash	% Sul	Btu	% Wt	% Ash	% Sul	Btu	% Wt	% Ash	% Sul	Btu
-- X -- = 100.00% of Coal Sample													
	1.50	68.60	6.08	0.82	14285	68.60	6.08	0.82	14285	100.00	25.03	xxxxxx	xxxxxx
1.50	1.60	4.00	25.75	1.12	11040	72.60	7.16	0.84	14106	31.40	66.42	xxxxxx	xxxxxx
1.50	SINK	27.40	72.36	xxxxxx	xxxxxx	100.00	25.03	xxxxxx	xxxxxx	27.40	72.36	xxxxxx	xxxxxx

NOV-15-02 FRI 10:35
NOV-20-2001 TUE 04:41 PM

CTE MIDDLESBORO

606 248 0044

P. 01

P. 03

NOV-15-02 FRI 10:35

NOV-29-2001 THU 02:40 PM

CTE MIDDLESBORO

606 248 0044

P. 04

P. 02/02



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SINCE 1909



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ADDRESS ALL CORRESPONDENCE TO:

RT. 2, BOX 162A
MIDDLESBORO, KY 40265
TEL: (606) 248-4205
FAX: (606) 248-0044

November 29, 2001

BELL COUNTY COAL CO.
RT. 1 BOX 290
MIDDLESBORO KY 40265

Sample identification by
BELL COUNTY COAL CO.

Kind of sample
reported to us COAL

Sample taken at

Sample taken by BELL COUNTY COAL CO.

Date sampled November 27, 2001

Date received November 27, 2001

SAMPLE BROUGHT IN
DRILL HOLE: DH7-01
LOCATION: WEST SIDE OF MARSEE BRANCH OFF
CLEAR FORK
SEAM: JELlico (JE-3)
COLLAR ELEV.: 1957.64
INTERVAL: 239.93' TO 243.18'
SEAM SECTION: 34.5" COAL
39" SEAM

Analysis report no. 49-174216

FUSION TEMPERATURE OF ASH, (F)
REDUCING

1.60 FLOAT COMPOSITE

Initial Deformation (IT)	2700+
Softening (ST)	2700+
Hemispherical (HT)	2700+
Fluid (FT)	2700+

Grindability Index 49

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Middlesboro Laboratory



P. 05
P. 01/02

BELL COUNTY COAL CO.
MIDDLESBORO KY

DRILL HOLE: DH7-01 COLLAR ELEV. 1557.64
LOCATION: WEST SIDE OF MARSEE BRANCH OFF
CLEAR FORK
SEAM: JELLICO(JE-3)
INTERVAL: 239.93' TO 243.18'
SEAM SECTION: 34.5" COAL/39" SEAM
Date sampled November 27, 2001

606 248 0044

Lab no. 49-174216

November 29, 2001

FLOAT AND SINK ANALYSIS

SPECIFIC GRAVITY		DRY BASIS				CUMULATIVE RECOVERY (FLOAT)				CUMULATIVE REJECT (SINK)			
Sink	Float	% Wt	% Ash	% Sul	Btu	% Wt	% Ash	% Sul	Btu	% Wt	% Ash	% Sul	Btu
--	1.50	83.20	3.73	0.80	14587	83.20	3.73	0.80	14587	100.00	13.96	xxxxxx	xxxxx
1.50	1.60	1.90	27.79	1.11	10669	85.10	4.27	0.81	14500	16.80	64.65	xxxxxx	xxxxx
1.60	SINK	14.90	69.35	xxxxxx	xxxxxx	100.00	13.96	xxxxxx	xxxxxx	14.90	69.35	xxxxxx	xxxxxx

-- x -- = 100.00% of Coal Sample

CTE MIDDLESBORO

NOV-15-02 FRI 10:36
NOV-29-2001 THU 02:40 PM

GEOLOGICAL INFORMATION FORM*(Please print or type all responses)*

1. Quadrangle Name Eagan & Forkridge
2. Latitude

3	6	3	5	3	5
---	---	---	---	---	---
3. Longitude

8	3	5	3	3	2
---	---	---	---	---	---
4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16)

1	7
---	---
5. UTM Easting coordinate

2	4	1	3	1	4
---	---	---	---	---	---
6. UTM Northing coordinate

4	0	5	5	2	7	2
---	---	---	---	---	---	---
7. Quadrangle Scale

1

1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____
8. State Identification Code Number

2	1
---	---

(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)
9. County Code Number (refer to county number list on the last page of this form)

0	0	7
---	---	---
10. Coal Company Name Appollo Fuels, Inc.
11. Operator's Name Same (Last), _____ (First) (Int.)
12. Permit Number

8	0	7	-	0	3	6	5
---	---	---	---	---	---	---	---
13. SOAP Identification Number

--	--	--	--	--	--	--	--
14. Hole Number

J	S	C				1	3
---	---	---	--	--	--	---	---
15. Date (month, day, year)

0	7	2	4	9	0
---	---	---	---	---	---
16. Driller's or Sampler's Name Lj Hughes and Sons, Inc. (Last), _____ (First) (Int.)
17. Type of Sample

5

Core = 5; Chip = 6; Auger--7, Geophysical log = 8; Highwall =9; Other= 10 - Explain _____
18. Top of hole elevation (round to nearest unit of measurement and indicate units used*)

1	7	5	0
---	---	---	---

F

19. Top of hole determination

T

(Barometer = B; Survey = S; Hand Level = H; Topo = T; Other = 0 - Explain: _____)
20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*)

		2	5	0
--	--	---	---	---

F

21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)
Howard (Last), David (First), W. (Int.) P.G.#50 (Title)

GEOLOGICAL INFORMATION SHEET

Attachment 15.2.A

(Please Print or Type)

Hole Number J S C 1 3

UTM Zone 1 7

Quadrangle Eagan & Forkridge

Latitude 3 6 3 5 3 5

UTM E Coordinate 2 4 1 3 1 4

Longitude 8 3 5 3 3 2

UTM N Coordinate 4 0 5 5 2 7 2

Driller or Sampler Lj Hughes and Sons, Inc.

(Last)

(First)

(Int.)

Date 0 2 2 7 0 3

Type: Core Chip Highwall Auger G-log Other _____

Unit of Measurement: Feet & Inches, Feet & Tenths, Metric

DRILLER LOG SHEET

(Please Print or Type)

Page 2 of 2 pages.

Rock Codes	Unit Thickness	Cumulative Thickness	NP	PA	Comments
323	55.00'	55.00'			Gray Shale w/Sandstone Streaks
300	5.00'	60.00'			Sandy Shale
543	20.00'	80.00'			Gray Sandstone w/Shale Streaks
124	41.83'	121.83'			Dark Gray Shale
020	0.33'	122.16			Coal
124	0.67'	122.83'			Dark Gray Shale
020	0.17'	123.00'			Coal
123	4.00'	127.00'			Dark Gray Shale w/Coal Streaks
124	13.00'	140.00'			Dark Gray Shale
114	13.00'	153.00'			Black Shale
020	0.33'	153.33'			Coal
543	2.00'	155.33'			Gray Sandstone w/Shale Streaks
020	0.29'	155.62'			Coal
127	2.00'	157.62'			Fire Clay
124	2.38'	160.00'			Dark Gray Shale
300	35.00'	195.00'			Sandy Shale
114	38.58	233.58'			Black Shale
020	1.17'	234.75'			Coal (Jellico Seam)
300	5.25'	240.00'			Sandy Shale
114	+10.00'	250.00'			Black Shale

GEOLOGICAL INFORMATION FORM*(Please print or type all responses)*

1. Quadrangle Name Eagan & Forkridge
2. Latitude

3	6	1	8	1	4
---	---	---	---	---	---
3. Longitude

8	3	5	3	4	0
---	---	---	---	---	---
4. UTM Zone (Eastern Kentucky = 17, Western Kentucky = 16)

1	7
---	---
5. UTM Easting coordinate

2	4	0	0	9	6
---	---	---	---	---	---
6. UTM Northing coordinate

4	0	2	1	3	4	2
---	---	---	---	---	---	---
7. Quadrangle Scale

1

1 / 24,000 = 1, 1 / 62,000 = 2, 1 / 125,000 = 3, Other = 4, Explain _____
8. State Identification Code Number

2	1
---	---

(Use Federal Information Processing Standards Code (FIPS). The FIPS number for Kentucky is 21; additional surrounding states may be found on the last page of this form.)
9. County Code Number (refer to county number list on the last page of this form)

0	0	7
---	---	---
10. Coal Company Name Appolo Fuels, Inc.
11. Operator's Name Same _____, _____
(Last) (First) (Int.)
12. Permit Number

8	0	7	-	0	3	6	5
---	---	---	---	---	---	---	---
13. SOAP Identification Number

--	--	--	--	--	--	--	--
14. Hole Number

P	K	C	4	
---	---	---	---	--
15. Date (month, day, year)

--	--	--	--	--	--
16. Driller's or Sampler's Name Unknown. _____, _____
(Last) (First) (Int.)
17. Type of Sample

5

Core = 5; Chip = 6; Auger--7; Geophysical log = 8; Highwall = 9; Other = 10 - Explain _____
18. Top of hole elevation (round to nearest unit of measurement and indicate units used*)

1	5	6	0
---	---	---	---

F

19. Top of hole determination

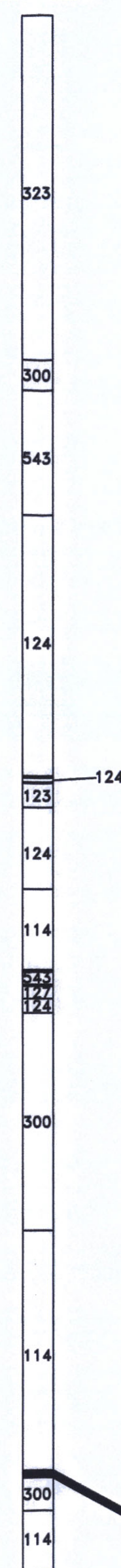
T

(Barometer = B; Survey = S; Hand Level = H; Topo = T; Other = 0 - Explain: _____)
20. Cumulative thickness of the sample (round to nearest unit of measurement and indicate units used*)

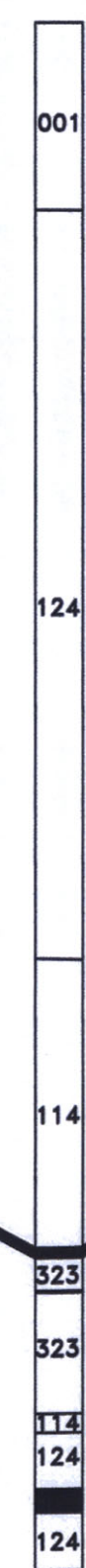
	N	/	A	
--	---	---	---	--
21. Name of geologist or engineer responsible for preparing this form (last, first, middle initial and title)
Howard _____, David _____, W. _____ P.G.#50 _____
(Last) (First) (Int.) (Title)

1600'
1590'
1580'
1570'
1560'
1550'
1540'
1530'
1520'
1510'
1500'
1490'
1480'
1470'
1460'
1450'
1440'
1430'
1420'
1410'
1400'
1390'
1380'
1370'
1360'
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1330'
1320'
1310'
1300'
1290'
1280'
1270'
1260'
1250'

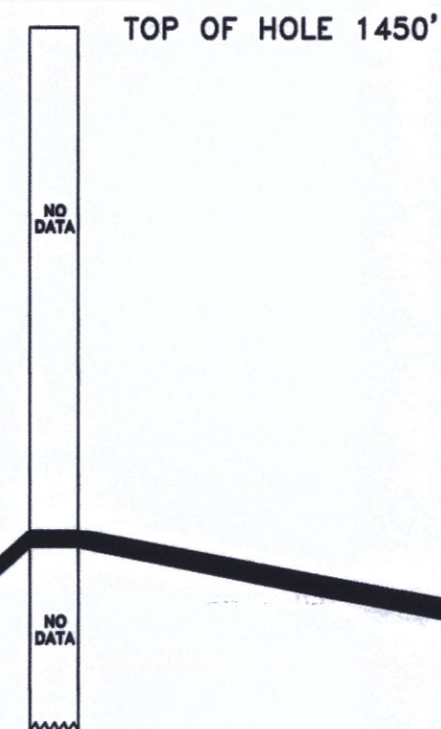
JSC 13



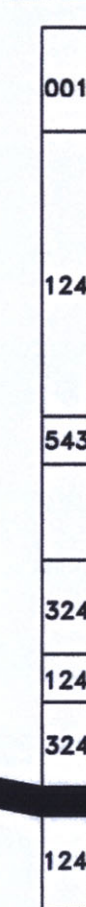
JSC 14



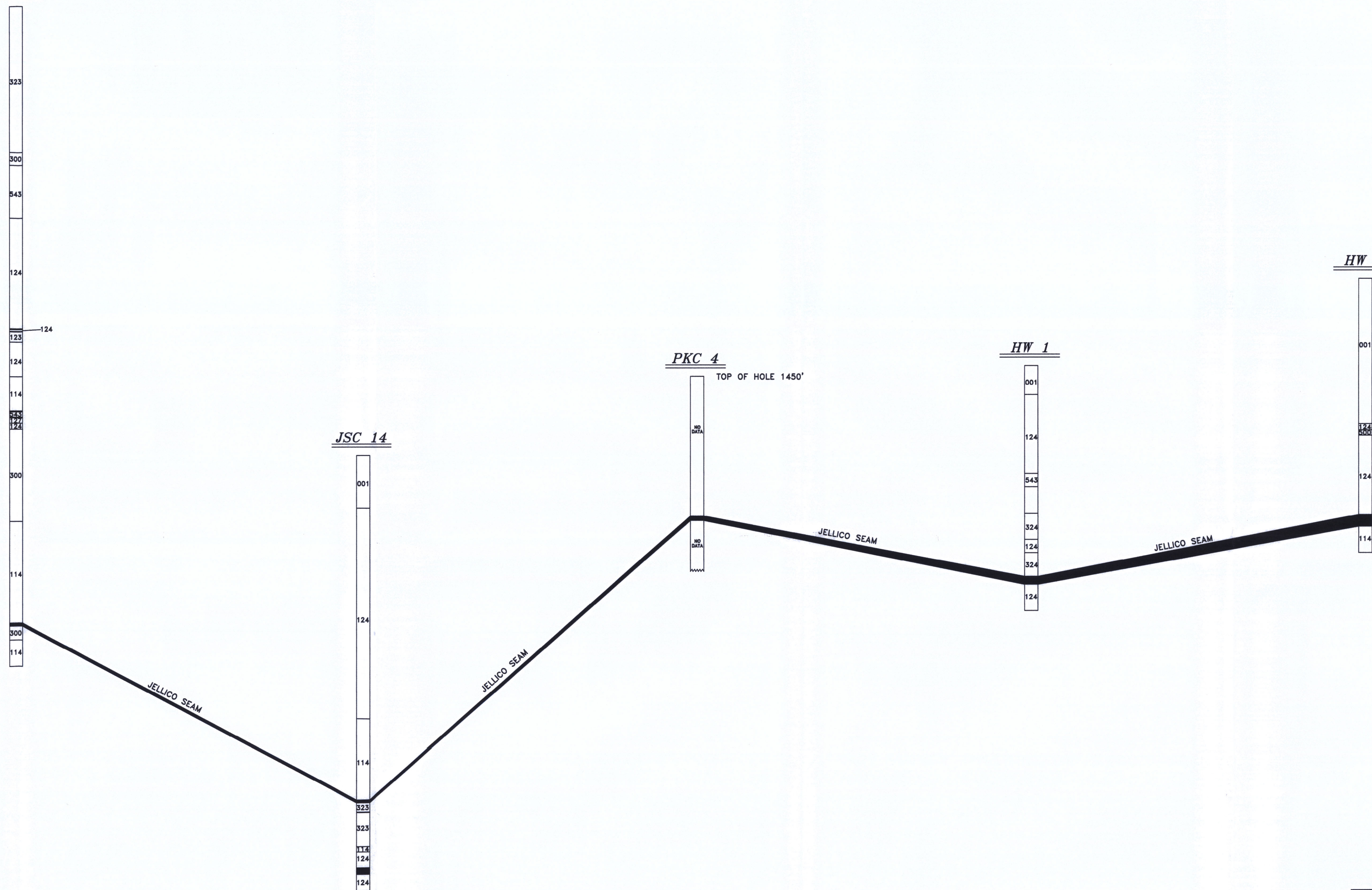
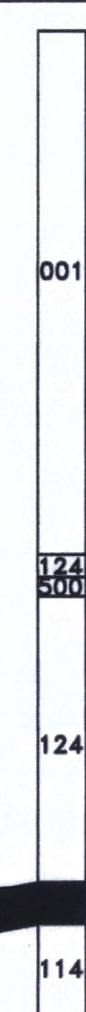
PKC 4



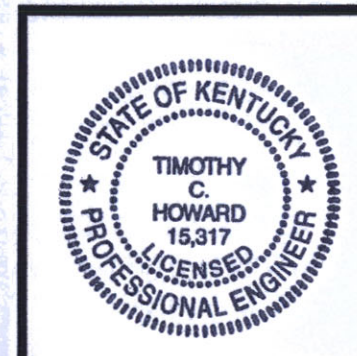
HW 1



HW 2



I, Timothy C. Howard, P.E. No. 15,317
Date: 8/13/06
hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



Apollo Fuels, Inc.
Permit No. 807-0365
Geologic Correlation
Attachment 15.2
Scale: 1" = 20' Page No. 1 of 1
Prepared by
Howard Engineering & Geology, Inc.

- 15.3 Do aquifers exist within the proposed permit area below the lowest coal seam to be mined, which may be adversely affected by the mining operation?
 [] YES [XX] NO. If "YES", describe the structural geology, lithology and thickness of each stratum from the lowest coal seam to be mined to such aquifers. Submit description and related information as "Attachment 15.3.A".
- 15.4 Describe all aquifers located within and adjacent to the proposed permit area which the mining operation may adversely impact. Identify the description as "Attachment 15.4.A". At a minimum, the description shall include, for each aquifer, the following information:

Aquifers within the permit area

Aquifers adjacent to the permit area

- (a) aquifer identification,
- (b) top elevation,
- (c) lithology,
- (d) thickness,
- (e) areal extent,
- (f) number of users, and
- (g) structural geology

- (a) approximate areal extent
- (b) approximate thickness
- (c) aquifer identification, and
- (d) number of users

Correlate this information with the cross-section required in Item 15.2.

See Attachment 15.4.A

- 15.5 Provide, as "Attachment 15.5.A", a volume weighted acid-base account of all overburden strata to be removed by the proposed mining operation.

See Attachment 15.5.A

- 15.6 Describe the sampling program used for collection of premining geologic data within the proposed permit area. The description shall identify; (a) method of sample collection; (b) vertical sampling frequency; (c) parameters tested; (d) laboratory methods used, and (e) name of laboratory. Submit the description as "Attachment 15.6.A".

See Attachment 15.6.A

- 15.7 Provide the following information for each geologic sampling location. If additional pages are needed, identify as "Item 15.7 continued".

Site No.	Type (core, rotary, etc.)	Surface Elevation	Total Depth	Latitude	Longitude
HW 1	Highwall	1454'	93'	36-35-45	83-52-33
HW 2	Highwall	1487'	104'	36-35-37	83-52-14
**JSC 13	Core	1750'	250'	36-35-35	83-53-32
**JSC 14	Core	1420'	165'	36-36-14	83-52-51
**PKC 4	Core	1560'	N/A	36-18-14	83-53-40

NOTE: Show the location of each geologic sampling site on the ERI Map.

** Correlation only

ATTACHMENT 15.4.A

General Ground Water Hydrology Description

The proposed surface disturbance areas proposed in this application are located in the Cumberland Mountain Section of Eastern Kentucky. The Cumberland Mountain Section is comprised of two parallel mountain ridges running generally to the Northeast. Between the ridges lie rugged hilly areas similar in topography to the Kanawha Section, but which has much greater relief. Level areas most suitable for residential or commercial use are essentially limited to the valley bottoms along the stream beds. As a result, nearly all wells are situated in the valley bottoms. Rock strata in this area generally yield sufficient supplies of water for domestic use.

Ground water in the vicinity can generally be obtained from three potential sources. These sources are perched aquifers, the alluvium, or the strata of the Hance formation.

Perched aquifers are essentially created by the extraction of coal seams using underground mining methods which leave voids that fill with water. Perched aquifers exist in the general area due to extensive past mining of most of the coal seams in the vicinity. Although the areal extent of the coal seam voids and addendum perched aquifers are limited because of topography, it is possible for this source of ground water to exist in the area.

The alluvium lies along the streams in the valley bottoms and is identified as a potential aquifer. It has the potential to produce in excess of 500 gpd to drilled wells where granular material is present in sufficient permeated thicknesses. Wells in the general vicinity which penetrate these saturated areas will provide adequate quantities of water for modern domestic uses or a small municipal water supply.

The strata of the Hance Formation are present below the valley bottoms. These formations are capable of providing an ample source of water for modern domestic or a small municipal water supply.

HW-1

SAMPLE #	THICKNESS	AREA (sq.ft.)	N.P.	AREA X N.P.	P.A.	AREA X P.A.
1	5.00'	5.00'	9.57	47.85	8.97	44.85
2	5.00'	5.00'	10.60	53.00	9.38	46.90
3	5.00'	5.00'	8.03	40.15	8.69	43.45
4	5.00'	5.00'	9.32	46.60	10.63	53.15
5	5.00'	5.00'	12.92	64.60	7.81	39.05
6	5.00'	5.00'	13.95	69.75	11.31	56.55
7	5.00'	5.00'	11.12	55.60	1.38	6.90
8	5.00'	5.00'	10.35	51.75	8.00	40.00
9	5.00'	5.00'	8.80	44.00	10.56	52.80
10	5.00'	5.00'	17.04	85.20	10.53	52.65
11	5.00'	5.00'	13.44	67.20	7.06	35.30
12	5.00'	5.00'	13.95	69.75	11.97	59.85
13	9.00'	9.00'	10.86	97.74	7.22	64.98
14	COAL +	-	-	-	-	-
15	10.00'	10.00'	6.23	62.30	0.22	2.20
		79.00'		855.49		598.63

+ COAL REMOVED

VOLUME WEIGHTED N.P. 855.49
VOLUME WEIGHTED P.A. 598.63

N.P. : P.A. = 1.43 : 1

HW-2

SAMPLE #	THICKNESS	AREA (sq.ft.)	N.P.	AREA X N.P.	P.A.	AREA X P.A.
1	2.50'	2.50'	5.89	14.73	8.53	21.33
2	2.0'	2.0'	10.48	20.96	6.75	13.50
3	5.00'	5.00'	8.44	42.20	4.63	23.15
4	5.00'	5.00'	7.92	39.60	2.44	12.20
5	5.00'	5.00'	11.50	57.50	9.00	45.00
6	5.00'	5.00'	13.03	65.15	2.06	10.30
7	5.00'	5.00'	11.24	56.20	6.06	30.30
8	5.00'	5.00'	9.71	48.55	4.13	20.65
9	COAL +	-	-	-	-	-
10	10.0'	10.0'	15.32	153.2	6.22	62.20
		44.50'		498.09		238.63

+ COAL REMOVED

VOLUME WEIGHTED N.P. 498.09
VOLUME WEIGHTED P.A. 238.63
N.P. : P.A. = 2.09 : 1



I, Timothy C. Howard, P.E. No. 15,317
 Date: 7/1/08
 hereby certify in accordance with 405 KAR 7:040, Section 10,
 that this document is correct as determined by accepted
 engineering practices and includes all information required
 of it by Chapter 350 and KAR Title 405.

BELL COUNTY COAL CORPORATION

Permit No. 807-5202
 ATTACHMENT 15.5.A
 ACID BASE ACCOUNTING

Scale: NONE | Page No. 1 of 1

Prepared by
 Howard Engineering & Geology, Inc.

ATTACHMENT 15.6.A

No geologic samples are being collected for this proposed permit application. Two (2) Highwall samples have been collected in the vicinity of the proposed mining which will represent the same coal seam to be mined (Jellico Seam). The two (2) highwall samples have had laboratory testing conducted and meets the department standards. The results of the testing for the two (2) highwalls is included with Attachment 15.2.A of this application. Should additional testing be required, the following sampling guidelines will be used for the collection of the samples.

The vertical sampling frequency listed in the hydrology and geology guidelines were followed for the sample collection from the sites sampled. Each strata greater than 0.5 feet in thickness was sampled. Strata with thickness between 1 and 5 feet were sampled at one representative location, within the strata. Strata which ranged from 5 to 10 feet in thickness were sampled twice within the lithologic unit and a composite sample was formed. Strata greater than 10 feet in thickness were sampled at 5 foot intervals and then composited into one sample.

The samples were analyzed for maximum potential acidity using the peroxide oxidation total sulfur method or induction furnace, and the neutralization potential was determined using the hydrochloric acid method. The instructions listed in the EPA publication "Field & Laboratory Methods Applicable to Overburdens and Minesoils (EPA-600/2-78-054) were followed during the laboratory analysis at Appalachian Field Services, P.O. Box 373, Baxter, Kentucky, 40806, Phone (606)-573-0521.

The following parameters will be tested using the method listed:

<u>PARAMETER</u>	<u>METHOD</u>
Ph	#3.2.2
Neutralization Potential	#3.2.3
Total Sulfur	#3.2.4
Maximum Potential	#3.2.4**

EPA Publication #EPA-600/2-78-054*

"Field and Laboratory Methods Applicable to Overburdens and Minesoil"

**Determined stoichiometrically from % Total Sulfur Determination

16. Ground Water

- 16.1 Provide the results of the ground water inventory conducted for the proposed permit and adjacent areas. The inventory shall identify wells, springs, underground mines, or other similar ground water supply facilities which are currently being used, have been used in the past, or have a potential to be used. For each supply source, describe the location, ownership, type of use and where possible other relevant information such as the depths and diameters of wells, approximate rate of usage, pumpage or discharge. Provide results as "Attachment 16.1.A".
See Attachment 16.1.A.
- 16.2 Describe the premining ground water monitoring program used to determine the seasonal variations in ground water quality and quantity for all aquifers and water transmitting zones. At a minimum, six months of data shall be collected. The description shall identify the location and construction specifications of each monitoring point used, parameters tested, and laboratory methods used. Submit the description as "Attachment 16.2.A".
See Attachment 16.2.A.
- 16.3 On approved cabinet forms submit the results of the premining ground water monitoring program. Original or notarized copies of all laboratory analyses shall be provided. Submit this information as "Attachment 16.3.A".
See Attachment 16.3.A.

17. Surface Water

17.1 Major Watershed(s) Affected:

- | | |
|--|---|
| <input type="checkbox"/> Big Sandy River (BS) | <input type="checkbox"/> Mississippi River (MS) |
| <input checked="" type="checkbox"/> Cumberland River, Upper (CU) | <input type="checkbox"/> Ohio River (OH) |
| <input type="checkbox"/> Cumberland River, Lower (CL) | <input type="checkbox"/> Salt River (ST) |
| <input type="checkbox"/> Green River (GR) | <input type="checkbox"/> Tennessee River (TN) |
| <input type="checkbox"/> Kentucky River (KY) | <input type="checkbox"/> Tradewater River (TW) |
| <input type="checkbox"/> Licking River (LC) | <input type="checkbox"/> Tygarts Creek (TG) |
| <input type="checkbox"/> Little Sandy River (LS) | |

- 17.2 Identify on the environmental resources map and provide a narrative description of the immediate watershed(s) receiving discharge from the proposed permit area. Describe any existing facilities or conditions within the watershed(s) (e.g. existing mining operations, abandoned surface or underground mines, logging operations, oil or gas exploration sites or wells, etc.) which may contribute to surface water pollution. Provide the description as "Attachment 17.2.A". On the ERI map, indicate the location of any existing discharges resulting from such facilities or activities.
See Attachment 17.2.A.
- 17.3 Provide as "Attachment 17.3.A", the results of the surface water user inventory for the proposed permit and adjacent areas. This inventory shall identify the name of the surface water boundary being used as a water supply source, the location, drainage area, ownership, type of usage, and where possible, other relevant information such as the rate of withdrawal and seasonal variation.
See Attachment 17.3.A.

ATTACHMENT 16.1.A

GROUND WATER USER INVENTORY

A ground water users inventory has been conducted and it was determined that there are no ground water users within ½ mile of the proposed permit area. All users within one half ½ mile are on a municipal water supply

ATTACHMENT 16.2.A

The pre-mining ground water monitoring program for the purpose of collecting background data will be utilized from ground water points GW1, GW-5 and GW-12. The locations of these sites are detailed on the MRP/ERI Map included in this application. The ground water monitoring sites are described as follows:

GW1	Latitude 36° 35' 35" N (4,053,482) Longitude 83° 51' 50" W (243,878)
GW5	Latitude 36° 35' 40" N (4,053,520) Longitude 83° 52' 09" W (243,420)
GW12	Latitude 36° 35' 20" N (4,053,172) Longitude 83° 53' 33" W (241,233)

These sites were chosen for the following reasons:

- 1) They are located downstream of the proposed disturbances
- 2) There is a sustained flow at these sites.
- 3) Samples collected at these sites will accurately reflect the conditions of the watersheds affected by the proposed disturbance.
- 4) These sites are being used for ground water monitoring and there is a history of the water quality and quantity at this site.

Samples taken at these sites will be analyzed for the following parameters using the methods listed:

<u>PARAMETER</u>	<u>METHOD</u>
Flow Rate	Flow Estimation Meter
Ph	SM #423*
Acidity	SM #402*
Alkalinity	SM #403*
Total Iron	SM #303A*
Total Manganese	SM #303A*
Sulfate	SM #426C*
Total Suspended Solids	SM #209C*
Specific Conductance	SM #205*

Since these sites are currently being monitored on a quarterly basis as part of ongoing operations, background data collection for this site will consist of the latest six (6) samples that have been collected on a quarterly basis.

WA R QUALITY DATA ENTRY FORMS: Part 1

Type of Report:
 Premining
 During Mining/Reclamation
 Other

STATION INFORMATION

PERMIT #: 807-0365 STATION #: GW1 SOAP PERMITTEE #: N/A

*COUNTY #: 007 BASIN #: 02 QUAD NAME: Fork Ridge

STATION TYPE (check): [01] Spring [XX] Well [] Old Mine
[02] Stream [05] Sediment Pond / Influent Works Portal
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY

DEPTH (ft): 55' CASING DIAMETER (in): 6" AQUIFER DESCRIPTION: Sandstone Unit
TOP OF AQUIFER (MSL): 1459' AQUIFER THICKNESS (ft): 50' TOP OF WELL ELEV. (MSL): 1470'

WATERSHED DESCRIPTION: Steep Slopes/Previously Mines DRAINAGE AREA (ac.): _____

LATITUDE (DMS): 36-36-35 LONGITUDE (DMS): 83-51-50

UTM ZONE: 17 16 West of 84° Longitude UTM EASTING: 243,878 UTM NORTHING: 4,053,482
17 East of 84° Latitude

LOCAL STREAM NAME: Clear Fork

COAL COMPANY NAME: Apollo Fuels, Inc.

COLLECTING FIRM NAME: Technical Water Laboratories, Inc., PO Box 309, Bledsoe, KY 40810

ANALYZING FIRM NAME: Technical Water Laboratories, Inc., PO Box 309, Bledsoe, KY 40810

COMMENTS: _____

PERMIT # 807-0365 STATION # GW1

SAMPLE TA

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	06/13/06	15		440	8.20	0	96			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	185		0.10		0.10		20			

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	08/09/06	16		900	7.60	0	197			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	345		0.10		0.10		30			

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	10/23/06	10		300	7.30	0	238			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	98		0.10		0.10		10			

COMMENT:

PERMIT # 807-0365 STATION # GW1

SAMPLE TA

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/18/07	14		320	6.90	0	137			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	29		0.10		0.10		5			

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	08/06/07	17		500	7.70	0	204			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	327		0.10		0.10		5			

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	12/26/07	14		750	8.0	0	121			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	263		0.10		0.10		25			

COMMENT:



Cumberland Valley Engineering, Inc.

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Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
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BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00465	Lab NUMBER: 88610
PERMIT NUMBER: 807-5025-GW-1	WELL
SAMPLE DATE: 6/13/2006	
SAMPLE TIME: 17:00	
COLLECTED BY: P. TAYLOR	

REPORT OF WATER ANALYSIS

DEPTH TO WATER	20	feet
pH	8.2	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	96.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	440.000	µMHOS/CM
SULFATES	185.000	mg/L SO ₄
TEMPERATURE	15.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins



Cumberland Valley Engineering, Inc.

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BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00465	Lab NUMBER: 89295
PERMIT NUMBER: 807-5025-GW-1	WELL
SAMPLE DATE: 8/9/2006	
SAMPLE TIME: 11:10	
COLLECTED BY: P. TAYLOR	

REPORT OF WATER ANALYSIS

DEPTH TO WATER	30	feet
pH	7.6	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	197.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	900.000	µMHOS/CM
SULFATES	345.000	mg/L SO ₄
TEMPERATURE	16.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Jerru Adkins



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BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00465	Lab NUMBER: 90242
PERMIT NUMBER: 807-5025-GW-1	WELL
SAMPLE DATE: 10/23/2006	
SAMPLE TIME: 17:20	
COLLECTED BY: K. CLARK	

REPORT OF WATER ANALYSIS

DEPTH TO WATER	10	feet
pH	7.3	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	238.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	300.000	µMHOS/CM
SULFATES	98.000	mg/L S04
TEMPERATURE	10.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins



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BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00465	Lab NUMBER: 92447
PERMIT NUMBER: 807-5025-GW-1	WELL
SAMPLE DATE: 4/18/2007	
SAMPLE TIME: 04:08	
COLLECTED BY: K. CLARK	

REPORT OF WATER ANALYSIS

DEPTH TO WATER	5	feet
pH	6.9	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	137.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	320.000	µMHOS/CM
SULFATES	29.000	mg/L S04
TEMPERATURE	14.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Jenni Adkins



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BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00465	Lab NUMBER: 93874
PERMIT NUMBER: 807-5025-GW-1	WELL
SAMPLE DATE: 8/6/2007	
SAMPLE TIME: 15:30	
COLLECTED BY: P. TAYLOR	

REPORT OF WATER ANALYSIS

DEPTH TO WATER	5	feet
pH	7.7	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	204.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	500.000	µMHOS/CM
SULFATES	327.000	mg/L S04
TEMPERATURE	17.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Jerry Adkins



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Fax (606) 573-4735

BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 00465	Lab NUMBER: 95511
PERMIT NUMBER: 807-5025-GW-1	WELL
SAMPLE DATE: 12/26/2007	
SAMPLE TIME: 14:30	
COLLECTED BY: P. TAYLOR	

REPORT OF WATER ANALYSIS

DEPTH TO WATER	25	feet
pH	8.0	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	121.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	750.000	µMHOS/CM
SULFATES	263.000	mg/L S ₀₄
TEMPERATURE	14.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Jerri Adkins

WA R QUALITY DATA ENTRY FORMS: Part 1

Type of Report:
 Premining
 During Mining/Reclamation
 Other

STATION INFORMATION

PERMIT #: 807-0365 STATION #: GW5 SOAP PERMITTEE #: N/A

*COUNTY #: 007 BASIN #: 02 QUAD NAME: Fork Ridge & Middlesboro South

STATION TYPE (check): [01] Spring [XX] Well [] Old Mine
[02] Stream [05] Sediment Pond / Influent Works Portal
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY

DEPTH (ft): _____ CASING DIAMETER (in): 6" AQUIFER DESCRIPTION: _____
TOP OF AQUIFER (MSL): _____ AQUIFER THICKNESS (ft): _____ TOP OF WELL ELEV. (MSL): _____

WATERSHED DESCRIPTION: Steep Slopes/Previously Mines DRAINAGE AREA (ac.): _____

LATITUDE (DMS): 36-35-40 LONGITUDE (DMS): 83-52-09

UTM ZONE: 17 **16 West of 84° Longitude** UTM EASTING: 243,420 UTM NORTHING: 4,053,520
17 East of 84° Latitude

LOCAL STREAM NAME: Clear Fork

COAL COMPANY NAME: Apollo Fuels, Inc.

COLLECTING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

ANALYZING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

COMMENTS: _____

PERMIT # 807-0365 STATION # GW5

SAMPLE A

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	05/15/06	14		500	7.20	0	17			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	138		0.10		0.10		15			

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	00/00/00	00		000	0000	0	000			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	000		0.00		0.00		00			

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	00/00/00	00		000	000	0	000			

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	00		0.00		0.00		00			

COMMENT: _____



Cumberland Valley Engineering, Inc.

P.O. Box 1710, 107 North Cumberland Avenue
Harlan, Kentucky 40831
Office (606) 573-6836 C Laboratory (606) 573-6836
Fax (606) 573-4735

BELL COUNTY COAL CORPORATION
ROUTE 1, BOX 290
MIDDLESBORO, KY 40965

SAMPLE ID NUMBER: 01452
PERMIT NUMBER: 807-5025-GW-5
SAMPLE DATE: 5/15/2008
SAMPLE TIME: 10:42
COLLECTED BY: K. CLARK

Lab NUMBER: 97409
WELL

REPORT OF WATER ANALYSIS

DEPTH TO WATER	15	feet
pH	7.2	std units
TOTAL ACIDITY	0	mg/L as CaCO ₃
TOTAL ALKALINITY	17.000	mg/L as CaCO ₃
DISSOLVED IRON	0.100	mg/L Fe
DISSOLVED MANGANESE	0.100	mg/L Mn
SPECIFIC CONDUCTANCE	500.000	µMHOS/CM
SULFATES	138.000	mg/L S ₀₄
TEMPERATURE	14.000	Deg. C.

I CERTIFY THE ABOVE RESULTS WERE OBTAINED BY USING ACCEPTED ANALYTICAL PROCEDURES AS PRESCRIBED IN STANDARD METHODS AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE BELIEF

By: Terri Adkins

ATTACHMENT 16.3.A

The following five (5) pages, "Station Information and Sample Data Entry Forms" are true and accurate copies of the originals as presented and approved in Appolo Fuels, Inc. #807-5025, Amendment #3.

Notary Public: Wendy R. Colind

State in which commissioned: Kentucky

My commission expires: 2-13-10

WATER QUALITY DATA ENTRY FORMS: Part 1

Type of Report:
[X] Premining
[] During Mining/Reclamation
[] Other

STATION INFORMATION

PERMIT #: 807-0232 STATION #: GZ/5 SOAP PERMITTEE #: N/A
*COUNTY #: 007 *BASIN #: 02 QUAD NAME: Fork Ridge
STATION TYPE (check): [01] Spring [X] Well
[02] Stream [05] Sediment Pond/Influent
[03] Lake [06] Sediment Pond/Discharge

FOR WELLS ONLY

DEPTH (ft): 60' CASING DIAMETER (in): 6.0 AQUIFER DESCRIPTION: Colluvium - Clear Fork
TOP OF AQUIFER (MSL): 1420' AQUIFER THICKNESS (ft): +20' TOP OF WELL ELEVATION (MSL): 1423'

WATERSHED DESCRIPTION: Clear Fork Drainage- Past Logging and Mining DRAINAGE AREA (acres): N/A

LATITUDE (DMS): 36°35'40" LONGITUDE (DMS): 83°52'09"

UTM ZONE: 17 16 West of 84° Longitude UTM EASTING: 243420 UTM NORTHING: 4053520
17 East of 84° Longitude

LOCAL STREAM NAME: Clear Fork

LOCAL COMPANY NAME: Strata Mining, Inc.

COLLECTING FIRM NAME: Purity Laboratories

ANALYZING FIRM NAME: Purity Laboratories

COMMENTS: Water analysis originally collected for Royal Gem Coal Company Permit No. 807-0157
Strata Mining, Inc. and Royal Gem Coal Company will share the same well for water monitoring.

Refer to Coding Instructions for list of codes.

SAMPLE DATA

PERMIT # 807-0232 STATION # G2

Sample No.
[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	2/18/88	15°C		290	5.96	38	9			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	124		1.21		0.68		6.5"			

COMMENT:

14-113

Sample No.
[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	4/19/88	16°C		310	6.03	29	33			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	116		1.07		0.71		7'			

COMMENT:

Sample No.
[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	7/10/88	17°C		280	6.09	12	20			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	109		1.10		0.60		7'			

SAMPLE DATA

PERMIT # 807-0232 STATION # G2

Sample No.
[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	10/15/88	16°C		260	5.87	18	35			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	97		0.96		0.62		8'			

COMMENT:

701-71
Sample No.
[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	01/07/89	15°C		210	6.11	10	70			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	82		0.80		0.59		6.5'			

COMMENT:

Sample No.
[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/22/89	17°C		310	6.11	10	110			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	121		0.70		0.54		10'			

SAMPLE DATA

RESULT # 807-0232 STATION # G2

Sample No.

[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	09/03/89	16°C		290	6.19	10	90			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	107		0.82		0.49		11'			

COMMENTS:

Sample No.

[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	11/20/89	16°C		330	6.07	20	90			

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	112		0.96		0.40		10'			

COMMENTS:

Sample No.

[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE										

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE										

14-103

SAMPLE DATA

PERMIT # 807-0232

STATION # GW2

Sample No.

11

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	12/8/93	16°C		240	6.90	8	40	1		

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	38		<.10		2.27		8'			

COMMENT:

Sample No.

11

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	02/22/94			280	7.10	-12	32	5		

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	65		0.21		0.44		8'			

COMMENT:

Sample No.

11

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	6/8/94	16°C		300	7.30	0	40	2		

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE	45		<.10		<.10		7'			

COMMENT:

WATER QUALITY DATA ENTRY FORMS: Part 1

Type of Report:
 Premining
 During Mining/Reclamation
 Other

STATION INFORMATION

PERMIT #: 807-0365 STATION #: GW12 SOAP PERMITTEE #: N/A

*COUNTY #: 007 BASIN #: 02 QUAD NAME: Eagan

STATION TYPE (check): Spring [04] Well [] Old Mine
[02] Stream [05] Sediment Pond / Influent Works Portal
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY
DEPTH (ft): _____ CASING DIAMETER (in): _____ AQUIFER DESCRIPTION: _____
TOP OF AQUIFER (MSL): _____ AQUIFER THICKNESS (ft): _____ TOP OF WELL ELEV. (MSL): _____

WATERSHED DESCRIPTION: Steep Slopes/Previously Mines DRAINAGE AREA (ac.): _____

LATITUDE (DMS): 36-35-20 LONGITUDE (DMS): 83-53-33

UTM ZONE: 17 **16 West of 84° Longitude** UTM EASTING: 241,233 UTM NORTHING: 4,053,172
17 East of 84° Latitude

LOCAL STREAM NAME: Clear Fork

COAL COMPANY NAME: Apollo Fuels, Inc.

COLLECTING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

ANALYZING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

COMMENTS: _____

PERMIT # 807-0365 STATION # GW12

SAMPLE A

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	06/07/02	13	0.009	588	7.10	7	52	14		

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	230		2.14	7.16	1.56	1.71				

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	07/02/02	14	0.0111	474	7.80	0	55	3		

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	200		3.35	4.26	1.55	0.58				

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	08/06/02	16.3	0.071	420	6.3	9	74	0	247	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	180		2.81	10.47	1.43	1.45				

COMMENT:

SAMPLI TA

PERM # 807-0365 STATION # GW12

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	09/11/02	16.2	0.00217	380	6.20	57	80	0	247	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	190		7.28	15.36	1.30	1.38				

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	10/02/02	16	0.0155	515	6.20	0	82	0	334	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	220		0.96	3.38	1.02	1.34				

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/25/03	14.4	0.0110	550	6.30	10	30	0	357	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	160		3.54	12.75	1.70	1.70				

COMMENT:

ATTACHMENT 16.3.A

The following six (6) pages, "Lab Analysis Reports" are true and accurate copies of the originals as presented and approved in Appolo Fuels, Inc. #807-0314, Original Application.

Notary Public: Janet K. Colill

State in which commissioned: Kentucky

My commission expires: 2-13-10

DELTA TESTING INC.

HC 61, BOX 2010

HYDEN, KY. 41749

606-672-3152

ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT # . 3112

Sample Date: 6-7-02

Analysis Date: 6-7-02

STATION # ~~PLE12~~ Seep-12

Field pH: 7.1

Field Temp.: 19 C

WATER LEVEL: FT

DISCHARGE: 0.009 CFS

pH (lab): 6.18

Alkalinity: 52 mg/l

Acidity: 7 mg/l

Cond. (lab): 553 uhoms/cm

TSS: 14 mg/l

Total Fe: 7.18 mg/l

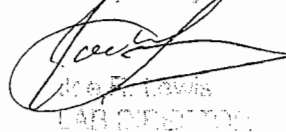
Diss. Fe: 2.14 mg/l

Total Mn: 1.71 mg/l

Diss. Mn: 1.56 mg/l

Sulfate: 220 mg/l

Analyzed by



M. E. Lewis
LAB DIRECTOR

DELTA TESTING INC.

HC 61, BOX 2019

HYDEN, KY. 41749

606-672-3452

ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 7-2-02

Analysis Date: 7-2-02

STATION #: SEEP12

Field pH: 7.8

Field Temp.: 14 C

COND (Field): uS/cm

WATER LEVEL: FT

DISCHARGE: 0.0111 CFS

pH (lab): 6.20

Alkalinity: 55 mg/l

Turbidity: 0 mg/l

Cond. (lab): 474 uhoms/cm

TSS: 3 mg/l

TDS: 299 mg/l

Total Fe: 4.26 mg/l

Diss. Fe: 3.35 mg/l

Total Mn: 0.58 mg/l

Diss. Mn: 1.55 mg/l

Sulfate: 200 mg/l

Analyzed by



Joyce R. Lewis

LAB DIRECTOR

Instrument: Sampled by P.R.E. Engineering, PSC

DELTA TESTING INC.

HC 61, BOX 2010

HYDEN, KY. 41749

606-672-3452

ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 8-6-02

Analysis Date: 8-6-02

STATION #: SEEP12

Field pH: 8.3

Field Temp.: 16.3 °C

COND (Field): 420 uS/cm

WATER LEVEL: FT

DISCHARGE: 0.071 CFS

pH (lab): 6.44

Alkalinity: 74 mg/l

Acidity: 9 mg/l

Cond. (lab): 576 uhoms/cm

TSS: mg/l

TDS: 349 mg/l

Total Fe: 10.7 mg/l

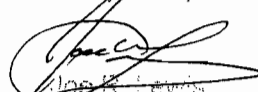
Diss. Fe: 2.81 mg/l

Total Mn: 1.45 mg/l

Diss. Mn: 1.43 mg/l

Sulfate: 980 mg/l

Analyzed by


Joe K. Lewis
LAB DIRECTOR

Sample Submitted by: B.B. Engineering, PSC

HC 61, BOX 2010
HYDEN, KY. 41749
606-672-3452
ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 9-11-02

Analysis Date: 9-11-02

STATION #: SEEP12

Field pH: 6.2

Field Temp.: 16.2 C

COND (Field): 380 uS/cm

WATER LEVEL: FT

DISCHARGE: 0.00217 CFS

pH (lab): 6.42

Alkalinity: 80 mg/l

Acidity: 57 mg/l

Cond. (lab): uhoms/cm

TSS: mg/l

TDS: 247 mg/l

Total Fe.: 15.36 mg/l

Diss. Fe: 7.28 mg/l

Total Mn.: 1.38 mg/l

Diss. Mn: 1.30 mg/l

Sulfate: 190 mg/l

Analyzed by



Joe R. Lewis
LAB DIRECTOR

Comment: Sampled by RLB Engineering, PSC

DELTA TESTING INC.

HC 61, BOX 2010

HYDEN, KY. 41749

606-672-3452

ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 10-2-02

Analysis Date: 10-2-02

STATION #: SEEP12

Field pH: 6.23

Field Temp.: 16 C

COND (Field): 515 uS/cm

WATER LEVEL: FT

DISCHARGE: 0.0155 CFS

pH (lab): 7.35

Alkalinity: 82 mg/l

Acidity: 0 mg/l

Cond. (lab): uhoms/cm

TSS: mg/l

TDS: 334 mg/l

Total Fe.: 3.38 mg/l

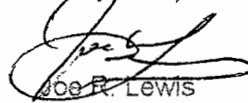
Diss. Fe: 0.96 mg/l

Total Mn.: 1.34 mg/l

Diss. Mn: 1.02 mg/l

Sulfate: 220 mg/l

Analyzed by



Joe R. Lewis

LAB DIRECTOR

Comment: Sampled by RLB Engineering, PSC

Analysis as per "Standard Methods for the Analysis of Water & Wastewater"

DELTA TESTING INC.

815 HWY 80 EAST

HYDEN, KY. 41749

606-872-3452

ANALYSIS SHEET

COMPANY: APOLLO FUELS INC.

PERMIT #: 3112

Sample Date: 4-25-03

Analysis Date: 4-25-03 / 4-26-03

STATION #: SEEP12

Field pH: 6.3

Field Temp.: 14.4 C

COND (Field): 550 uS/cm

WATER LEVEL: FT

DISCHARGE: 0.0110 CFS

pH (lab): 6.23

Alkalinity: 30 mg/l

Acidity: 10 mg/l

Cond. (lab): 590 uhoms/cm

TSS: mg/l

TDS: 357 mg/l

Total Fe.: 12.75 mg/l

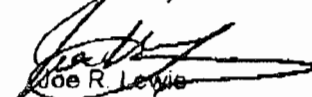
Diss. Fe: 3.54 mg/l

Total Mn.: 1.70 mg/l

Diss. Mn: 1.70 mg/l

Sulfate: 180 mg/l

Analyzed by


Joe R. Lewis
LAB DIRECTOR

Comment: Sampled by RLB Engineering, PSC

Analysis as per "Standard Methods for the Analysis of Water & Wastewater"

ATTACHMENT 17.2.A

Watershed Description Narrative

The mining activity proposed in this application will consist of contour strip mining of the Jellico coal seam. This operation is located near the community of Fonde in Bell County in the named watersheds of Back Creek, Sowder Creek, Marsee Branch and an unnamed branch of Clear Fork on the Forkridge and Eagan 7 ½ Minute U.S.G.S. Quadrangle Maps.

The surface disturbances proposed as a part of this application will be located within the drainage area of four (4) watersheds as delineated on the MRP/ERI Map provided in this application. These watersheds are described further as follows:

<u>WATERSHED DESIGNATION</u>	<u>DRAINAGE NAME</u>	<u>AREA</u>	<u>1st ORDER WATERSHED</u>	<u>TYPE DISTURBANCE</u>
A1	BACK CREEK	1191.40	YES	NEW
A2	SOWDER BRANCH	2195.67	YES	NEW
A3	UNNAMED	128.53	YES	NEW
A4	MARSEE BRANCH	793.24	YES	NEW

There are numerous other existing surface disturbances associated with both active and inactive mining activity located within the watersheds affected by the mining activity. Therefore we feel that the additional areas proposed by this application will not have any adverse effects on the water quality of quantity of this area.

ATTACHMENT 17.3.A

SURFACE WATER USERS

The water user inventory for this proposed operation has determined that no surface water users exist within the vicinity of the operation.

17.4 Describe the premining surface water monitoring program used to determine the seasonal variations in surface water quality and quantity. At a minimum, six months of data shall be collected. The description shall identify the location of each monitoring point, parameters tested, and laboratory methods used. Submit the description as "Attachment 17.4.A".

See Attachment 17.4.A.

17.5 On cabinet approved forms submit the results of the premining surface water monitoring program. Original or notarized copies of all laboratory analyses shall be provided. Submit this information as "Attachment 17.5.A".

See Attachment 17.5.A.

18. Determination of Probable Hydrologic Consequences

18.1 Provide as "Attachment 18.1.A", a determination of the probable hydrologic consequences (PHC) which the proposed mining operation will have on both surface water and ground water systems within the proposed permit area and adjacent areas. The contents of the determination shall conform to the requirements of 405 KAR 8:030, Section 32 (surface mine) or 405 KAR 8:040, section 32 (underground mine).

See Attachment 18.1.A.

18.2 Provide as "Attachment 18.2.A", a detailed description of the protective measures to be taken as part of the mining and reclamation operations to ensure compliance with 405 KAR 16:060 Sections, 1, 2, 3, 4, 5, 6, 8, 9, 12, and 405 KAR 16:080 (surface mine) or 405 KAR 18:060, Sections 1, 2, 3, 4, 5, 7, and 405 KAR 18:080 (underground mine). Detailed designs of protective measures shall be presented in other pertinent sections of this application.

See Attachment 18.2.A.

19. Alternate Water Supply Information

19.1 Describe the extent to which the proposed mining activities may approximately result in the contamination, diminution, or interruption of underground or surface sources of water within the proposed permit or adjacent areas which are used for domestic, agricultural, industrial or other beneficial uses. This description shall be noted as "Attachment 19.1.A".

See Attachment 19.1.A.

19.2 If contamination, diminution, or interruption may result, identify and describe the adequacy of the alternate source of water supply that could be developed. Provide this information as "Attachment 19.2.A". NOTE: The submission of the information required in Attachment 19.2.A is optional for underground mine applicants.

See Attachment 19.2.A.

WA R QUALITY DATA ENTRY FORMS: **Part 1**

Type of Report:
 Premining
 During Mining/Reclamation
 Other

STATION INFORMATION

PERMIT #: 807-0365 STATION #: SW001 SOAP PERMITTEE #: N/A

*COUNTY #: 007 BASIN #: 02 QUAD NAME: Eagan & Fork Ridge

STATION TYPE (check): [01] Spring [04] Well [] Old Mine
[XX] Stream [05] Sediment Pond / Influent Works Portal
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY

DEPTH (ft): _____ CASING DIAMETER (in): _____ AQUIFER DESCRIPTION: _____
TOP OF AQUIFER (MSL): _____ AQUIFER THICKNESS (ft): _____ TOP OF WELL ELEV. (MSL): _____

WATERSHED DESCRIPTION: Steep Slopes/Previously Mined DRAINAGE AREA (ac.): _____

LATITUDE (DMS): 36-35-24 LONGITUDE (DMS): 83-35-24

UTM ZONE: 17 **16 West of 84° Longitude** UTM EASTING: 241,088 UTM NORTHING: 4,053,300
17 East of 84° Latitude

LOCAL STREAM NAME: Back Creek

COAL COMPANY NAME: Appolo Fuels, Inc.

COLLECTING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

ANALYZING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

COMMENTS: _____

PERM. # 807-0365 STATION # SW001

SAMPL TA

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	02.20/08		10.14	460	7.10	0	92.45	8	360	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	141			0.25		0.10				

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	03/19/08		12.86	480	7.02	0	88.10	7	390	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	136			0.30		0.14				

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/23/08		9.81	460	6.92	0	81.55	10	370	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	145			0.47		0.20				

COMMENT:

PERM. # 807-0365 STATION # SW001

SAMPL TA

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	05/21/08		15.62	490	7.04	0	86.10	8	400	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	122			0.39		0.15				

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	06/19/08		14.31	470	6.84	0	85.90	6	380	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	126			0.30		0.14				

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	07/23/08		7.85	450	6.60	0	81.17	8	350	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	120			0.21		0.05				

COMMENT: _____

ATTACHMENT 16.3.A

The following six (6) pages, "Lab Analysis Reports" are true and accurate copies of the originals.

Notary Public: Greg Edill

State in which commissioned: Kentucky

My commission expires: 2-13-10

FROM :

FAX NO. :6065585565

Aug. 13 2008 09:18AM P5

TECHNICAL WATER LABORATORIES, INC.
P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
 Sample ID: 807-0365 SW001
 Lab# 16
 Date Sampled: 02-20-2008
 Date Analyzed: 02-21-2008
 Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.10		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide treatment.
Alkalinity to pH 4.5	92.45	Mg/L	
Total Iron	0.25	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.10	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	8	Mg/L	
Total Dissolved Solids	360	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	141	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	460	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)		GPM	
Flow Rate (Cfs)	10.14	CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with acceptable analytical methods and procedures and are correct and accurate to the best of my knowledge.



 Signature of Laboratory Supervisor

FROM :

FAX NO. :6065585565

Aug. 13 2008 09:19AM P7

TECHNICAL WATER LABORATORIES, INC.
P.O. Box 309 Bledsoe, KY 40810 (606) 658-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
 Sample ID: 807-0365 SW001
 Lab# 16
 Date Sampled: 03-19-2008
 Date Analyzed: 03-20-2008
 Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.02		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide treatment
Alkalinity to pH 4.5	88.10	Mg/L	
Total Iron	0.30	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.14	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	7	Mg/L	
Total Dissolved Solids	390	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	136	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	480	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)		GPM	
Flow Rate (Cfs)	12.86	CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with acceptable analytical methods and procedures and are correct and accurate to the best of my knowledge.


 Signature of Laboratory Supervisor

FROM :

FAX NO. :6065585565

Aug. 13 2008 09:17AM P3

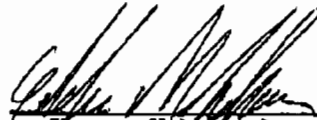
TECHNICAL WATER LABORATORIES, INC.
P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
 Sample ID: 807-0365 SW001
 Lab# 16
 Date Sampled: 04-23-2008
 Date Analyzed: 04-24-2008
 Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	6.92		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide treatment
Alkalinity to pH 4.5	81.55	Mg/L	
Total Iron	0.47	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.20	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	10	Mg/L	
Total Dissolved Solids	370	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	145	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	460	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)		GPM	
Flow Rate (Cfs)	9.81	CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.



 Signature of Laboratory Supervisor

FROM :

FAX NO. :6065585565

Aug. 13 2008 09:18AM P4

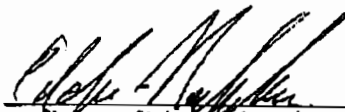
TECHNICAL WATER LABORATORIES, INC.
P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
 Sample ID: 807-0365 SW001
 Lab# 16
 Date Sampled: 05-21-2008
 Date Analyzed: 05-22-2008
 Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	7.04		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide treatment
Alkalinity to pH 4.5	86.10	Mg/L	
Total Iron	0.39	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.15	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	8	Mg/L	
Total Dissolved Solids	400	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	122	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	490	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)		GPM	
Flow Rate (Cfs)	15.62	CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with acceptable analytical methods and procedures and are correct and accurate to the best of my knowledge.



 Signature of Laboratory Supervisor

FROM :

FAX NO. : 6065585565

Aug. 13 2008 09:20AM P8


TECHNICAL WATER LABORATORIES, INC.
P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
 Sample ID: 807-0365 SW001
 Lab# 16
 Date Sampled: 06-18-2008
 Date Analyzed: 06-19-2008
 Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	6.84		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide
Alkalinity to pH 4.5	85.90	Mg/L	treatment
Total Iron	0.30	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.14	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	6	Mg/L	
Total Dissolved Solids	380	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	126	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	470	Michromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)		GPM	
Flow Rate (Cfs)	14.31	CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with
 Acceptable analytical methods and
 Procedures and are correct and accurate to
 The best of my knowledge.



 Signature of Laboratory Supervisor

FROM :

FAX NO. :6065585565

Aug. 13 2008 09:19AM P6

TECHNICAL WATER LABORATORIES, INC.
P.O. Box 309 Bledsoe, KY 40810 (606) 558-5079 Fax (606)558-5565

SAMPLE ANALYSIS RESULTS

Tested for (Company Name): Appolo Fuels, Inc.
 Sample ID: 807-0365 SW001
 Lab# 16
 Date Sampled: 07-23-2008
 Date Analyzed: 07-24-2008
 Sampled By: Leonard Thompson

Parameter	Value	Units	Remarks
PH	6.60		
Acidity to pH 8.3	0	Mg/L	*with hot peroxide treatment
Alkalinity to pH 4.5	81.17	Mg/L	
Total Iron	0.21	Mg/L	
Dissolved Iron		Mg/L	
Total Manganese	0.05	Mg/L	
Dissolved Manganese		Mg/L	
Total Suspended Solids	8	Mg/L	
Total Dissolved Solids	350	Mg/L	
Settleable Solids		Mg/L	
Total Solids		Mg/L	
Sulfates	120	Mg/L	
Calcium		Mg/L	
Nitrates		Mg/L	
Nitrogen (Ammonia)		Mg/L	
Bicarbonate		Mg/L	
Sodium		Mg/L	
Potassium		Mg/L	
Chloride		Mg/L	
Temperature		degrees c	
Turbidity			
Specific Conductance	450	Micromhos/CM	
Dissolved Oxygen		Mg/L	
Hardness		Mg/L	
Flow Rate (Gpm)		GPM	
Flow Rate (Cfs)	7.85	CFS	
Depth to Water		Feet	
Well Depth		Feet	

All tests are conducted in accordance with Acceptable analytical methods and Procedures and are correct and accurate to The best of my knowledge.



 Signature of Laboratory Supervisor

Type of Report:
 Premining
 During Mining/Reclamation
 Other

STATION INFORMATION

PERMIT #: 807-0365 STATION #: SW004 SOAP PERMITTEE #: N/A

*COUNTY #: 007 BASIN #: 02 QUAD NAME: Eagan

STATION TYPE (check): [01] Spring [04] Well [] Old Mine
 Stream [05] Sediment Pond / Influent Works Portal
[03] Lake [06] Sediment Pond / Discharge

FOR WELLS ONLY
DEPTH (ft): _____ CASING DIAMETER (in): _____ AQUIFER DESCRIPTION: _____
TOP OF AQUIFER (MSL): _____ AQUIFER THICKNESS (ft): _____ TOP OF WELL ELEV. (MSL): _____

WATERSHED DESCRIPTION: Steep Slopes/Previously Mined DRAINAGE AREA (ac.): _____

LATITUDE (DMS): 36-35-21 LONGITUDE (DMS): 83-53-37

UTM ZONE: 17 **16 West of 84° Longitude** UTM EASTING: 241,134 UTM NORTHING: 4,053,206
17 East of 84° Latitude

LOCAL STREAM NAME: Clear Fork

COAL COMPANY NAME: Appolo Fuels, Inc.

COLLECTING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

ANALYZING FIRM NAME: Technical Water Laboratories, Inc. PO Box 309, Bledsoe, KY 40810

COMMENTS: _____

PERMIT # 807-0365 STATION # SW004

SAMPL # 1A

SAMPLE No. [1]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/29/02			401	6.70	0	78	6		

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	14.5			0.03		0.18				

COMMENT:

SAMPLE No. [2]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	05/14/02			610	6.80	0	102	16		

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	40.1			0.08		0.06				

COMMENT:

SAMPLE No. [3]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	05/29/02			730	6.40	0	138	8		

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	72			0.02		0.18				

COMMENT:

PEP # 807-0365 STATION # SW004

SAMP. ATA

SAMPLE No. [4]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	09/11/02			1166	8.70	0	190	4	700	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to water (ft)			
VALUE	450			0.00		0.00				

COMMENT:

SAMPLE No. [5]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	10/02/02			856	8.12	0	146	9	556	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	280			0.00		0.00				

COMMENT:

SAMPLE No. [6]

PARAMETER	DATE MM/DD/YY	TEMP(C)	DISCHARGE (cfs)	CONDUCTIVITY	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE	04/25/03			465	7.50	0	63	3	290	

PARAMETER	SO ₄ Diss mg/l	O ₂ Diss mg/l	Fe, Diss mg/l	Fe, Total mg/l	Mn, Diss mg/l	Mn, Total mg/l	Depth to Water (ft)			
VALUE	170			0.19		0.13				

COMMENT:

ATTACHMENT 17.5.A

The following 6 (6) pages, "Lab Analysis Reports" are true and accurate copies of the originals as presented and approved in Bell County Coal Corporation #807-0314, Original Application.

Notary Public: *W. R. Call*

State in which commissioned: *Kentucky*

My commission expires: *2-13-10*

KENTUCKY RESOURCE LABS
P.O. Box 350
Manchester, KY 40962
606-598-2605

WATER ANALYSIS

STREAM
(O.S.M.)

TO: Appolo Fuels, Inc.
P.O. Box 1727
Middlesboro, KY. 40965

Permit No.: _____
County: _____
Sampled by: Company
Date: 4/29/02

SWIM-4
Job I.D.: SW-4
Temperature: 58
Discharge: 0.5184

Parameter

pH	<u>6.7</u>	
Alkalinity	<u>78</u>	mg/l CaCO ₃
Acidity	<u>0</u>	mg/l CaCO ₃
Total Suspended Solids	<u>6</u>	mg/l
Total Iron	<u>0.03</u>	mg/l
Total Manganese	<u>0.18</u>	mg/l
Sulfate	<u>14.5</u>	mg/l
Specific Conductance	<u>401</u>	umhos/cm

Signed *Dale Hewley*

KENTUCKY RESOURCE LABS

P.O. Box 350
Manchester, KY 40962
606-598-2605

WATER ANALYSIS

STREAM
(O.S.M.)

TO: Appolo Fuels, Inc.
P.O. Box 1727
Middlesboro, KY. 40965

Permit No.: _____
County: _____
Sampled by: Company
Date: 5/14/02

SWIM-4
Job I.D.: SW-4
Temperature: 59
Discharge: 0.4608

Parameter

pH	6.8	
Alkalinity	102	mg/l CaCO ₃
Acidity	0	mg/l CaCO ₃
Total Suspended Solids	16	mg/l
Total Iron	0.08	mg/l
Total Manganese	0.06	mg/l
Sulfate	40.1	mg/l
Specific Conductance	610	umhos/cm

Signed *Dale Hensley*

KENTUCKY RESOURCE LABS
P.O. Box 350
Manchester, KY 40962
606-598-2605

WATER ANALYSIS

STREAM
(O.S.M.)

TO: Appolo Fuels, Inc.
P.O. Box 1727
Middlesboro, KY. 40965

Permit No.: _____
County: _____
Sampled by: Company
Date: 5/29/02

SWIM-4
Job I.D.: SW-4
Temperature: 62
Discharge: 0.479

Parameter

pH	<u>6.4</u>	
Alkalinity	<u>138</u>	mg/l CaCO ₃
Acidity	<u>0</u>	mg/l CaCO ₃
Total Suspended Solids	<u>8</u>	mg/l
Total Iron	<u>0.02</u>	mg/l
Total Manganese	<u>0.18</u>	mg/l
Sulfate	<u>72</u>	mg/l
Specific Conductance	<u>730</u>	umhos/cm

Signed

Dale Hendry

DELTA TESTING INC.

HC 61, BOX 2010
HYDEN, KY. 41749
606-672-3452
ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 9-11-02

Analysis Date: 9-11-02

STATION #: ~~SW4~~ SWIM-4

Field pH: 8.7

Field Temp.: 20.9 C

COND (Field): 1166 uS/cm

WATER LEVEL: FT

DISCHARGE: 1.4 CFS

pH (lab): 8.25

Alkalinity: 190 mg/l

Acidity: 0 mg/l

Cond. (lab): uhoms/cm

TSS: 4 mg/l

TDS: 700 mg/l

Total Fe.: 0.00 mg/l

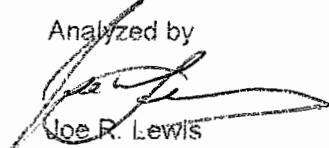
Diss. Fe: 0.00 mg/l

Total Mn.: 0.00 mg/l

Diss. Mn: 0.00 mg/l

Sulfate: 450 mg/l

Analyzed by



Joe R. Lewis
LAB DIRECTOR

Comment: Sampled by RLB Engineering, PSC

DELTA TESTING INC.

HC 61, BOX 2010
HYDEN, KY. 41749
606-672-3452
ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 10-02-02

Analysis Date: 10-02-02

STATION #: ~~SW4~~ SWIM-4

Field pH: 8.12

Field Temp.: 22.4 C

COND (Field): 856 uS/cm

WATER LEVEL: FT

DISCHARGE: 4.7761 CFS

pH (lab): 8.17

Alkalinity: 146 mg/l

Acidity: 0 mg/l

Cond. (lab): uhoms/cm

TSS: 9 mg/l

TDS: 556 mg/l

Total Fe.: 0.00 mg/l

Diss. Fe: 0.00 mg/l

Total Mn.: 0.00 mg/l

Diss. Mn: 0.00 mg/l

Sulfate: 280 mg/l

Analyzed by



Joe R. Lewis
LAB DIRECTOR

Comment: Sampled by RLB Engineering, PSC

Analysis as per "Standard Methods for the Analysis of Water & Wastewater"

DELTA TESTING INC.

815 HWY 80 EAST
HYDEN, KY. 41749
606-672-3452
ANALYSIS SHEET

COMPANY: APOLLO FUELS INC

PERMIT #: 3112

Sample Date: 4-25-03

Analysis Date: 4-25-03 / 4-26-03

STATION #: SW# *Swim-4*

Field pH: 7.5

Field Temp.: 14.3 C

COND (Field): 485 uS/cm

WATER LEVEL: FT

DISCHARGE: 31.0000 CFS

pH (lab): 7.55

Alkalinity: 83 mg/l

Acidity: 0 mg/l

Cond. (lab): 560 uhoms/cm

TSS: 3 mg/l

TDS: 290 mg/l

Total Fe.: 0.19 mg/l

Diss. Fe: 0.18 mg/l

Total Mn.: 0.13 mg/l

Diss. Mn: 0.12 mg/l

Sulfate: 170 mg/l

Analyzed by
Joe R. Lewis
Joe R. Lewis
LAB DIRECTOR

Comment: Sampled by RLB Engineering, PSC

Analysis as per "Standard Methods for the Analysis of Water & Wastewater"

ATTACHMENT 18.1.A

PROBABLE HYDROLOGIC CONSEQUENCE DETERMINATION

The proposed mining associated with this permit will have no adverse affects to the existing hydrologic balance. Pre-law mining and logging has occurred within and adjacent to the proposed permit area. This in itself has effected a gradual change in the surface and ground water systems resulting in their present states. Due to the previous mining, remaining pre-law sites, and relatively small area of surface disturbance proposed per this permit, no perceptible effects to the existing balance is anticipated. Following are supporting discussions which address required specifics for both surface and ground water.

SURFACE WATER

1) PEAK DISCHARGE RATES, EMPHASIZING FLOODING POTENTIAL:

Peak discharge rates are expected to increase slightly from disturbed areas which have not re-established vegetation. These increases will be temporary until such time that vegetation is re-established. The disturbed areas will be very small when compared to the total watershed area. Likewise, the increase in discharge rates will be comparatively small, thus presenting no increase in flooding potential.

2) SETTLEABLE SOLIDS AT PEAK DISCHARGE:

Small increases of settleable solids at peak discharges are also anticipated from disturbed areas prior to revegetation. These settleable solids will be controlled by the sediment pond located as shown on the MRP Map. After mining, reclamation, and vegetation re-establishment, settleable solids concentrations should return to near pre-mining levels.

3) LOW-FLOW DISCHARGE RATES, EMPHASIZING THE POTENTIAL FOR WATER SUPPLY DIMINUTION:

Low-flow discharge rates during-mining are expected to be somewhat less than those existing prior to mining. This is primarily due to routing of run-off into the sedimentation pond and subsequent retention time. However, after mining, reclamation, and pond removal, the discharge rates at low-flow will be commensurate with pre-mining discharge.

4) SUSPENDED SOLIDS AT LOW FLOW:

Suspended solids are expected to increase temporarily from areas which have been cleared and grubbed. Implementation of the sediment structures will prevent the discharge of unacceptable levels. After mining/reclamation operations are completed and revegetation is substantial, concentrations are

ATTACHMENT 18.1.A

expected to return closely to pre-mining levels.

- 5) PH, AT LOW FLOW, EMPHASIZING THE POTENTIAL FOR ACID DRAINAGE CONDITIONS:

Baseline hydrologic data indicates no acidity or associated problems. Also, as supported by the included baseline geologic data, neither the overburden nor the coal seam to be mined indicate a cumulative potential to produce acid mine drainage.

Based on the previous discussions, it is felt that the mining as proposed per this permit will have no detrimental impact to surface water. However, in-stream during-mining monitoring of the Clear Fork at the location shown on the MRP Map and ERI Map as point #SW-3 will allow identification and correction of any adverse effects, should they occur.

GROUNDWATER

- 1) WATER QUANTITY, EMPHASIZING WATER LEVELS/POTENTIAL WATER SUPPLY DIMINUTION FOR EXISTING USERS/DEWATERING OF POTENTIAL AQUIFERS:

Fracturing is the method of groundwater recharge and transmittal, and fracturing will not be diminished by this operation. Consequently water quantity should not be affected.

- 2) PH, EMPHASIZING THE POTENTIAL FOR ACID DRAINAGE CONDITIONS:

As shown by the baseline geologic and surface/ground water data, there are currently no acidity problems present, and no cumulative potential to produce acid drainage conditions are indicated. As a result, any infiltration will have no detrimental effect to the ground water regime.

Based on the previous discussions, it is felt that the mining proposed per this permit will have no adverse impacts to the ground water system. However, during-mining monitoring of ground water points #GW-1, #GW5 and #GW12 will allow identification and correction of any adverse effects, should they occur.

ATTACHMENT 18.2.A

PROTECTION OF THE HYDROLOGIC BALANCE

SEDIMENT CONTROL MEASURES:

Utilization of the Sediment Structures will control sediment from the surface disturbance areas pertinent to this permit. Run-off from these areas will be passed through the structures prior to leaving the permitted area. Consequently, contributions of sediment to streams outside the permitted boundary will be prevented to the extent possible.

DISCHARGE STRUCTURES:

The primary source of discharges pertinent to this permit are the previously discussed sediment structures. Standard engineering design procedures have been used to design these structures. The emergency spillways of the ponds will be rip-rapped to preclude excessive erosion and to prevent enlargement of the channel, if they are not cut in solid.

ACID FORMING AND TOXIC FORMING MATERIALS:

Baseline geologic sampling and subsequent acid base accounting does not indicate an overall cumulative potential to produce acidic drainage. However, if any are encountered they will be combined with the other strata of the column which has a total overall NP greater than PA. Consequently, the overall material will not have a potential to produce acidic or toxic forming matter. The material will be placed in the spoil storage area in such a manner to prevent any acid forming or toxic forming material from being exposed to air, water, or weathering and care will be taken to ensure covering of any acid forming or toxic forming material with a minimum of four (4) feet of non-toxic, non-acidic, and non-combustionable material.

GROUNDWATER PROTECTION AND RECHARGE CAPACITY:

As previously detailed in the preceding "Probable Hydrologic Consequences Determination" ground water is not expected be adversely affected by the proposed mining for the reasons specified in that text.

ATTACHMENT 18.2.A

SURFACE WATER PROTECTION:

In general surface water will be protected by the following:

- A) Utilization of the sediment structures and/or alternate sediment control devices to prevent the contribution of sediment to stream flow outside the permit area, to the extent possible.
- B) During-mining monitoring of the stream receiving discharge will serve to identify and allow correction of any detrimental effects should they occur.

WATER RIGHTS AND REPLACEMENT:

As also set forth in the "Probable Hydrologic Consequences Determination", the proposed mining is not expected to adversely impact surface or ground water systems. Consequently, water supply sources should not be affected. As a result, no specific water source replacement plans are needed.

DISCHARGES INTO UNDERGROUND MINES:

No discharge into underground mines is proposed per this permit.

DISCHARGES OF ACCUMULATED WATER:

Any water which has accumulated will be discharged in a controlled manner to a natural or constructed drainage way. Unless the discharge meets all applicable state and federal water quality standards, water will not be allowed to leave the permitted area without first passing through the sediment structures. Unless specifically authorized by the Cabinet, no spoil overburden, or natural barriers will be removed to release water accumulations.

ATTACHMENT 19.1.A

Extent To Which Mining Activities May Result In The Contamination, Diminution Or Interruption Of Water

The proposed mining activities will not result in the contamination, diminution or interruption of underground or surface sources of water within the proposed permit or adjacent areas which are used for domestic, agricultural, industrial or other beneficial uses due to the following:

- a) Extensive underground and surface mining has previously occurred within the watersheds pertinent to application, without any apparent detrimental effect to water sources.
- b) Contamination will not occur due to the absence of a potential to produce acid drainage, controlling sediment structures and during-mining monitoring to identify and correct any detrimental impacts, should any occur.
- c) Diminution/interruption will not occur due to the operation not affecting the method of groundwater recharge and transmittal (fracturing).

ATTACHMENT 19.2.A

Alternate Sources Of Water Supply

It is not anticipated that the activities proposed in this application will have any adverse effects on any surface or ground sources of water. However, since mining activities are proposed, it is possible that surface water or groundwater sources could possibly be affected. If replacement of a domestic water supply is required by the Cabinet a water supply will be provide a temporary and permanent basis as follows. Within forty-eight (48) hours after receiving notice from the cabinet that the water supply was adversely impacted by mining, provide drinking water on an emergency basis. Within two (2) weeks after receiving notice from the cabinet that the water supply was adversely impacted by mining, provide a temporary water supply connected to the existing plumbing, if any, that provides water for all ordinary household purposes including drinking, cooking, bathing, sanitation and laundry and drinking water for poultry, livestock and domestic animals and water for noncommercial domestic agricultural and horticultural activities. Within two (2) years after receiving notice from the cabinet that the water supply was adversely impacted by mining, provide a satisfactory permanent water supply.

The following sources of water could be developed to replace any source of water which might be adversely affected by operation:

- 1) Cisterns: Individual residences could be provided with cisterns of adequate capacity to provide ample water supply. There is adequate rainfall within this area to allow the use of cisterns.
- 2) Deep Wells: The existing wells or new wells could be drilled to lower depths. The casings in these wells could be extended and the outside of the well casing could be grouted to seal off any water from seeping down into the well.
- 4) A chemical treatment system to clarify contaminated water could be provided for any source of water which might be adversely affected by this operation.
- 5) Stream channels could be cleaned in the event of heavy sedimentation or reconstructed in the event of cracks to enhance the surface water flow of the watershed.

20. Prime Farmland Investigation

20.1 Based upon the applicant's review of relevant information and the performance of an on-site investigation of the permit area, the applicant proposes a negative determination on 145.77 acres of this permit. This request is based upon the following:

145.77 acres should not be considered prime farmland due to the slope being greater than 10% or the soil is very rocky, or the area floods during a growing season more than once every two years thus reducing crop yields, etc. Documentation demonstrating this assertion is submitted as Attachment 20.1.A.

See Attachment 20.1.A

_____ acres should not be considered prime farmland as it has not been historically used as cropland. The standard departmental surface owner and third party affidavits are submitted as "Attachment 20.1.B and 20.1.C". Applicant should provide a narrative explaining why the acreage as not been farmed. This narrative should reference the history of nearby and adjacent lands.

_____ acres should not be considered prime farmland as demonstrated by the following U.S. Soil Conservation Service statement. The land designated on the USGS topographic map attached to permit application no. _____ has

- no prime farmland soils
- some prime farmland soils
- all prime farmland soils

Name _____ Title _____

Signature _____ Date _____

20.2 For applicants claiming an exemption from prime farmland reconstruction submit proper documentation as "Attachment 20.2.A" to demonstrate that a permit has been obtained prior to August 3, 1977, or that the other requirements of 405 KAR 8:050, Section 3, have been met.

N/A

20.3 Identify the acreage of prime farmland acreage to be restored. Provide as "Attachment 20.3.A" the prime farmland restoration plan.

N/A

21. Land Use Information

21.1 Describe the capability of the proposed permit area, before any mining, to support a variety of land uses. Consideration shall be given to soil and foundation, topography, vegetative cover and hydrology. Submit as "Attachment 21.1.A".

See Attachment 21.1.A.

ATTACHMENT 20.1.A

Based on the U.S.G.S. topographical map, and field investigation the areas proposed by this original permit application are located on slopes greater than ten (10%) percent.



A handwritten signature in blue ink that reads "Timothy C. Howard". The signature is written in a cursive style and is positioned above a horizontal line.

Signature, Timothy C. Howard, P.E.

ATTACHMENT 21.1.A

The land use of this site prior to mining activity was forestry. The land is not suited to any other type of land use. The relatively steep slopes of the land, along with lack of access to the site, prevented the development of any type of land use including cropland, recreational, water resources, residential or industrial/commercial.

- 21.2 Provide an estimate of the permit area's potential productivity expressed in average of food, fiber, forage, or wood products. Provide as "Attachment 21.2.A".
See Attachment 21.2.A.
- 21.3 Describe the existing uses of the lands adjacent to the proposed permit areas and identify any local land use classifications of the proposed permit area. Submit as "Attachment 21.3.A".
See Attachment 21.3.A.
- 21.4 Describe the consideration which has been given to making the proposed postmining activities consistent with surface owner plans and applicable state and local land use plans and programs. Submit as "Attachment 21.4.A".
See Attachment 21.4.A
- 21.5 Attach copies of the comments concerning the proposed postmining land use from legal or equitable owner of record of the surface area to be affected. Also, attach any comments from federal, state, and local government agencies which would have to initiate, implement, approve, or authorize the proposed land use following reclamation. Submit as "Attachment 21.5.A, 21.5.B" etc.
See Attachment 21.5.A
- 21.6 Indicate existing land uses within the proposed permit area:

<input checked="" type="checkbox"/> Forestland (40) <u>95.52</u> ac.	<input type="checkbox"/> Developed Water Resources (53) _____ ac.
<input type="checkbox"/> Pastureland (20) _____ ac.	<input type="checkbox"/> Residential (11) _____ ac.
<input type="checkbox"/> Cropland (21) _____ ac.	<input type="checkbox"/> Industrial/Commercial (13) _____ ac.
<input type="checkbox"/> Fish and Wildlife (01) _____ ac.	<input type="checkbox"/> Undeveloped (60) _____ ac.
<input type="checkbox"/> Recreation (02) _____ ac.	
<input type="checkbox"/> Mined Lands (30) <u>97.72</u> ac.	

Clearly delineate on the Environmental Resources Map, the boundaries of each land use checked above.

- 21.7 If active coal mining is being conducted within the proposed permit area or if previous mining has been conducted within the proposed permit area, provide the following information: If not applicable, check here .

<u>Premining Land Use(s)</u>	<u>Acres</u>
<u>Unmanaged Forestland</u>	<u>97.72</u>
_____	_____
_____	_____

- 21.8 If any land use (other than mining) has been in existence less than five years prior to the date of this application, describe the historic land use. Submit this description as "Attachment 21.8.A". If not applicable, check here .
- 21.9 If previous mining has occurred within the proposed permit area, describe the type of mining used, coal seam or other strata mined, area extent of such mining, and approximate dates of the disturbances. Submit as "Attachment 21.9.A". All areas of prior disturbance shall be shown on the MRP Map. If not applicable, check here .
- See Attachment 21.9.A.**

ATTACHMENT 21.2.A

ESTIMATE OF POTENTIAL PRODUCTIVITY

As the pre-mine land use of the site is Forestry, the productivity and average yield of the area will be discussed as woodland. The following information was obtained from the Soil Conservation Service in the "Soil Survey of Bell and Harlan Counties, Kentucky", December 1992.

We present the following discussion concerning Woodland Management and Productivity.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site. Elevation and aspect are of particular importance in mountainous areas.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to landslides and erosion after roads are built and timber is harvested. Table 8 summarizes the forestry information and rates the soils for a number of factors to be considered in management. Slight, moderate, and severe are used to indicate the degree of the major soil limitations to be considered in forest management.

Ratings of the erosion hazard indicate the probability that damage may occur if site preparation of harvesting activities expose the soil. The risk is slight if no particular preventive measures are needed under ordinary conditions; moderate if erosion-control measures are needed for particular silvicultural activities; and severe if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or

ATTACHMENT 21.2.A

severe indicate the need for construction of higher standard roads, additional maintenance roads, additional care in planning harvesting and reforestation activities, or the use of special equipment.

Ratings of equipment limitation indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, or susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is slight if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is moderate if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. The rating is severe if slopes are so steep that tracked equipment cannot be operated safely across the slopes, if wetness restricts equipment use of more than 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of seedling mortality refer to the probability of the death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall, as influenced by kinds of soil or topographic features. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the

ATTACHMENT 21.2.A

period when the water table is high, rock fragments in the surface layer, rooting depth, and the aspect of the slope. The mortality rate generally is highest on soils that have a sandy or clayey surface layer. The risk is slight if, after site preparation, expected mortality is less than 25 percent; moderate if expected mortality is between 25 and 50 percent; and severe if expected mortality exceeds 50 percent. Rating of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of plant competition indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is slight if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is moderate if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is severe if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The potential productivity of common trees on a soil is expressed as a site index and a volume number. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate. The first tree listed for

ATTACHMENT 21.2.A

each soil is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

The site index is determined by taking height measurements and determining the age of selected trees within stands of given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The site indices in table 8 are based on regional studies.

The volume is the yield likely to be produced by the most important trees expressed in cubic feet per acre per year calculated at the age of culmination of mean annual increment.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), and personal preference are three factors among many that can influence the choice of trees for use in reforestation.

Bell and Harlan Counties are in the mixed mesophytic forest region of the eastern deciduous forest. Steep mountain slopes make up about 90 percent of the survey area and, except for areas recently surface mined for coal, are forested. Maple, beech, yellow poplar, oak, and hickory are the dominant tree species.

Much of the forest land is owned by large corporations, which are primarily interested in the coal resources. Some of the forest land is in small private holdings. The Kentucky Ridge State Forest and the Kentenia State Forest, which make up a total of about 16,000 acres, are managed for multiple uses. Almost 16,000 acres of forest land is in the Cumberland Gap National Historical Park, Kingdom Come State Park, and Pine

ATTACHMENT 21.2.A

Mountain State Park. Other forest land owned by state, federal, and local agencies makes up about 4,000 acres. Most of the publicly owned forest land is in the Helechawa-Alticrest-Varilla general soil map unit. Currently, three large sawmills operate in the survey area. Tree products, such as rough-sawn boards, mine props, shims, and blocking, are cut at several small mills. Mine props and fuel wood are cut by many landowners. Markets are insufficient for much of the low-quality hardwood.

FOREST SPECIES

The presettlement forest of the survey area was a mixed mesophytic deciduous forest, which flourished particularly in the higher mountains, in regard to number of tree species, size of trees, and variety of forest types. In the present-day mixed mesophytic forest association, several species generally are in a stand of trees. The most common species are sugar maple, yellow poplar, black locust, yellow buckeye, and basswood. Other species are northern red oak, red maple, white oak, chestnut oak, cucumbertree, American beech, eastern hemlock, black cherry, birch, magnolia, and hickory. The mixed mesophytic forest covers almost all of the Highsplint-Cloverlick-Guyandotte general soil map unit. It is on cool slopes and in coves.

Oak forests are in the drier areas, such as the south-and west-facing sides of mountains and the tops of mountains. The most common species are chestnut oak, scarlet oak, white oak, red maple, blackgum, and hickory. Oak-pine forests on Pine and Cumberland Mountains are also in the drier areas. Pitch pine, Virginia pine, and shortleaf pine are mixed with the oaks.

ATTACHMENT 21.2.A

SOIL AND TREE RELATIONSHIPS

A knowledge of soils helps to provide a basic understanding of the distribution of tree species on the landscape and tree growth. Some of these relationships are readily recognized. For example, yellow poplar grow well on deep or very deep, moist soils and scarlet oak or pine is common where the rooting depth is restricted or the moisture supply is limited. The soil serves as a reservoir for moisture, provides an anchor for roots, and supplies most of the available nutrients. Soil properties that directly or indirectly affect these growth requirements include organic matter content, reaction, fertility, drainage, texture, structure, depth, and landscape position. Elevation and aspect are of particular importance in mountainous areas. The available water capacity is primarily influenced by texture, organic matter content, rooting depth, and content of rock fragments. In the survey area, available water capacity is a limitation affecting tree growth only in the shallow soils, such as Totz soils, because of the fairly even and abundant summer rainfall. Changing the physical limitations of the soils is difficult, but timber stand improvement and thinning are useful in management.

All of the soils in the survey area, except for the shallowest ones, provide an adequate anchor for tree roots. The susceptibility to windthrow, or the uprooting of trees by the wind, is not a major management concern on most soils.

The available supply of nutrients affects tree growth. Mineral horizons in the soil are important. Mineralization of the humus releases nitrogen and other nutrients to plants. Calcium, magnesium, and potassium are held within the humus. Very small amounts of these nutrients are made available by the weathering of clay and silt particles. Most of the soils in the uplands have been leached and have only small amounts of nutrients below the surface layer. Where the surface layer is thin, as in Shelocta and Gilpin soils, careful

ATTACHMENT 21.2.A

management is needed during site preparation to ensure that the surface layer is not removed or degraded. The living plant community is part of the nutrient reservoir. The decomposition of leaves, stems, and other organic material recycles the nutrients that have accumulated in the forest ecosystem. Fire, excessive trampling by livestock, and erosion can result in the loss of these nutrients. Forest management should include prevention of wildfires and protection from overgrazing. Aspect and landscape position influence the amount of available sunlight, air drainage, soil temperature, and moisture retention. North- and east-facing slopes, or cool slopes, are better suited to tree growth than south- and west-facing slopes, or that is thicker and has more humus and clay than that of the soils on warm slopes. Examples of soils on cool slopes are Cloverlick, Cutshin, Guyandotte, and Kimper. These soils have a slightly higher capacity hold water and a much higher capacity to hold nutrients than the soils on warm slopes. The mean annual soil temperature is about 2 degrees F lower on the cool slopes. The difference in temperature is most prevalent during the dormant season. Because less sunlight falls on the canopy in areas of the cool slopes, the air temperature in the canopy and the transpiration rate are lower and less water is needed.

Soils on the lower slopes may receive additional water because of internal waterflow. On the very steep uplands, much of the water movement during periods of saturation occurs as lateral flow within the subsoil.

Soil and air temperatures are lower on the upper slopes than on the lower slopes. The temperature decreases is about 1 degree F per 550-foot change in elevation. The soils at the base of warm slopes and the soils on the adjacent cool slopes are similar, probably because of the shading effect of the ridge and possibly because of air drainage. These similar soils are mapped together. Nutrients, water, and landscape position largely

ATTACHMENT 21.2.A

determine which tree species grows on a particular soil. For example, sugar maple-basswood forest is on soils that have the highest fertility levels and high moisture content. Beech grows on soils that have high moisture content and intermediate fertility levels. Chestnut oak-red maple forest is on soils that have low fertility levels and low moisture content. Scarlet oak-pine forest is on soils that have very low fertility levels and a very low moisture content.

ATTACHMENT 21.3.A

EXISTING ADJACENT LAND USES

The existing uses of the land adjacent to this mining area consist of second growth forestland and mined lands. The mined lands are in a reclamation stage and the second growth forestland is areas that were once cut for timber but have since reforested.

There are no local land use classifications of the proposed permit area. The area to be disturbed is a second growth forestland.

ATTACHMENT 21.4.A

The plans for establishing the post-mining land use of Unmanaged Forestland are consistent with the wishes of the landowners and are compatible with adjacent land uses. Surrounding lands are a combination of forestland and other Wildlife Habitats. The proposed uses do not conflict with any local, state or federal land use policy or plan and do not require approval by any local, federal or land management agency.

ATTACHMENT 21.5.A

The following page, Certified Mail Receipt, is a true and accurate copy of the original.

Notary Public: *D. E. Cochell*

State in which commissioned: *Kentucky*

My commission expires: *2-13-10*

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Wes Seleckman
MOLPUS Timber Management
P.O. Box 1898
Richmond, VA 40476

* Appolo Fuels 807-0365/
Strata Mining 807-0306 Am. I
Post-Mining Landuse Comments

2. Article Number
(Transfer from service label)

PS Form 3811, February 2004

COMPLETE THIS SECTION ON DELIVERY

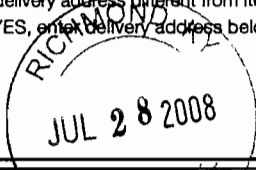
A. Signature
 [Signature] Agent
 Addressee

B. Received by (Printed Name) *Barbara Gravitt* C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes



7007 1490 0004 0283 0876

Domestic Return Receipt

102595-02-M-1540

ATTACHMENT 21.9.A

Previous pre-law and post-law mining Jellico, Stray, Poplar Lick, Sterling, Buckeye Springs, Hignite and Red Springs coal beds has occurred sporadically within the area of proposed permit boundary. The mining has included both auger and surface extraction methods. An abandoned pre-law Jellico seam deep mine is within and in the vicinity of the proposed permit area. The extent of the underground mining of the Jellico seam is shown on the MRP map.

21.10 Indicate the proposed postmining land use(s) of the permit area:

<input checked="" type="checkbox"/> Forestland (40) <u>193.24</u> ac.	<input type="checkbox"/> Developed Water Resources (53) _____ ac.
<input type="checkbox"/> Pastureland (20) _____ ac.	<input type="checkbox"/> Residential (11) _____ ac.
<input type="checkbox"/> Cropland (21) _____ ac.	<input type="checkbox"/> Industrial/Commercial (13) _____ ac.
<input type="checkbox"/> Fish and Wildlife (01) _____ ac.	<input type="checkbox"/> Undeveloped (60) _____ ac.
<input type="checkbox"/> Recreation (02) _____ ac.	
<input type="checkbox"/> Mined Lands (30) _____ ac.	

* - Includes 31.36 acres of permanent roads

21.11 Describe how the proposed postmining land use(s) will be achieved and identify any necessary support or management activities which will be used. Submit as "Attachment 21.11.A".

See Attachment 21.11.A.

21.12 If the proposed postmining land use(s) represent a change from the existing or premining land use(s), provide the following information:

- (a) A discussion of the feasibility, i.e. Suitability, capability, cost effectiveness of the proposed postmining land use(s). Submit as "Attachment 21.12.A".
- (b) A schedule for achieving the proposed postmining land use(s). Submit as "Attachment 21.12.B".
- (c) A discussion of how the proposed postmining land use(s) will be achieved within a reasonable time frame. Submit as "Attachment 21.12.C".
- (d) A separate map showing the proposed postmining land use(s). Submit as "Attachment 21.12.D".

If section 21.12 is not applicable, check here .

22. Vegetation Information

22.1 Provide as "Attachment 22.1.A", a map and narrative description of the existing vegetative types and plant communities within the proposed permit and any proposed reference area. This description shall include adequate information to predict the potential success for re-establishing vegetation on the proposed permit area.

See Attachment 22.1.A

APPOLO FUELS, INC.
Application No. 807-0365 NW
June 24, 2008

Application Item 21.11: Fish and Wildlife Enhancement Plan

Based on the Division's environmental review, it has been determined that, as long as the PMLU is designated as "forest," the application **will not** require a fish and wildlife enhancement plan, as specified in 405 KAR 8:303/040, Section 36(1).

ATTACHMENT 21.11.A

Achieving the Post Mining Land Use

Upon completion of all coal-mining activities, the support activities, all non-permanent facilities will be removed. Any and all disturbed areas will be graded to drain and vegetate with a variety of grasses, legumes and trees identified in the chart in item 22.2. Final grade will be established by minimizing tractor traffic, which minimizes compaction that will maximize the site's quality as forest area. Grading will be conducted to minimize compaction but to insure stability, as much organic debris will remain, an occasional small depression, hill, gully, mound, rock or rock pile or woody debris will remain in order to establish a more diverse native forest area.

The proposed post-mining land use of Unmanaged Forestland will be achieved by planting the variety of vegetation listed in item 22.2 of this application. Additional plantings will be made as necessary to insure that the site has an adequate stand of forage material. Much natural reforestation will occur on the permit area because of its close proximity to other heavily forested areas. All areas adjacent to the permit area currently support many vegetative species.

The revegetation plans proposed for this area is highly suitable for populations of white-tailed deer, and may also attract other species including ruffed grouse and some small furbearers and non-game birds. Although it is anticipated that the ponds located within the permit boundary will be removed in the future, the adjacent areas contain perennial streams with significant flow that will provide a water source for wildlife. Most of the animal species mentioned above do not require a daily source of open water; dew and succulent plants can easily provide their water requirements.

ATTACHMENT 21.11.A

In order to attract and maintain deer populations, an area must provide adequate food sources. Deer feed on a variety of fruits, mast and fungi, browse on woody material, and graze grasses and forbs. The area described in this application and the heavily-forested adjacent areas will provide sources of all these vegetative species. Adequate mast is provided by various types of oak, beech and hickory trees, all of which will be found within or adjacent to the permit area.

Fruit sources are provided by other various tree and shrub species, including dogwood and autumn olives. Browse material is provided by various species of pine, maple, poplar and locust trees. As with the mast sources, these species will be found within or adjacent to the permit area. It should be noted that during the backfilling process, techniques from RAM #124 will be implemented to provide the necessary rooting medium where trees will be planted. RAM #124 has been included with this attachment.

There will be grassy areas within the permit boundary that contain grasses and forbs that can provide grazing material for the deer. These species include ladino clover and orchard grass. These same species provide forage and cover material for other wildlife species.

ATTACHMENT 21.12.A

Post-Mine Land Use

A

If there were no mining activity proposed on this site, it would not be economically feasible to convert the land use to Fish and Wildlife Habitat. The cost to hire equipment and men to clear the area and construct the fresh water impoundments and revegetate the site with the proper species of grasses, legumes, and trees would be prohibitive. However, since the land is to be disturbed for other reasons, it is practical to convert the land to a more usable condition at this time.

The area that will be mined as a part of this application will be well suited to wildlife enhancement. The relatively steep grades within the proposed permit area and the existing soil conditions will not impede or prohibit the implementation of the proposed post-mining land use.

As detailed in Attachment 21.5.A, implementation of this proposed post-mining land use will not require the approval of any local government or land use planning agencies. The plans to restore this area to a post-mining land use of wildlife habitat will make this area compatible with the adjacent land uses. In order to implement or maintain this post-mining land use no public funds or facilities or zoning changes will be necessary to ensure its success. This proposed post-mining land use would not pose any threat to public health or safety or pose any threat to the environment. This proposed post-mining land use will not involve unreasonable delays in reclamation.

ATTACHMENT 21.12.A

B

Within two (2) years after mining is completed on this site, adequate grasses with the required ground cover will be established to support the proposed post-mining land use. After mining is completed, the numbers and types of trees and shrubs detailed in item 22.2 will be planted. Additional plantings will be made as required such that the numbers and types of trees and shrubs established on the job site approximate the numbers proposed in the reclamation plan within three (3) years after mining has been completed. Also, within this two (2) year period after mining activity has been completed there will be adequate numbers of trees and shrubs on the reclaimed mine site as detailed in Item 22.2 of this application. Within three (3) years after the mining activity has been completed, the entire site will be able to support the proposed post-mining land use.

C

After this proposed mine site is mined and reclaimed the site will be revegetated with the variety of grasses, legumes, shrubs and trees detailed in Item 22.2. The grasses and legumes were chosen to provide quick cover to prevent excessive erosion. These species were chosen based on their value to provide food and cover for wildlife in the area.

D

We have provided in Attachment 22.4.A a drawing that details the planting method, which will be used to implement the proposed post-mining land use of Fish and Wildlife Habitat.

ATTACHMENT 22.1.A

As the pre-mining land use of the site was forestland, the areas immediately adjacent to the site are still forestland except for areas of active mining and areas that have been mined and are abandoned.

A "Vegetation Analysis Survey" using procedures and techniques described in "Vegetation Analysis Survey" by Dr. Pierre A. Allaire, December 1982, has been performed to provide the information required for this section. A walk-thru of the area adjacent to the proposed permit area has determined that the following habitat types exist within the proposed permit area : Upland Forest and Abandoned Mine Land.

UPLAND FOREST - To be designated on maps as UF. For the purpose of definition, a forest is a block of wooded vegetation, with dominant species present being greater than 4 inches in diameter at chest height (dbh) (4.5ft above ground level) and comprised of an area less than 17 acres, it is considered to be a woodlot.

Upland forest is designated primarily by relative elevation - not specific elevations, and generally lies above the flood plain or river bottomland. This designation is unique to a particular drainage and is not a specific figure.

ABANDONED MINE LAND - To be designated on maps as AML.

A description of the plant types found within each habitat type follows:

HABITAT TYPE - UF

<u>Species</u>	<u>Stratum Rank</u>
Southern Red Oak (Quercus Falcata)	SR-6
Shagbark Hickory (Carya Ovata)	SR-3
Eastern White Pine (Pinus Strobus)	SR-4
Beech (Fagus Grandifolia)	SR-1
Yellow Poplar (Liriodendron Tulipifera)	SR-7
Dogwood (Cornus Florida)	SR-2
Holly (Ilex Opaca)	SR-1
Greenbriar (Smilax App.)	SR-3
Laurel (Kalmia Latifolia)	SR-4

ATTACHMENT 22.1.A

HABITAT TYPE - AML

Species

Fescue (Festuca)

Lespedeza (Lespedeza)

Stratum Rank

SR-9

SR-2

22.2 Complete the following table to describe the plan for revegetating the proposed permit area. If additional pages are necessary, identify as "Item 22.2 continued".

Proposed Postmining Land Use <u>Unmanaged Forestland</u>	Rate per Acre	Acreage	Planting Dates
Permanent Grass: (choose at least 2) Timothy Orchard grass Red-top Perennial rye	5 lb 5 lb 3 lb 5 lb	193.24*	02/15-05/15 and 08/15-10/15
Legumes: (choose at least 2) Birdsfoot trefoil Ladino clover Kobe/Korean Lespedeza	3-5 lb	193.24*	02/15-05/15 and 08/15-10/15
Trees: Black Locust/White Pine Silver Maple White Ash White Oak	50 stems 100 stems 100 stems 100 stems	193.24*	02/15-05/15 and 08/15-10/15
Temporary Plants: Annual rye	4 lb	193.24*	Anytime
Mulch: Straw or Hay	1.5 Tons	193.24*	As Needed
Small Grains:			

* = 31.36 acres of permanent road included in reclamation acreage.

- 22.3 Are alternate soil stabilizers in lieu of mulch being requested?
 YES NO. If "YES", justify this proposal, identify acreage for which this variance is requested and describe the nature of the soil stabilizer. Provide as "Attachment 23.3.A".
- 22.4 Provide as "Attachment 22.4.A", detailed description of:
- (a) The methods to be used in planting, seeding and mulching, including irrigation, pest and disease control measures.
 - (b) The measures to be used to determine the success of revegetation as required by 405 KAR 16:200 and 405 KAR 18:200.
 - (c) The soil testing plan for evaluating the results of topsoil handling and reclamation procedures related to revegetation.
- See Attachment 22.4.A.**

ATTACHMENT 22.4.A-C

Revegetation Information

A

As the surface mining activity proposed in this application is completed, final grade will be established on the backfilled areas of the mine bench. The site will be backfilled with spoil from the mine bench to complete reclamation of the mine site. The areas mined as a part of this application will be backfilled with all reasonably available spoil material eliminating as much of the highwall as technically possible. Alternate topsoil material will be the final layer of spoil material. The alternate topsoil will be spread over the site in uniform thickness and care will be taken to prevent unnecessary compaction of the alternate topsoil. The alternate topsoil will be scarified prior to the area being revegetated with a variety of species.

The following methods to be implemented in regards to growth medium for trees and shrubs are recommended by D.S.M.R.E's RAM #124:

The best available growth medium on the permit area should be placed on the surface to depth of at least four feet, thus accommodation the needs of deeply rooted trees. Growth media with low to moderate levels of soluble salts, an Equilibrium pH of 5.0 to 7.0, low pyritic sulfur content, and texture conducive to proper drainage are preferred. However, for those sites where the best available material varies from the above recommendation, an equilibrium pH as low as 4.5 or as high as 8.0 is acceptable, so long as species tolerant of those conditions are selected and utilized. Seed mixtures to be used for revegetation are described in Item 22.2. These seed mixtures will contain one annual or short-lived perennial species for quick cover and erosion control and black locust seeds. The mixture will also contain long-lived perennial legumes and grasses for permanent cover. These perennial species will replace the annual plants as they die out. The perennial legumes are nitrogen fixers and help to eliminate the need to

ATTACHMENT 22.4.A-C

refertilize the area with additional nitrogen. All seed to be used during reclamation will be pre-inoculated prior to purchase. The preferable time of year for this phase of revegetation would be early spring or early fall.

Seed mixtures will be applied using the direct seeding method. A hydroseeder may be utilized in the seeding process. The hydroseeder will be loaded with enough seed and water to cover one acre at a time to ensure proper coverage of the area to be reclaimed. In addition to the fertilizer to be mixed with the seed/water mixture, hydrated or agricultural lime will be added to prevent killing the inoculating bacterium in the seed. After the area has been seeded, the area will be mulched. The mulch material on the areas of 10% or greater will consist of straw or hay which will be applied at a rate of 1.5 tons per acre. This mulch material will be applied by hand or by a device that chops and blows the material into place. Alternate mulch that may be used is wood fiber that would be applied at a rate of 1,000 lbs. per acre and may be applied by using a hydroseeder.

B

The referenced methods as outlined in TRM#21 which references the administrative regulations 405 KAR 16:200 and 18:200 relating to revegetation of mine sites. This information shall be utilized to determine the success of revegetation as compared to the following standards. Areas planted only in herbaceous species shall sustain a vegetative ground cover of 80% (with 90% statistical confidence) for the last 3 years of the 5-year liability period. Also, areas planted with a mixture of herbaceous and woody species shall sustain an herbaceous ground cover of at least eighty (80) percent with a statistical confidence of ninety (90) percent, with no sign of significant erosion as set forth in 405 KAR 16:190, Sect. 6. Each species of woody plant shall be at least 300 plants per acre, four (4) species of trees including one (1) hard mast, three (3)

ATTACHMENT 22.4.A-C

exfoliating bark species, 100 stems from pep list soft mast or shrub specie shall be present. Stocking densities of these species shall be at 450 spa of exfoliating bark species, with one being hard mast plus an additional 100 stems from the list or volunteers. Stocking density shall be determined with a statistical confidence of ninety percent (90%) and shall achieve 250spa @ bond release. Tree seedling survival shall be enhanced by planting seedlings during the first possible planting season following seeding of the grass species listed in Item 22.2. Stocking density of woody plants shall be at least 300 plants per acre. tree seedling survival shall be enhanced by planting seedlings during the first possible planting season following seeding of the grass species listed in Item 22.2. Tree seedlings will be planted using a dibble bar or mattock. Woody species shall be planted in a random pattern as shown on the attached planting pattern drawing. No more than 50 stems/acre will be black locust and no species will comprise less than twenty (20) percent of the total.

C

As detailed in Attachment 23.1.A of this application, alternate topsoil material would be placed at the sites indicated on the Mining and Reclamation Plan Map. This alternate topsoil material would be a blending of all salvaged topsoil and other suitable materials generated during the mining operation. After mining activity has been completed, alternate topsoil will be recovered from the storage area and will be redistributed over the mine site prior to revegetation of the site. Sixty (60) days prior to the completion of mining, the alternate topsoil will be tested again to determine what nutrients should be applied to the redistributed topsoil.

ATTACHMENT 22.4.A-C

Soil sampling would be conducted in general accordance with the procedures outlined in U.S. AGR-41 "Sampling Surface Mine Lands Before and After Mining" by Evangelou and Barnhisel. Soil testing would be conducted by an independent laboratory using the methods outlined in "Field and Laboratory Methods Applicable to Overburdens and Minesoils", by A.A. Sobek et al March 1978. (EPA report 600/2-78-054.)

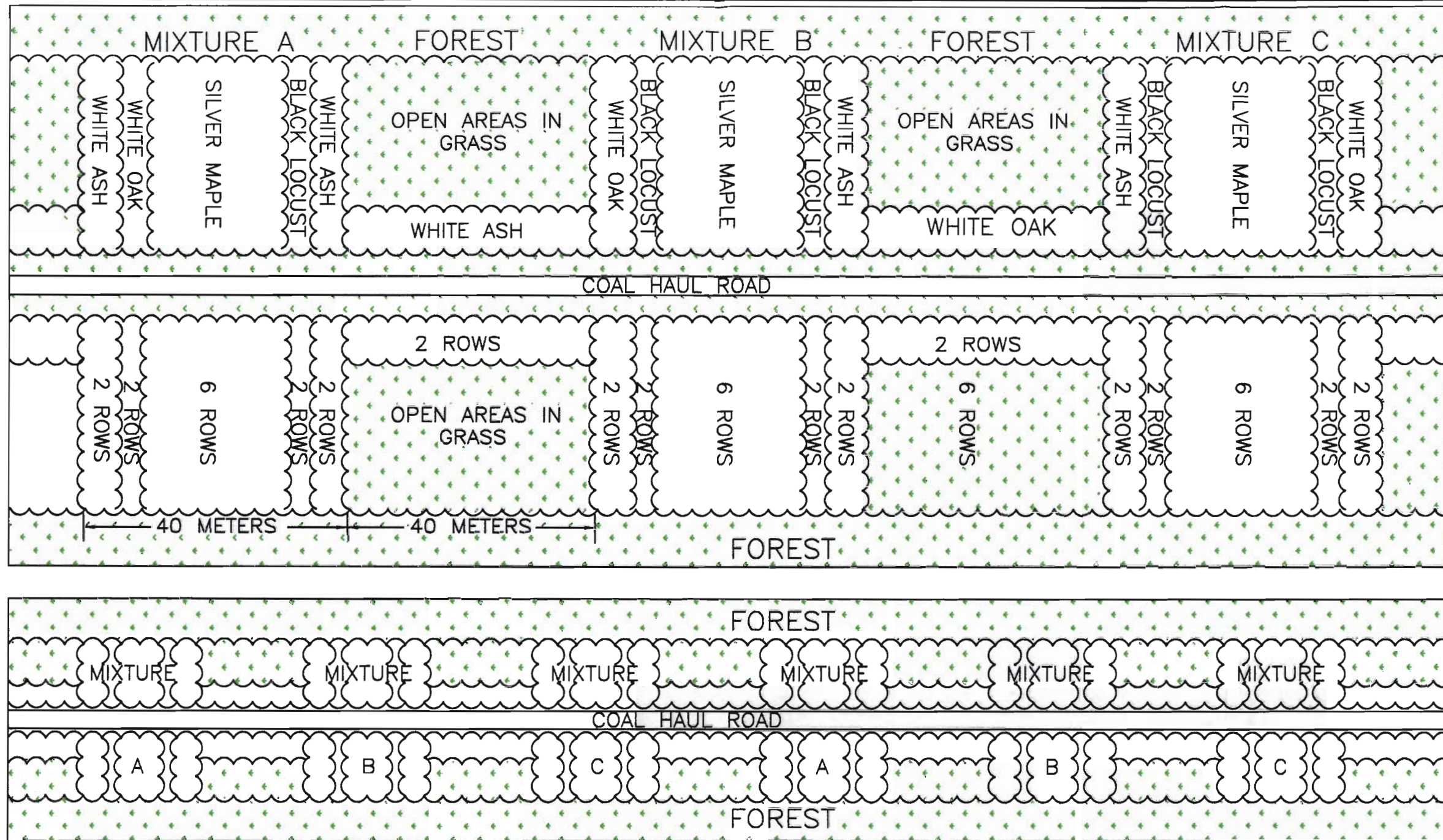
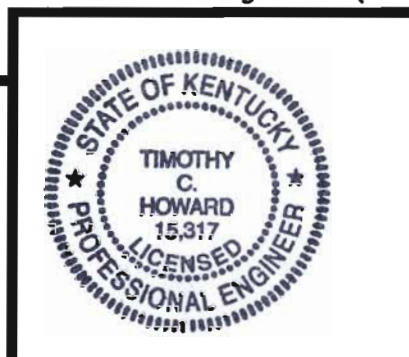


Figure 1. The schematic above shows the planting arrangement of wildlife food and cover plants along a hypothetical surface mine. The planting design provides habitat diversity on the mine and distributes food and cover uniformly over the site. Tree and shrub rows are spaced four steps apart, while plants within rows are three steps apart. Sequence of mixtures along the mine is shown in the lower diagram (from Fowler and Turner 1981).

I, Timothy C. Howard, P.E. No. 15,317
 Date: 8/13/08
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
 Permit #807-0365
 Typical Planting Pattern
 Attachment 22.4.A
 Scale: None
 Page No. 1 of 1
 Prepared by
Howard Engineering & Geology, Inc.

23. Soil Resources Information

- 23.1 Is soil survey information for the proposed permit area available from the U.S. Soil Conservation Service? YES [] NO. If "YES", use the appropriate information to provide a description of existing soils that will be disturbed within the proposed permit area.
See Attachment 23.1.A.
- 23.2 Does the applicant propose to use selected overburden materials as a supplement or substitute for topsoil? YES [] NO. IF "YES", provide the following information:
- (a) A geologic cross section of the proposed permit area identifying the proposed alternate material(s) to be used. Submit as "Attachment 23.2.A".
See Attachment 23.2.A.
 - (b) The results of chemical and physical analyses of the existing soils and the proposed alternate materials conducted in accordance with 405 KAR 16:050. Submit as "Attachment 23.2.B".
See Attachment 23.2.B
 - (c) Certification by a qualified soil scientist or agronomist that the alternate material is equal to, or more suitable than, the existing topsoil. Submit as "Attachment 23.2.C".
See Attachment 23.2.C.
- 23.3 Describe, as "Attachment 23.3.A", how topsoil or alternate topsoil materials will be removed, stored, stabilized, protected, and redistributed in the proposed permit area. Indicate on the MRP Map where topsoil and/or alternate topsoil stockpiles will be located.
See Attachment 23.3.A.

24. Surface Blasting Plan

- 24.1 Is surface blasting proposed for the permit area? YES [] NO.
- 24.2 Will blasting be conducted within 1000' of any building used as a dwelling, public building, school, church, commercial, community, or institutional building? YES [] NO. If "YES", submit as "Attachment 24.2.A", an anticipated blast design prepared and signed by a certified blaster with this application, or at a time prior to the blasting operation. If the design will be submitted after permit issuance, the design shall be provided thirty days prior to the anticipated blasting and such blasting may not be initiated until DSMRE approval is obtained.
See Attachment 24.2.A
- 24.3 Will blasting be conducted within 500' of an active or abandoned underground mine? YES [] NO. If "YES", attach the appropriate MSHA Blasting Approval Form as "Attachment 24.3.A".
See Attachment 24.3.A.
- 24.4 Describe in "Attachment 24.4.A", the blast warning, all-clear signals and site access control procedures to be used. Also, describe how all persons within one-half mile of the areas affected by surface operations or facilities will be notified of the meaning of the blast signals.
See Attachment 24.4.A.

ATTACHMENT 23.1.A

As part of this attachment we will identify and describe the general soil map units which are located within the permit area described in this application. Information provided in this attachment was obtained from the Soil Conservation Service in the "Soil Survey of Bell and Harlan Counties, Kentucky", issued December, 1992.

The soil types located in the proposed permit area are the Shelocta-Kimper-Cutshin complex, the Highsplint-Cloverlick-Guyandotte complex, the Cloverlick-Guyandotte-Highsplint complex, and the Fairpoint and Bethesda soils. A description of these soils is as follows:

SmF-Shelocta-Kimper-Cutshin complex, 20 to 55 percent slopes, very stony.

These deep and very deep, well drained, steep and very steep slopes are on ridgetops, mountain crests, and the upper side slopes in the mountains. In most areas the elevations range from about 2,500 to 3,500 feet and are about 1,000 to 2,000 feet above the valley floor. The higher elevations have more snow and ice during the winter than the lower elevations and may receive more rainfall during the summer. Knolls and gaps are along the crest of the ridges. Steep-sided ravines near the head of drainageways incise the ridges. In places all that remains of the ridge is a sharp-crested ridgeline. Stones and boulders cover about 0.1 to 15.0 percent of the surface. Most areas are long and narrow and range from 40 to 1,600 acres in size.

In a typical area the composition is as follows: Shelocta and similar soils-35 percent; Kimper and similar soils-25 percent; Cutshin and similar soils-15 percent; and contrasting inclusions-25 percent. The Shelocta soil is throughout this map unit. Most areas of the Cutshin and Kimper soils are on North- and eastfacing slopes and at the head of drainageways. In places, they are on the summits. The soils in this unit occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Typically, the Shelocta soil has a surface layer of silt loam about 8 inches thick. The upper part of this layer is dark grayish brown, and the lower part is yellowish brown. The subsoil is yellowish brown channery silt loam about 47 inches thick. Siltstone bedrock is at a depth of about 55 inches. In some areas the subsoil contains 35 to 50 percent rock

ATTACHMENT 23.1.A

fragments. In a few areas the surface layer has a higher content of clay.

Typically, the Kimper soil has a surface layer of gravelly silt loam about 7 inches thick. The upper part of this layer is very dark grayish brown, and the lower part is dark yellowish brown. The subsoil is about 41 inches thick. It is yellowish brown. It is gravelly silty loam in the lower part. The substratum is yellowish brown and strong brown channery silt loam about 14 inches thick. Shale bedrock is at a depth of about 62 inches. In some areas the subsoil contains 35 to 50 percent rock fragments. In a few areas the surface layer has a higher content of clay.

Typically, the Cutshin soil has a surface layer of very dark gray silt loam about 9 inches thick. The subsurface layer is dark brown silt loam about 8 inches thick. The upper part of the subsoil is yellowish brown silt loam. The next part is yellowish brown gravelly loam. The lower part to a depth of about 60 inches is yellowish brown very gravelly loam. In some areas the subsoil contains 35 to 50 percent rock fragments. In a few areas the surface layer has a higher content of clay.

These soils are low in natural fertility. The organic matter content is moderate in the Shelocta soil and high in the Kimper and Cutshin soils. The available water capacity is high. Permeability is moderate in all three soils. The number of roots decreases gradually with increasing depth, and there are few roots below a depth of about 18 inches. The depth to bedrock is 40 inches or more in the Cutshin soil and 48 inches or more in the Kimper and Shelocta soils.

Included in this map unit are small areas of shallow or moderately deep, loamy soils. These soils are dominantly on convex spurs but occur throughout the unit. They make up about 18 percent of the unit. Also included, on ledges or cliffs, are areas of rock outcrop, which make up about 2 percent of the unit.

Most areas are used as woodland. These soils are suited to trees. Productivity is moderate. In an average stand that is fully stocked, northern red oak on the Shelocta soil can reach a height of 65 feet in 50 years. A similar stand on the Kimper and Cutshin soils can reach a height of 70 to 75 feet. Some of the more common tree species are northern red oak, chestnut oak, sugar maple, red maple, and black cherry. In some areas these species are mixed with birches, black locust, cucumbertree,

ATTACHMENT 23.1.A

American basswood, yellow buckeye, various hickories, and numerous species of minor extent. The most common understory plants are mountain laurel, sassafras, azalea, buffalo nut, American hornbeam, striped maple, vaccinium, hydrangea, and greenbrier and, in places, American chestnut. The herbaceous flora is luxuriant to sparse and includes numerous species.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Erosion is a hazard along haul roads and skid trails. This hazard can be reduced by establishing a grade of less than 10 percent along the roads and trails and by limiting the area of surface disturbance to 10 percent or less. Permanent access roads can be protected by water breaks, culverts, and gravel. Because of the slope, crawler tractors or other specialized equipment generally is needed. Logs can be yarded to roads and trails built on the contour. Trees can be planted by hand or by direct seeding methods. Plant competition can be a problem because site conditions favor the growth of competing plants. A new forest crop can be established by managing the existing stand and by applying herbicides or cutting. Table 8 gives additional information about woodland management and productivity.

The potential for woodland wildlife habitat is good. The habitat can be maintained or improved by providing food, cover, nesting areas, and den sites. Brushy thickets can be established along logging roads and trails. The habitat in areas of native plants can be improved by disking and applying fertilizer. Den trees should not be harvested. Brush piles or other nesting sites are needed.

These soils generally are unsuitable for cultivated crops, pasture, and building site development because of the slope.

HsF-Highsplint-Cloverlick-Guyandotte complex, 35 to 75 percent slopes, very stoney. These deep and very deep, well drained very steep soils are on the south-and west-facing sides of mountains. The elevations range from about 3,000 feet near the mountain crest to 1,400 feet along the base of the mountain. The higher elevations have more snow and ice during the winter than the lower elevations and may receive more rainfall during the summer. The downward slope of the mountain is nearly linear, except where broken by small cliffs or benches. Only a slight flattening of the

ATTACHMENT 23.1.A

slopes occurs near the top and bottom of the mountain. Across the mountain the slope is distinctly corrugated. Small streams in the grooves commonly begin near the mountain crest run almost to the base of the mountain before joining other streams. In most places the streams are 300 to 600 feet apart. Areas between the streams are characterized by sharp-crested ribs that have fairly smooth slopes. Stones and boulders generally cover 0.1 to 15.0 percent of the surface, but they cover as much as 70 percent of the surface in some ravines and in areas below cliffs. Most areas are nearly rectangular and range from about 60 to 2,500 acres in size.

In a typical area the composition is as follows: Highplint and similar soils-53 percent; Cloverlick and similar soils-17 percent; Guyandotte and similar soils-10 percent; and contrasting inclusions-20 percent. The soils in this unit occur as areas so closely intermingled that they could not be separated at the scale selected for mapping.

Typically, the Highsplint soil has a surface layer of dark brown very channery silt loam about 4 inches thick. The upper part of the subsoil is yellowish brown very channery silt loam. The next part is yellowish brown very channery silty clay loam. The lower part to a depth of about 60 inches is yellowish brown very channery loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

Typically, the Cloverlick soil has a surface layer of very dark grayish brown very flaggy loam about 5 inches thick. The subsurface layer is brown very flaggy loam about 6 inches thick. The subsoil to a depth of about 60 inches is dark yellowish brown and yellowish brown very flaggy loam. In some areas the subsoil contains 20 to 35 percent rock fragments. In a few areas the surface layer has a higher content of clay.

Typically, the Guyandotte soil has a surface layer of very dark grayish brown extremely flaggy silt loam about 6 inches thick. The subsurface layer is dark brown extremely flaggy silt loam about 7 inches thick. The subsoil to a depth of about 60 inches is dark yellowish brown and yellowish brown extremely flaggy loam. In some areas the subsoil contains 20 to 35 percent rock fragments. In a few areas the surface layer has a higher content of clay.

ATTACHMENT 23.1.A

These soils are low in natural fertility. The organic matter content is moderate in the Highsplint soil and high in the Cloverlick and Guyandotte soils. The available water capacity is moderate in all three soils. Permeability is moderate or moderately rapid. The number of roots decreases gradually with increasing depth, and there are few roots below a depth of about 18 inches. The depth to bedrock is 48 inches or more in the Highsplint and Cloverlick soils and 60 inches or more in the Guyandotte soil.

Included in this map unit are small areas of loamy soils that are less than 30 inches deep over bedrock. These soils make up about 10 percent of the unit. Also included, on ledges or cliffs, are areas of rock outcrop, which make up less than 1 percent of the unit.

Most areas are used as woodland. A few areas adjacent to the stream valleys have been cleared and are used as unimproved pasture.

These soils are suited to trees. Productivity is high. In an average stand that is fully stocked, yellow poplar can reach a height of about 100 feet in 50 years. Under similar conditions, northern red oak can reach a height of 75 feet. Some of the more common tree species in coves and on the lower slopes are sugar maple, yellow poplar, black locust, and northern red oak. In some areas these species are mixed with chestnut oak, red maple, cucumbertree, black cherry, magnolia, birches, and various hickories. Near the base of the mountain, American beech, eastern hemlock, and white oak are common. Many abandoned fields have reverted to nearly pure stands of yellow poplar. Some of the fields have been planted to eastern white pine or other pine species. The most common understory plants are mountain laurel, sourwood, sassafras, azalea, flowering dogwood, American hornbeam, vaccinium, hydrangea, and greenbrier. The herbaceous flora is abundant or luxuriant and includes numerous species.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Erosion is a hazard along haul roads and skid trails. This hazard can be reduced by establishing a grade of less than 10 percent along the roads and trails and by limiting the area of surface disturbance to 10 percent or less. Permanent access roads can be protected by water breaks, culverts, and gravel. Because of the slope, crawler tractors or other specialized equipment generally is

ATTACHMENT 23.1.A

needed. Logs can be yarded to roads and trails built on the contour. Trees can be planted by hand or by direct seeding methods. Plant competition can be a problem because site conditions favor the growth of competing plants. A new forest crop can be established by managing the existing stand and by applying herbicides or cutting.

The potential for woodland habitat is good. The habitat can be maintained or improved by providing food, cover, nesting areas, and den sites. Brushy thickets can be established by clearing small areas in large tracts of mature woodland. Food plots or areas of green browse can be established along logging roads and trails. The habitat in areas of native plants can be improved by disking and applying fertilizer. Den trees should not be harvested. Brush piles or other nesting sites are needed.

These soils are generally unsuitable for cultivated crops, pasture, and building site development because of the slope.

FbF-Fairpoint and Bethesda soils, 20 to 70 percent slopes. These very deep, well drained, steep to very steep soils are on ridges and mountains. Most areas have been surface mined for coal. Some have been altered by highway construction or other extensive earthmoving. The dominant slopes are 20 to 70 percent, but many areas have a narrow bench where the slopes are 0 to 20 percent. Stones and boulders cover about 0.01 to 3.0 percent of the surface in some areas. Most areas are long and narrow or are irregular in shape. They are 10 to 200 acres in size.

In a typical area, about 80 percent of the acreage is the Fairpoint soil, the Bethesda soil, or both and 20 percent is contrasting inclusions. Individual areas of each soil are large enough to be mapped separately. Because of the present and predicted uses, however, the soils were mapped as one unit. Many areas contain both soils, but some contain only one of the soils.

Typically, the Fairpoint soil has a surface layer of dark gray and dark grayish brown very channery silt loam about 11 inches thick. The substratum to a depth of about 60 inches is dark gray and dark grayish brown very channery silt loam. In some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains more clay or more sand.

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Typically, the Bethesda soil has a surface layer of yellowish brown very channery loam about 5 inches thick. The subsurface layer is grayish brown very channery silt loam or extremely channery silt loam. In some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains more clay or more sand.

These soils are low in natural fertility and in organic matter content. Permeability is moderately slow. The available water capacity is moderate. The depth to bedrock is 60 inches or more.

Included in this map unit are small areas of soils that have not been disturbed by surface mining. Also included are shallow, loamy soils in surface-mined areas; ponded or seepy areas; soils that have a pH of 3.0 to 3.6; and rock escarpments, mine dumps, and water. Included areas make up about 20 percent of the unit.

Most areas have been smoothed and seeded to various grasses, legumes, and trees. A few areas were not planted but have reverted to various grasses, forbs, and trees. A few areas are used as pasture.

These soils generally are unsuited to cultivated crops, such as corn and soybeans. The main limitations are the slope and the rock fragments in the surface layer.

These soils are suited to grasses and legumes. They are best suited to forage species that are tolerant of drought and a wide range of acidity. Tall fescue and sericea lespodeza have been grown successfully. In most areas the pH ranges from 4.8 to 6.5, but in places it is low as 3.6 or as high as 7.5. Where a higher pH is desired, lime can be added. Most areas require 2 to 5 tons of lime to raise the pH to about 6.5. The amount to be applied should be based on the results of soil tests and the quality of the lime. The supply of phosphorus generally is very low. This nutrient commonly is needed for successful seeding. Potassium levels generally are low or medium and commonly are adequate for cover mixtures. Other limitations affecting grasses and legumes are the slope, compacted layers, and a high content of rock fragments.

These soils are suited to trees. Productivity is moderate. In an average stand that is fully stocked, loblolly pine on the Fairpoint soil can reach a height of about 74 feet in 50 years. On the Bethesda soil, a similar stand can reach a height of 69 feet.

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The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Seedling mortality is an additional concern on the warm slopes. Erosion is a hazard along logging roads and trails. A protective plant cover is needed. Seeding herbaceous species along with the tree species helps to control erosion. Mulching with straw or processed wood fiber also helps to control erosion. Because of the slope, hand seeding or special seeding equipment may be needed. In many areas the seed, fertilizer, and mulch are applied as a slurry. The tree species suitable for seeding are black locust, eastern white pine, loblolly pine, yellow poplar, and white oak. Table 8 gives additional information about woodland management and productivity.

The potential for openland wildlife habitat is very poor. The habitat can be improved by providing food, cover, water, nesting areas, and den sites. Rows of trees and shrubs can break up large open areas. Mixtures of grasses and legumes can be planted for food and cover. The habitat in areas of native plants can be improved by disking and applying fertilizer. Shallow water areas can be established. Also, seasonal pools can be established in depressions. Brush piles or other nesting sites are needed.

These soils generally are unsuited to urban development because of the slope and the hazards of uneven settling, landslides, and slumps.

CgF-Cloverlick-Guyandotte-Highsplint complex, 35 to 75 percent slopes, very stony. These deep and very deep, well drained soils are on the cool slopes on mountainsides. The elevations range from about 3,000 feet near the mountain crest to 1,400 feet along the base of the mountain. The higher elevations have more snow and ice during the winter than the lower elevations and may receive more rainfall during the summer. The downward slope of the mountain is nearly linear, except where broken by small cliffs or benches. Only a slight flattening of the slope occurs near the top and bottom of the mountain. Across the mountain the slope is distinctly corrugated. Small streams in the grooves commonly begin near the mountain crest and run almost to the base of the mountain before joining other streams. In most Places the streams are about 300 to 600 feet apart. Areas between the streams are characterized by sharp-crested ribs that have fairly smooth slopes. Stones and boulders generally cover about

ATTACHMENT 23.1.A

0.1 to 15.0 percent of the surface. They cover as much as 70 percent of the surface, however, in some ravines and in areas below some cliffs. In places, sandstone layers form cliffs. Most areas are nearly rectangular and range from about 60 to 2,500 acres in size.

In a typical area, the composition of this soil complex is as follows: Cloverlick and similar soils--45 percent; Guyandotte and similar soils--20 percent; Highsplint and similar soils--20 percent; and contrasting inclusions--15 percent. The soils in this unit occur as areas so closely intermingled that they could be separated as the scale selected for mapping.

Typically, the Cloverlick soil has a surface layer of very dark gray gravelly loam about 6 inches thick. The subsoil extends to a depth of about 70 inches. The upper part is brown and yellowish brown gravelly loam, the next part is yellowish brown gravelly loam, and lower part is yellowish brown very flaggy loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

Typically, the Guyandotte soil has a surface layer of very channery loam about 17 inches thick. This layer is very dark grayish brown in the upper part and dark brown in the lower part. The upper part of the subsoil is dark yellowish brown very channery loam. The lower part to a depth of about 61 inches is yellowish brown very channery loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

Typically the Highsplint soil has a surface layer of very dark grayish brown very channery loam about 3 inches thick. The subsoil to a depth of about 60 inches is yellowish brown very channery loam. In some areas the subsoil contains 20 to 35 percent rock fragments.

These soils are low in natural fertility. The organic matter content is high in the Cloverlick and Guyandotte soils and moderate in the Highsplint soil. The available water capacity is moderate in all three soils. The number of roots decreases gradually with increasing depth, and there are few roots below depths of about 18 inches. Permeability is moderate or moderately rapid in the Cloverlick and Guyandotte soils and moderate or moderately rapid in the Highsplint soil. The depth to bedrock is 48 to more than 60 inches in the Cloverlick and Highsplint soils and 60 inches or more in the Guyandotte soil.

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Most areas are used as woodland. A few areas adjacent to the stream valleys have been cleared and are used as unimproved pasture.

The hazard of erosion, the equipment limitation, and plant competition are the major concerns in managing woodland. Erosion is a hazard along haul roads and skid trails. This hazard can be reduced by establishing a grade of less than 10 percent along the roads and trails and by limiting the area of surface disturbance to 10 percent or less. Permanent access roads can be protected by water breaks, culverts, and gravel. Because of slope, crawler tractors or other specialized equipment generally is needed.

The potential for woodland wildlife habitat is good. The habitat can be maintained or improved by providing food, cover, nesting areas, and den sites. Brushy thickets can be established by clearing small areas in large tracts of mature woodland. Food plots or areas of green browse can be established along logging roads and trails. The habitat in areas of native plants can be improved by disking and applying fertilizer. Den trees should not be harvested. Brush piles or other nesting sites are needed. These soils generally are unsuitable for cultivated crops, pasture, and building site development because of the slope. **FbC-Fairpoint and Bethesda soils 2 to 20 percent slopes.** These very deep, well drained, gently sloping to moderately steep soils are on ridges and mountains. Most areas have been surface mined for coal. Highway construction or other extensive earthmoving has altered some. Stones and boulders cover about 0.01 to 3.0 percent of the surface in some areas. Most areas are long and narrow or are irregular in shape. They are 6 to 200 acres in size. In a typical area, about 90 percent of the acreage is the Fairpoint soil, the Bethesda soil, or both and 10 percent is contrasting inclusions. Individual areas of each soil are large enough to be mapped separately. Because of the present and predicted uses, however, the soils were mapped as one unit. Many areas contain both soils, but some contain only one of the soils. Typically, the Fairpoint soil has a surface layer of dark olive gray channery silt loam about 3 inches thick. The subsurface layer is dark olive gray extremely channery silt loam about 7 inches thick. The substratum to a depth of about 60 inches is dark olive gray and olive gray extremely channery silt loam. In some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains

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more clay or more sand. Typically, the Bethesda soil has a surface layer of dark grayish brown very channery loam about 7 inches thick. The subsurface layer is grayish brown very channery silt loam about 5 inches thick. The substratum to a depth of about 60 inches is yellowish brown very channery loam and extremely channery silt loam. In some areas the substratum contains 15 to 35 percent rock fragments. In other areas the surface layer contains more clay or more sand. These soils are low in natural fertility and in organic matter content. Permeability is moderately slow. The available water capacity is moderate. The depth to bedrock is 60 inches or more. Included in this map unit are small areas of soils that have not been disturbed by surface mining. Also included are shallow, loamy soils in surface-mined areas; ponded or seepy areas; soils that have a pH of 3.0 to 3.6; rock escarpments, mine dumps, and water; and some areas where runoff concentrates and gullies form. Included areas make up about 10 percent of the unit. Most areas have been smoothed and seeded to various grasses, legumes, and trees. Some areas are used as pasture. These soils generally are unsuited to cultivated crops, such as corn and soybeans. The limitations are the hazard of erosion and the rock fragments in the surface layer. These soils are suited to grasses and legumes. They are best suited to the forage species that are tolerant of drought and a wide range of acidity. Tall fescue and sericea lespedeza have been grown successfully. In most areas the pH ranges from 4.8 to 6.5, but in places it is as low as 3.6 or as high as 7.5. Where a higher pH is desired, lime can be added. Most areas require 2 to 5 tons of lime to raise the pH to about 6.5. The amount to be applied should be based on the results of soil tests and the quality of the lime. The supply of phosphorus generally is very low. This nutrient commonly is needed for successful seeding. Potassium levels generally are low or medium and commonly are adequate for cover mixtures. Other limitations affecting grasses and legumes are compacted layers and a high content of rock fragments. These soils suited to trees. Productivity is moderate. In an average stand that is fully stocked, loblolly pine on the Fairpoint soil can reach a height of about 74 feet in 50 years. On the Bethesda soil, a similar stand can reach a height of 69 feet. Seedling mortality and plant competition are the main management concerns. Erosion is a hazard unless the

ATTACHMENT 23.1.A

surface is protected by a plant cover. Seeding herbaceous species along with the tree species helps to control erosion. Mulching with straw or processed wood fiber also helps to control erosion. In many areas the seed, fertilizer, and mulch are applied as a slurry. The tree species suitable for seeding are black locust, eastern white pine, loblolly pine, yellow poplar, and white oak. The potential for open land wildlife habitat is very poor. The habitat can be improved by providing food, cover, water, nesting areas, and den sites. Rows of trees and shrubs can break up large open areas. Mixtures of grasses and legumes can be planted for food and cover. The habitat in areas of native plants can be improved by disking and applying fertilizer. Shallow water areas can be established. Also, seasonal pools can be established in depressions. Brush piles or other nesting sites are needed.

These soils generally are unsuited to urban development because of the hazards of uneven settling, landslides, and slumps.

ATTACHMENT 23.2.A

Alternate Topsoil

As detailed previously in this application, the area proposed for mining as a part of this application has been subjected to only minimal surface disturbances from previous mining activity. It is anticipated that the clearing and grubbing of the mine site will cause a loss of much of the available topsoil on the site. The relatively steep slopes of the mine site included in this permit application and the large track-type equipment that will be used to clear and grub the site will cause the loss of much topsoil. In order to insure that there will be a minimum of 6" of material available to redistribute over the mine site during reclamation activities, it is proposed to utilize Alternate Topsoil as a growing medium for the revegetation of the mine site. The material that is proposed for use will include any available topsoil which is salvaged and used as topsoil with the unconsolidated materials and selected strata from the overburden generated from the surface mining operation.

A

As it is proposed to utilize the salvaged soils as an Alternate Topsoil Material, practically all of the geologic strata generated during the surface mining activity will be suitable for use in the Alternate Topsoil Material. Complete geologic cross-sections depicting all strata are provided in Attachment 15.4.A

B

We have provided in this attachment results of chemical and physical analysis of the Alternate Topsoil Material, which were collected at each sample site.

C

We have provided in this attachment a statement from a soil scientist concerning the suitability of the proposed substitute topsoil material as a growing medium.

We have also provided in this attachment our request for waiver in order to utilize the Alternate Topsoil Material, which is proposed for use as a part of this mining operation.

ATTACHMENT 23.2.A

The following four (4) pages, "Alternate Topsoil Column" drawing, lab analysis and Soil Scientist Statement are true and accurate copies of the originals as presented and approved in Bell County Coal Corporation permit #807-5202, Original Application.

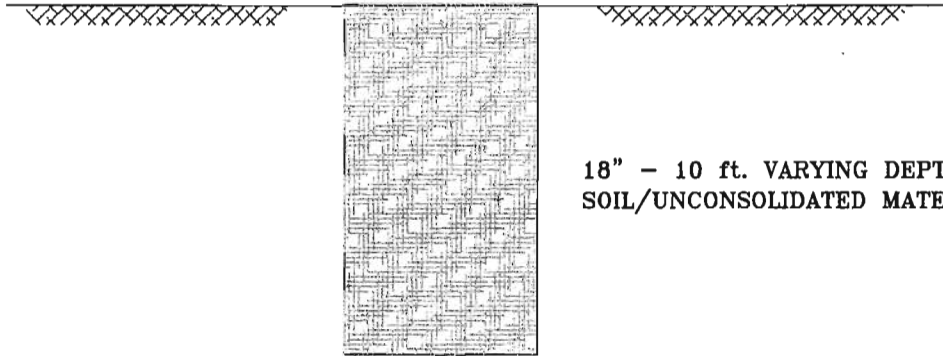
Notary Public: *J. K. Cochill*

State in which commissioned: *Kentucky*

My commission expires: *2-13-10*

ALTERNATE TOPSOIL #1 & #2

GROUNDLINE

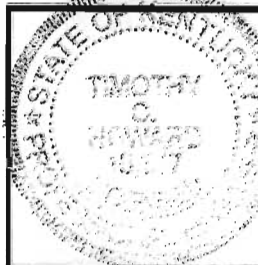


18" - 10 ft. VARYING DEPTH EXISTING
SOIL/UNCONSOLIDATED MATERIAL

Timothy C. Howard

I, _____, P.E. No. 15,317

Date: 1/2/02
hereby certify in accordance with 405 KAR 7:040, Section 10,
that this document is correct as determined by accepted
engineering practices and includes all information required
of it by Chapter 350 and KAR Title 405.



Bell County Coal Corporation

Permit No. 807-5202
Alternate Topsoil Column
Attachment 23.2.A

Scale: As-Shown

Page No.

Howard Engineering & Geology, Inc.



Appalachian Field Services Company

P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : BELL COUNTY COAL CORPORATION

PERMIT # : 807 - 5202
(SURFACE, SITE - 1)
(ALTERNATE TOPSOIL)

SAMPLED BY : BCCC

SAMPLE DATE : 12/03/2001

REPORT DATE : 12/12/2001

PARAMETER		RESULT
SOIL / WATER pH	7.33	STD. UNITS
BUFFER pH	7.53	STD. UNITS
LIME REQUIREMENT	0.0	TONS / ACRE CaCO ₃
POTASSIUM	158	POUNDS/ACRE
PHOSPHORUS	220	POUNDS/ACRE
CLAY	45.59	PERCENT
SILT	23.79	PERCENT
SAND	30.62	PERCENT
COARSE FRAGMENTS	1	PERCENT
NET NP / PA	+ 44.62	TONS/CaCO ₃

SUBMITTED BY :



Appalachian Field Services Company

P.O. Box 373
Baxter, Kentucky 40806
Telephone (606) 573-0521

SAMPLE IDENTIFICATION : BELL COUNTY COAL CORPORATION

PERMIT # : 807 - 5202
(SURFACE, SITE - 2)
(ALTERNATE TOPSOIL)

SAMPLED BY : BCCC

SAMPLE DATE : 12/03/2001

REPORT DATE : 12/12/2001

PARAMETER		RESULT
SOIL / WATER pH	7.26	STD. UNITS
BUFFER pH	7.51	STD. UNITS
LIME REQUIREMENT	0.0	TONS / ACRE CaCO ₃
POTASSIUM	180	POUNDS/ACRE
PHOSPHORUS	185	POUNDS/ACRE
CLAY	47.57	PERCENT
SILT	21.80	PERCENT
SAND	30.63	PERCENT
COARSE FRAGMENTS	1	PERCENT
NET NP / PA	+ 45.68	TONS/CaCO ₃

SUBMITTED BY :

Howard D. York, Jr.
P.O. Box 1309
Harlan, Kentucky 40831

December 19, 2001

Division of Permits, DSMRE
Management Support Branch
Work Area B41
#2 Hudson Hollow Complex
Frankfort, Kentucky 40601

RE: Bell County Coal Corporation Permit #807-5202
 Middlesboro, Ky. 40965

Dear Sir:

I do hereby certify that the analysis performed by Appalachian Field Services, P.O. box 373, Baxter, Kentucky 40806, on alternate topsoil materials indicate the following:

1) Physical examination of the site indicates that topsoil exists in insufficient quantity to cover the spoil and sustain adequate vegetation.

2) The alternate material analyzed was the best available material at the mine site to use as an alternate topsoil material.

3) Chemical analysis of the alternate material indicates that the alternate material will be of equal or superior quality to the topsoils indigenous to the area.

Therefore, it is my recommendation that the alternate material be used as an alternate topsoil material in the postmining land use.

Respectfully submitted,

Howard D. York, Jr.

Howard D. York, Jr., Soil Scientist
Harlan, Kentucky 40831

ATTACHMENT 23.3.A

As detailed previously in this application, the area proposed for mining as a part of this application has been subjected to previous surface disturbances from mining activity. However, during the normal clearing and grubbing of the trees, brush and stumps, along with other herbaceous material, the relatively steep slope of the land along with equipment size limitations make it virtually impossible to remove brush, stumps and herbaceous material without significant amounts of topsoil loss. It is for this reason that it is proposed to utilize an Alternate Topsoil material. The Alternate Topsoil, which is proposed for use in this mining operation, will consist of soil material and blended with strata from the surface mining activity as indicated on the Stratigraphic columns provided in Attachment 15.2.A. This Alternate Topsoil will not be stored, but as the mining activities progress, the top layer of spoil material will be utilized as the appropriate alternate topsoil material. A minimum of six (6) inches of topsoil and/or alternate topsoil will be re-distributed over all disturbed acreage.

Alternate Topsoil that will be distributed over previously backfilled and graded areas will be handled as follows:

- 1) Achieves an approximate uniform stable thickness consistent with the approved post-mining land uses, contours and surface water drainage system.
- 2) Prevents excessive compaction of the material.
- 3) Protects the material from wind and water erosion before and after it is seeded and planted.
- 4) Scarified prior to seeding and mulching to prevent slippage and Promote root penetration.

Blasting within 1,000' of Occupied Structures, Utility Line, Gas Wells and Public Roads

The surface blasting activity included in this application will be conducted within 1,000 feet of twenty-eight (28) occupied structures that include domestic single family dwellings, two (2) of which are churches. Also within 1,000 feet are eleven (11) natural gas wells and gathering lines, an electric powerline with support structures and two (2) public roads. Additional precautions, detailed in Attachment 24.8.A, will be undertaken by the certified blaster in charge to ensure that no flyrock will be thrown in violation of 405 KAR 16:120, Section 4 (5). The distance from the blasting site to each structure, structure type, resident name/owner is in the table included as Attachment 24.2.B. Each blasting area will be determined by the certified blaster in charge, using a combination of a hand-held GPS unit and the blasting map contained in this section to determine the limits of each blasting area taking into account criteria such as weather, direction of blast, geologic conditions, and orientation of blast site. The latitude and longitude of each structure within 1,000 feet of the blasting site has been recorded on the table in Attachment 24.2.B. The certified blaster in charge will record these coordinates into the hand held GPS to accurately determine the distance to each structure for determining which structures are to be included in each blasting area.

The locations of these structures, and/or facilities can be seen on the MRP map. The referenced structure numbers are shown on the Ground Water User Inventory in Section 16.1. The applicant proposes to submit the Surface Blasting Design Form, SMP-61 thirty (30) days prior to blasting. The method used to protect these structures from the potentially adverse impacts of air blast and ground vibrations will be the utilization of a seismograph in lieu of the scale-distance equations.

Since the proposed blasting will be within 500 feet of abandoned underground works (as detailed in Item 24.3), precautions listed in Item 24.8 should prevent any adverse impacts on the old works or old works on the blasting, and thus, the control criteria will be the distance to the structures listed in this item. Seismograph monitoring will be employed on all shots to ensure that the ground vibration limits found in Appendix B of 405 KAR 16:120 as stated below will not be exceeded at any regulated structure.

Appendix B of 405 KAR 16:120 Peak Particle Velocity Limits	
Distance from the blasting site in feet	Maximum allowable peak particle velocity for ground vibration in inches per second
0 to 300	1.25
301 to 5,000	1.00
5,001 and beyond	0.75

A notification of the proposed blasting activities, rights to request a pre-blast survey and the blasting signals will be distributed to the Department for Natural Resources Middlesboro Regional Office, Harlan County Fiscal Court and to each resident located within or regularly working within ½ mile of the permit area at least ten (10) days prior to but no more than thirty (30) days prior to the beginning of the blasting activity.

Access control of the blasting area will be maintained by blocking the access roads and public roads at a distance of at least 1,000 feet 10 minutes prior to the blast and by visual inspection of the area to insure clearance. Post detonation access to the area will be allowed only after inspection and determination that no hazard exists.

Map #	Dist. from Blasting	Structure Type	Foundation Type	Lat.	Long.
1	N/A	No house, being torn down	N/A	N/A	N/A
2	214'	20x30 wood frame, roll roofing	rock/wood w/ tin underpinning	36-35-41.98	83-52-37.72
3	324'	24x36 wood frame, roll roofing	concrete block/wood w/wood undpng.	36-35-40.82	83-52-37.43
4	311'	35x70 woodframe church, metal roofing, vinyl siding	concrete block basement	36-35-43.78	83-52-42.80
5	541'	20x30 wood frame, shingle roofing, vinyl siding	concrete block/wood w/vinyl undpng.	36-35-41.20	83-52-46.61
6	573'	14x70 mobile home (vacant)	concrete block w/vinyl underpinning	36-35-41.06	83-52-47.87
7	678'	20x30 woodframe, shingle roofing, vinyl siding	rock w/ vinyl underpinning	36-35-40.59	83-52-50.22
8	483'	12x50 mobile home (vacant)	concrete block w/ vinyl underpinning	36-35-42.52	83-52-49.72
9	625'	12x60 mobile home	concrete block w/ vinyl underpinning	36-35-42.36	83-52-52.51
10	752'	28x62 wood frame, shingle roofing, vinyl siding	concrete block	36-35-41.15	83-52-56.59
11	806'	20x30 wood frame, shingle roofing (vacant)	rock/wood w/vinyl underpinning	36-35-39.26	83-52-57.38
12	559'	28x68 double wide mobile home, shingle roofing	rock/wood w/vinyl underpinning	36-35-41.48	83-52-58.74
13	686'	12x60 mobile home, shingle roofing	concrete block w/metal underpinning	36-35-38.93	83-52-59.62
15	830'	26x45 woodframe, shingle roofing, vinyl siding	concrete	36-35-33.78	83-53-06.52
19	932'	24x24 wood frame, shingle roofing, vinyl siding	rock/wood	36-35-24.51	83-53-36.79
20	797'	30x30 wood frame, shingle roofing	rock/wood w/ vinyl underpinning	36-35-18.95	83-53-46.22
21	808'	14x70 mobile home, tin roof, alum. Siding	concrete block	36-35-18.33	83-53-46.64
22	N/A	No Longer exists	N/A	N/A	N/A
23	830'	28x56 double wide mobile home, shingle roofing, vinyl siding	concrete block w/ vinyl underpinning	36-35-15.90	83-53-48.52
25	737'	40x60 wood frame church, metal roofing, wood siding	concrete block w/basement	36-35-15.87	83-53-50.18
27	759'	28x58 double wide mobile home, shingle roofing	concrete block w/vinyl underpinning	36-35-13.94	83-53-55.91
28	843'	12x60 mobile home, metal roofing, (vacant)	concrete block w/ wood/vinyl undpng.	36-35-13.14	83-53-57.06
29	821'	28x58 double wide mobile home, shingle roofing, wood trim (16x24 garage)	block forms w/ rock/concrete undpng.	36-35-21.07	83-54-06.62
30	N/A	No house, burned out	N/A	N/A	N/A
31	842'	20x24 wood frame, metal roofing, vinyl siding	rock/wood	36-35-15.44	83-54-03.25
32	970'	12x60 mobile home, metal roofing, vinyl siding	concrete block w/vinyl underpinning	36-35-14.56	83-54-04.38
43	378'	16x80 mobile home, shingle roofing	concrete block w/ vinyl undpng.	36-35-52.41	83-52-59.23
44	388'	12x60 mobile home, metal roofing	concrete block w/brick undpng.	36-35-53.60	83-52-58.63
45	397'	12x60 mobile home, metal roofing, wood siding	concrete block w/ insulated metal undpng.	36-35-54.31	83-52-58.69
46	364'	12x60 mobile home, metal roofing	concrete block w/tin undpng.	36-35-57.03	83-52-58.43
47	416'	24x40 wood frame, metal roofing	concrete block	36-35-57.45	83-52-59.14
KY 74	197'	2 lane divided asphalt	Ky Trans. Cabinet	N/A	N/A
KY 535	219'	2 lane divided asphalt	Ky Trans. Cabinet	N/A	N/A
11 Gas Wells	100'	Capped with steel casing	Daugherty Petroleum	N/A	N/A
Gathering Lines	100'	2", 3" 4" steel welded on surface	Daugherty Petroleum	N/A	N/A
Powerline	150'	2-Pole Wooden Structures	Eastern Kentucky Utilities	N/A	N/A

ATTACHMENT 24.3.A

Blasting within 500' of Abandoned Underground Works

As detailed previously in this application, the surface mining activity included in this application will be conducted within 500' of known abandoned underground mine workings in the Jellico (Bennetts Fork) coal seam. These abandoned underground workings were the result of the underground mining activity conducted prior to the 1960's.

The surface mining operation will strip within 0 feet of these abandoned underground mine workings. The mining planned by this operation will intersect the abandoned works located near Pond #3. The abandoned works in this area are extremely limited and only a few breaks deep. Additional more extensive abandoned works are located within 500 feet to the south of the proposed mining. It is not anticipated that the surface blasting activity which will be conducted as a part of the mining will be adversely affected by the abandoned underground workings. Also, it is not anticipated that the abandoned underground mine workings will have any adverse effects on the surface mining activity or the surface blasting activity. Due to the limited extents of the underground works to be intersected the potential for sudden release of water from the underground works during the contour stripping operation it not anticipated to be a problem.

Any drainage from the abandoned mines in the Jellico coal seam will be controlled by draining any discharge into the sediment ponds by maintaining the drainage on the bench with the use of berms and/or ditching. Discharge monitoring of the sediment ponds is conducted as required and this will provide an analysis of the mine discharge. No mine discharge opened by this operation will be allowed to leave the mine bench without first being passed through a sediment pond. Existing mine or other discharges which have not been opened by this operation will not be redirected to a pond until just prior to the discharge being affected by the mining operation. As the mining progresses along the contour, all areas in which the mining activities may intersect an existing mine will be probed using an excavator to determine if there is an actual underground mine to be intersected as indicated by the MRP map. When an underground mine area is encountered by the excavator, the area will be carefully opened by the operator and any discharge will be directed to the closest pond, or to a control ditch to be directed to the closest pond. The mine area will be allowed to drain. Once the mine area has been drained to the satisfaction of the job foreman the mine area will be visually inspected by the job foreman to determine as best as possible in a

safe manner the amount of impounded water in the mine area that has been opened. At no time will the job foreman nor any personnel be allowed to enter any underground mine area opened by this operation. The mine opening will then be plugged to the maximum extent possible to prevent blasting from damaging any mine integrity that may still be in place.

Should the drill encounter an underground mine void while drilling holes in preparation for blasting, the job foreman and the certified blaster will be notified. The foreman and the certified blaster will inspect the hole to confirm the finding of the drill operator. The MRP map will then be reviewed for any mine workings shown. The drill hole will then be plugged and additional reference holes may be drilled to further locate the mine area or an excavator or a bulldozer may be used to open the underground mine suspect area. If an underground mine is located, it will be addressed as stated in the Pre-Drilling Precautions. The drill holes which penetrate any mine areas will be backfilled and not loaded. The holes which did not encounter any abandoned mine workings will be loaded and shot according to the blast design (SMP-61).

These additional precautions should be sufficient to prevent surges of water in the old works resulting in a sudden release of water from the outcrop.

Since the underground mine workings were abandoned prior to the beginning of surface mining activity, it will not be necessary to provide a "MSHA Blasting Joint Approval Plan" at this time. The SMP-61 form will be submitted 30 days prior to blasting.

Provided in this section (24) is the "Public Notice of Blasting Schedule" which will appear in the local newspaper. This public notice will be published at least ten (10) days but no more than thirty (30) days prior to the beginning of the blasting activity.

The same public notice will be distributed to the Department for Natural Resources Middlesboro Regional Office, Bell County Fiscal Court and to each resident located within ½ mile of the permit area at least ten (10) days prior to but no more than thirty (30) days prior to the beginning of the blasting activity.

ATTACHMENT 24.4.A

Blast Warning Signal

WARNING SIGNAL - A one (1) minute series of long blasts from a siren five (5) minutes prior to the blast signal.

BLAST SIGNAL - A series of short blasts from a siren one (1) minute prior to the shot.

ALL CLEAR SIGNAL - A prolonged blast from a siren following the inspection of the blast area.

These signals will be audible within one-half mile of the blast site.

Access control of the blasting area will be maintained by blocking public and access roads to the area 10 minutes prior to the blast and by visual inspection of the area to insure clearance. Post detonation access to the area will be allowed only after inspection and determination that no hazard exists.

Persons within one-half mile of the permit area will be notified by mail and orally of the warning signals meaning. The meaning of the warning signals will also be included in the public notice of Blasting Schedule published in the newspaper.

- 24.5 Does the proposed surface mining operation include blasting operations using more than five (5) pounds of explosives? [**XX**] YES [] NO. If "YES", submit a sample copy of the blasting schedule to be published in a newspaper of general circulation in the locality of the blasting operation. Describe the procedure for circulating the schedule to the DSMRE regional office, local governments, public utilities, and to each resident within a one-half mile of areas affected by surface operations or facilities in accordance with 405 KAR 16:120, Section 3. Submit as "Attachment 24.5.A".
See Attachment 24.5.A
- 24.6 Describe how all residents within one-half mile of areas affected by surface operations or facilities will be informed about the procedure for requesting a preblast survey, and the procedures for recording and reporting to DSMRE the results of any requested preblast surveys. Submit this description as "Attachment 24.6.A".
See Attachment 24.6.A
- 24.7 Describe the procedures to be used for ensuring that airblasts are controlled in accordance with 405 KAR 16:120 or 18:120. Submit description as "Attachment 24.7.A".
See Attachment 24.7.A
- 24.8 Describe the procedures to be used to control flyrock and how prevention of adverse impacts of blasting will be ensured in accordance with 405 KAR 16:120 or 18:120. Submit this description as "Attachment 24.8.A".
See Attachment 24.8.A
- 24.9 Will blast monitoring equipment be utilized in lieu of the scaled distance equations presented in Appendix C of 405 KAR 16:120 or 405 KAR 18:120? [**XX**] YES [] NO. If "YES", provide a description of the types, capabilities, sensitivities and locations of the equipment proposed for use. Submit this description as "Attachment 24.9.A".
See Attachment 24.9.A

25. Backfilling and Grading Plan

- 25.1 Describe the methods to be used for backfilling and grading the proposed permit area, including soil stabilization and compaction practices. Provide a map and appropriate cross sections to illustrate and define the proposed postmining configuration of the permit area. If cross sections are used identify the location of the cross sections on the MRP map or other appropriate map. Provide this information as "Attachment 25.1.A".
See Attachment 25.1.A.
- 25.2 Is a variance requested from approximate original contour requirements for any portion of the proposed permit area? [**XX**] YES [] NO. If "YES", provide as "Attachment 25.2.A", the following information:
- (a) A complete description, including location, of the area(s) for which a variance is requested.
 - (b) A detailed explanation of how the applicant meets the "criteria for approval" under one or more of the following regulations: (1) 405 KAR 8:050, Section 4, mountaintop removal; (2) 405 KAR 8:050, Section 6, steep slopes; (3) 405 KAR 16:190, Section 4, thin overburden; (4) 405 KAR 16:190, Section 5, thick overburden; (5) 405 KAR 16:190, Section 7, remining.

Notice of Blasting

We are providing a Public Notice of Blasting Schedule as Attachment 24.5.B which will be published in the Harlan Daily Enterprise, and Right to Request a Pre-Blast Survey as Attachment 24.6.B which will be distributed to the appropriate regional office, local governments, and to each resident within a one-half ($\frac{1}{2}$) mile of the area affected by the blasting activities.

(a) Copies of the Public Notice of Blasting Schedule and Right to Request a Pre-Blast Survey shall be distributed in accordance with the time frame specified (at least ten (10) days, but no more than thirty (30) days) to the appropriate department regional office, to local governments and public utilities, and to each residence within one-half ($\frac{1}{2}$) mile of the blasting site described in the schedule.

(b) The permittee shall redistribute the schedule at least every twelve (12) months and revise and redistribute the schedule at least ten (10) days, but not more than thirty (30) days, before blasting whenever the area covered by the schedule changes, the actual time periods for blasting significantly differ from those identified in the prior announcement, or the permittee changes the types or patterns of warning or all-clear signals identified in the prior notification.

(c) All blasting shall be conducted between sunrise and sunset. The cabinet may specify more restrictive time periods based on public requests or other relevant information and according to the need to adequately protect the public from adverse noise and other impacts. Blasting may, however, be conducted between sunset and sunrise if:

1. A blast that has been prepared during the day must be delayed due to the occurrence of an unavoidable hazardous condition and cannot be delayed until the next day because a potential safety hazard could result that cannot be adequately mitigated;

2. Prior approval for conducting the blasting between sunset and sunrise is obtained from the Kentucky Office of Mine Safety and Licensing; and

3. A complete written report of blasting at night is filed by the permittee with the cabinet not later than three (3) days after the night blasting, not including Saturdays, Sundays, or legal holidays. The report shall include a detailed description of the reasons for the delay in blasting

including why the blast could not be held over to the next day, identification of the time at which the blast was actually conducted, a description of the warning notices given, and a copy of the blast record required by Section 6 of this administrative regulation.

(d) Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. When a permittee conducts an unscheduled blast, the permittee, using audible signals, shall notify all persons within one-half (1/2) mile of the blasting site and document the reason for the unscheduled blast in accordance with Section 6(20) of this administrative regulation.

The blasting signals will be as follows:

WARNING SIGNAL - A one (1) minute series of long blasts from a siren five (5) minutes prior to the blast signal.

BLAST SIGNAL - A series of short blasts from a siren one (1) minute prior to the shot.

ALL CLEAR SIGNAL - A prolonged blast from a siren following the inspection of the blast area.

In the event of an emergency situation arise, all safety precautions will be followed including but not limited to barricading all public roads and access roads no less than ten (10) minutes prior to the blast, following the warning signal, blast signal and the all clear signals as detailed in this attachment.

ATTACHMENT 24.5.B

PUBLIC NOTICE OF BLASTING SCHEDULE

Application Number: 807-0365

In accordance with Federal Regulations, 30 CFR 715.19, and State Regulation, 405 KAR 16:120, Section 3, Public Notice of Blasting Schedule, Appolo Fuels, Inc., P.O. Box 1727, Middlesboro, KY 40965, Telephone Number (606) 248-1535, will conduct blasting operations in Bell County at mining operations located approximately 0.02 miles northeast from KY 74's junction with KY 535 and 0.13 miles northeast of Fonde, KY. The Latitude is 36° 35' 44"N. The longitude is 83° 52' 04"W. Blasting activity will be conducted on approximately 193.24 surface acres. These blasting operations will begin within 30 days of issuance of the permit and will be conducted Monday through Saturday from sunrise to sunset.

Control of blasting area will be maintained by blocking public and access roads to the area 10 minutes prior to the blast. Post detonation access to the blasting area will be allowed only after an inspection determines that no hazards exist. The following is a list of the blasting signals.

WARNING SIGNAL - A one (1) minute series of long blasts from a siren five (5) minutes prior to the blast signal.

BLAST SIGNAL - A series of short blasts from a siren one (1) minute prior to the shot.

ALL CLEAR SIGNAL - A prolonged blast from a siren following the inspection of the blast area.

These blast signals will be audible within 1/2 mile of the blasting area.

Blasting may be conducted at times different from those announced in the blasting schedule when emergency situations arise where rain, lightning or other atmospheric conditions or the safety of the operation or the public requires unscheduled detonation. In the event of an emergency situation should arise, the aforementioned precautions will be followed.

ATTACHMENT 24.6.A

Notice of Pre-Blast Survey

At least thirty (30) days prior to the initiation of any blasting activity, the permittee shall notify, in writing, all residents or owners of dwellings or other structures located within ½ mile of the permit area of how to request a pre-blast survey. The notification to the resident or owner of the dwelling shall be made by certified mail, return receipt requested or by other acceptable means, i.e. hand delivery.

The resident or owner may request that a preblasting survey be conducted by notifying the permittee or the Cabinet in writing. Upon notification the permittee shall promptly conduct a pre-blasting survey of the dwelling or structure. If a structure is renovated, modified or added to subsequent to the original pre-blasting survey, then, the resident or owner can request an additional pre-blasting survey be conducted in accordance with the regulations.

We have provided a facsimile of the notification that will be provided to each resident or owner within ½ mile of the permit area. This notification is in the form of the letter provided in RAM 108.

ATTACHMENT 24.6.B

Notice of Your Right to Request a Preblasting Survey

Dear Resident,

Your home, school, church, shop or other manmade structure is located within 1/2 mile of the surface mining permit #807-0365 of Appolo Fuels, Inc. The mining operation is located near Fonde and Pruden in Bell County. The latitude is 36° 35' 44"N. The longitude is 83° 52' 04"W.

Federal and state laws and regulations (405 KAR 16:102/18:120, Section 2) require that the permittee notify residents or owners of any manmade structures within 1/2 mile of the permit area of their right to request a preblasting survey of the structure. This survey is conducted at no charge to the resident/owner and it is done at the resident's/owner's convenience.

It is not expected that the blasting will cause any problems or damage. However, a preblasting survey is offered and conducted for the protection of the resident's/owner's property. The survey will determine and document the existing condition of the structure(s), and any physical factors that could reasonably be affected by the blasting. If wells are used for the water supply, a water sample may be taken and included with the survey. In addition, the permittee should be notified (by the resident/owner) if any changes are made to the structure so the survey can be updated.

Upon completion of the survey, the original copy will be on file at the mine office, one copy will be sent to the regional office of the Department of Natural Resources (DNR), and one copy will be sent to the resident/owner. If the resident/owner disagrees with the results of the survey, he can notify (in writing) both the permittee and DNR. You can request the survey by writing either:

DNR Regional Office Address
Regional Office
1804 East Cumberland Avenue
Middlesboro, KY 40965
Telephone: 606-248-6166

Permittee Address Middlesboro
Appolo Fuels, Inc.
P.O. Box 1727
Middlesboro, KY 40965
Telephone: 606-248-1535

Please include your address, phone number and the following permit number in your request: #807-0365.

ATTACHMENT 24.7.A

Airblast Monitoring

Airblasts shall be controlled so that they do not exceed the values specified in the table below at any dwelling; school; church; or commercial community or institutional building; outside the permit area unless such structures are owned by the permittee and are not leased to another person. The leasee may sign a wavier relieving the permittee from meeting the airblast limitations. The permittee shall conduct periodic monitoring at least three (3) consecutive blasts during the period from January through June and three (3) consecutive blasts from July through December, to ensure compliance with the airblast standards.

AIRBLAST LIMITATIONS

Lower frequency limit of measuring system in Hz (± 3 dB)	Maximum level in dB
2 Hz or lower-flat response.....	133 peak
6 Hz or lower-flat response.....	129 peak

Equipment: Air blast monitoring will be conducted using a multi-function seismograph capable of monitoring air overpressures in Linear, or A-weight scales. Specifications for each scale shall be as follows:

- Linear and Frequency Response 2 to 400 Hz
- A-weight Range 100 to 148 dBA
- A-weight Resolution 0.2 dBA

Procedure: Airblast monitoring will be conducted periodically during blasting hours. Monitoring will be conducted on all shots detonated in a period whether the shots occur singularly or consecutively. Results of the monitoring will be recorded on the blasting log and made part of the blasting record and kept for a period of five (5) years and supplied to the cabinet upon request.

Location: At the nearest control structure for each blast, or as requested by the Cabinet. Records of each air blast, along with associated blasting records will be kept at the company office for at least five (5) years according to 405 KAR 16:120 Section 6.

Flyrock Control and Prevention of Adverse Impacts of Blasting

Flyrock, including blasted material traveling along the ground, will be controlled by proper blast design and proper blasting techniques being conducted by a certified blaster. Flyrock will not be cast outside of the permit boundary.

All blasting shall be conducted to prevent injury to persons, damage to public and private properties outside the permit area, adverse impacts on any underground within 500', changes in the courses, channels, and availability of surface waters outside the permit area, alterations of the groundwater flow systems and ground water availability outside the permit area.

General Measures taken to ensure compliance of the blasting operation include:

1. All blasting conducted by a certified blaster.
2. Following the blasting plans in this Section 24, Blast Design SMP-61, and utilizing the scale distance equation, and/or seismic monitoring.
3. Notifying the public through the newspaper advertisement.
4. Notifying the residents and persons regularly working within ½ mile of the permit area of pre-blast survey, blasting signals.
5. Notifying utilities and local government.
6. Controlling access to blasting area.
7. Maintaining a safety berm below the blasting area to prevent rock trundling.
8. Posting signs regarding blasting and signals.
9. Following the blasting precautions when encountering old works.
10. Following the communication plan between the driller and blaster, if different.
11. Following all state and federal regulations regarding storage, handling and detonation of explosive.

The certified blaster will be in charge of all blasting activities, and in charge of all determinations necessary to ensure a safe detonation. This includes, but it not limited to, determination of the bounds of the blast area and safety zones, location and identification of all structures to be protected and all measures necessary to protect structures and people, drilling patterns and blast orientation, blast design, blast-hole loading and determination of delay timing,

and time of detonation and visually inspecting the blast-holes prior to loading. The certified blaster in charge will also take into careful consideration information such as location and condition of dwellings and other structures to be protected, the driller's log, blasthole deviation data, laser-profile data, slant of the holes, blasthole loading data, condition of the highwall, presence of overhangs, back-breaks, voids, weathering and variations in the local geology, in controlling flyrock and preventing adverse impact of blasting. Also, unless it would result in a more potentially hazardous situation, all blasts will be designed by the certified blaster in charge so that the open face and delay pattern directs movement of overburden in a direction other than toward the direction of houses or roads. The certified blaster will make every reasonable effort to assure that each shot is configured and designed such that adequate burden relief is present so that swell will have sufficient space to expand with a minimum amount of vertical movement. Whenever possible, there will be a bench of sufficient size to catch and prevent any swell from moving off of the permitted site.

The driller will keep a log of each hole drilled that will indicate the depth, diameter and slant of each hole. The log will also include the type of rock encountered along with its consistency and thickness and any voids or any anomalies encountered. The certified blaster in charge of each blast after reviewing the driller's log, will inspect and determine the overall condition of the high-wall, checking for the presence of overhangs, irregularities and toe, back-breaks, voids, weathering and variations in the local geology prior to designing and loading all blasts in order to control flyrock and preventing adverse impacts of blasting. Explosives will be loaded in competent rock only. The driller will inform the blaster via written report, of which holes penetrated old works and at what depth. The driller will also inform the blaster if the old works contained water when penetrated. The method of determining if water is present in the old works will be completion of an electrical circuit on a water level indicator which will sound an alarm when contacted with water. Any holes that penetrate the old works will be completely backfilled to the surface and no explosives will be used in said holes. This precaution should prevent any adverse impacts to the old works or sudden release of any impounded water. Additional measures to determine if the old

works contain water will include observance of accumulated water on existing benches and observance of auger holes for accumulations of water. Any blasts that have the potential of intersecting accumulations of water in old works will have their drainage diverted to an existing pond. In case of emergency release of large accumulations of water, the permittee will implement their SPCC and BMP plans and notify KDOW. Should water be encountered in any old works, backfilling will be performed in such a way as to prevent impounding of water in the old works. The method of preventing backfill from causing accumulations of water in the old works will include installation of a rock drain in the backfill at the lowest elevation of works encountered. The rock drain will extend from the old works to the toe of the backfill slope. The certified blaster in charge will make the driller's log a permanent part of the blast record.

The communication plan between the driller and blaster, if different, will include written communication informing the blaster of any old works, fractures, faults, mud seams or other changes in geology encountered during drilling. The driller will inform the blaster of which holes penetrated any of these phenomena, their characteristics and at what depth they are encountered. The certified blaster in charge will also inspect the condition of all holes prior to loading with explosives. Any drill holes that penetrate old mine works will be backfilled and not loaded with explosives.

The safety berm will be constructed and maintained below each mine bench within the proposed blasting areas. The berm can be the same berm required by 405 KAR 16:010, Section 4 if the barrier is exposed. If not, a berm will be constructed just below the proposed blast areas at a minimum height 3 feet as shown on the drawing in this item, or at any reasonable height requested by the Department.

Due to presence of several churches within ½ mile of permit area, no blasting will be conducted during normal times of religious services, which would be Wednesday evenings after 6 PM, Sunday mornings until noon and Sunday evenings after 6 PM.

All of the works within 500 feet of the proposed blasting area are assumed not to contain any significant amounts of impounded water due to the limited extent of the

abandoned underground works

The proposed blasting will be within 1,000 feet of several utility support structures owned by Eastern Kentucky Utilities. All of the support structures are two-pole wooden structures. The location of these structures have been indicated on the MRP map. No blasting will be conducted within 150 feet of the support structures for this line. Blasting mats will be used when blasting underneath the line or within 100 feet of the centerline of the line as shown on the MRP map. Since there are different types of controlling structures within the vicinity of the blasting areas, and occupied dwellings, at variable distances from the proposed blasting areas, the certified blaster should design each blast for the situation that yields the least amount of explosives per delay at the time of blasting.

Seismograph and airblast monitoring, if monitor is dual equipped, will be used on all blasts to ensure that ground vibration and airblast limits are not exceeded at any regulated structure. The ground vibration limits will be as stated in 405 KAR 18:120, Appendix B as follows:

Appendix B of 405 KAR 18:120	
Peak Particle Velocity Limits	
Distance from the blasting site in feet	Maximum allowable peak particle velocity for ground vibration in inches per second
0 to 300	1.25
301 to 5,000	1.00
5,001 and beyond	0.75

The permittee will provide the certified blaster in charge with a complete copy of the approved blast plan contained in this permit application. Anytime a new blaster is placed in

charge of blasting activities, the permittee will also ensure that the new blaster receives a complete copy of said plans.

When blasting within 1000' of KY 74 or the Fonde County Road, flagmen will be placed at both directions of the road at least 1000' from the blasting area to stop all traffic prior to the Warning Signal. All traffic will remain stopped until the All Clear Signal is given.

ATTACHMENT 24.9.A

Ground Vibration

Type, capability, sensitivity and monitoring locations are as follows, or a comparable equivalent:

NOMIS 5400 - Operating Characteristics

Seismic

Trigger Level:

Programmable in steps of 0.01 IPS (.25 mm) from .02 IPS (.5 mm) to 4.0 IPS (102 mm)

Maximum Range:

4.0 IPS (102 mm/sec) standard

8.0 IPS (204 mm/sec) optional

Frequency Range:

2-500 (5-second graph)

2-250 (10-second graph)

2-150 (15-second graph)

1 Hz Geophones optional

Accuracy:

+/-3% of full scale at 160 Hz

Sample Rate:

1024 samples per sec per channel (for 5 sec record)

Transducer:

Three perpendicular oriented electrodynamic, normalized, Geophones, 2 Hz standard
(1 Hz optional)

Sound

Weighting Scale:

F(Flat) and A scales

Measuring Range:

F: 100-140 dB peak (.000055 to .028 Psig)

F: 90-140 dB peak optional

Frequency Range:

2-500 Hz

F: -3 dB at 2 Hz

Accuracy:

+0.7 dB at reference point (127 dB peak, 250 Hz)

Trigger Level:

100-140 dB in 1 dB steps

General

Recording:

Thermal printer, dot matrix, 3.20 inches wide paper printout, 55+ events/roll

Internal Memory:

Internal memory standard - 100+ events capacity for 2 sec records

Date and Time Indication:

ATTACHMENT 24.9.A

Month, day, and year. Hours, minutes, and seconds (24-hour clock)

Measuring Time:

User selectable, 2,3,5,10,15 sec recording period, including .5 sec pre-trigger information

Total Cycle Time:

Approximately 2.5 minutes with long report; 1.5 minutes with printer off

Shielding:

Analog circuits shielded against interference

Temperature Range:

0-120 F

Graphical Printout:

USBM/OSM log plot of Peak Particle velocity vs Frequency (standard)

Particle velocity vs Time Graph - .25, .50, 1, 2, 4 IPS scales on seismic trace; (8.0 IPS optional) (auto-ranging)

100-120 dB, 100-140 dB scales (90-140 dB optional) on sound trace (auto-ranging)

Timing marks every 1/10 second

.000055 to .028 Psig on sound

LCD:

8 line by 40 column text & graphics display

Backlight for dim areas (optional)

(LCD viewing greatly reduces power use by turning off printer)

Storage:

Unit is self-contained in unbreakable plastic case

Weight:

16 lb. (7.3 kg)

Size:

7 x 10 x 11 in

178 x 154 x 279 mm

Power

Internal Batteries:

6v, 9Ah, gel-type rechargeable

Up to 30 days with printer off (Printer on - 20 days)

External Power:

AC Adapter; 9vDC @ 500mA

6v wet cell battery

Solar panels - optional

Location of Monitoring: Nearest structure or as requested by the Cabinet.

ATTACHMENT 25.1.A

Backfill and Grading Plan

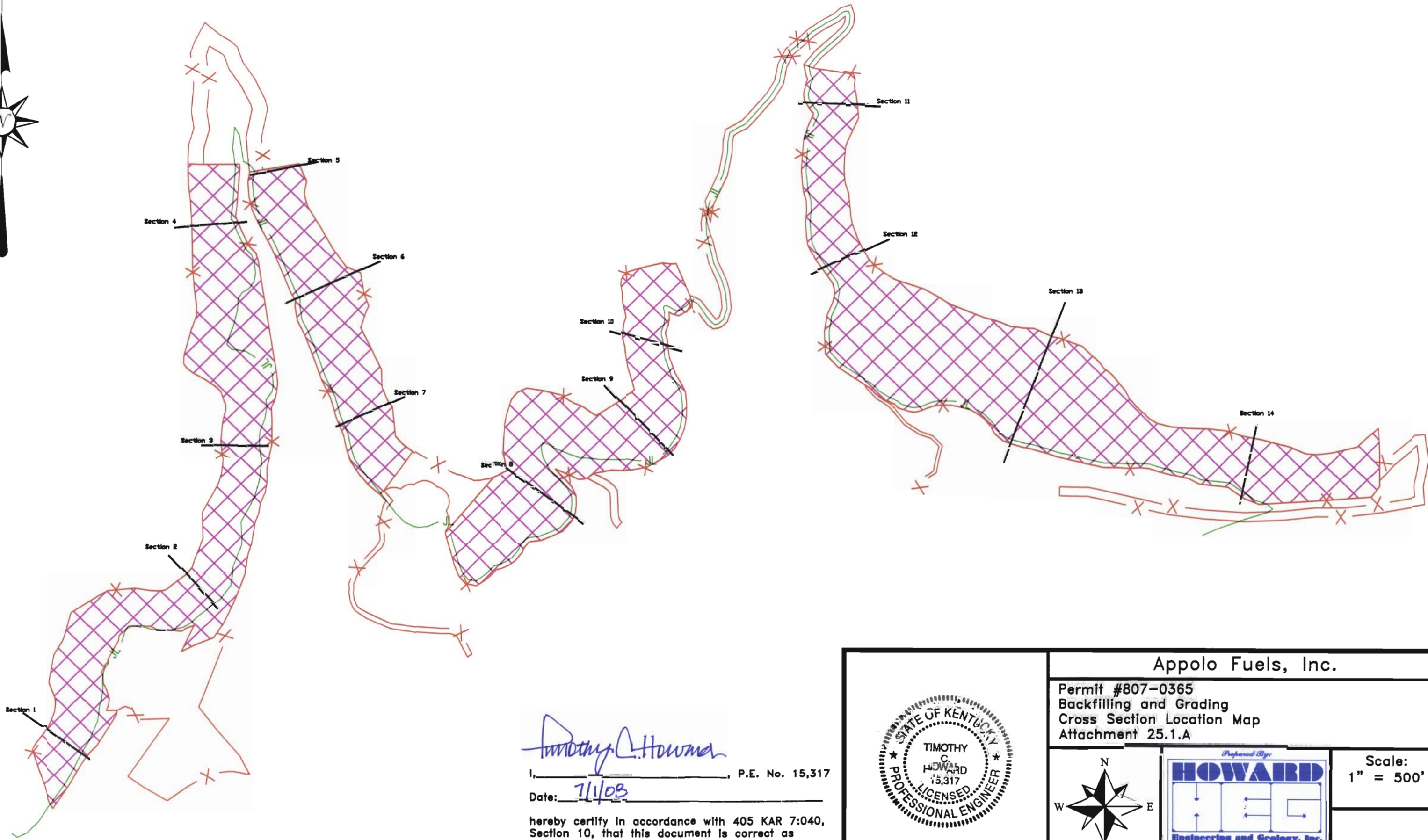
Backfilling and grading shall be performed as the operation progresses by the contour method of mining around the Hignite coal seam and will be conducted as a continuous operation and as an integral part of the mining operation. After the spoil from a given cut or a series of cuts and pits is placed within the spoil storage area, and when the appropriate spoil storage area has been filled, all remaining spoil will be transported by haulback trucks to return the mined areas to the approved final contour. Spoil will be placed in the spoil storage area and on the mining area simultaneously so that reclamation is kept current. The spoil will be transported, dumped and graded with dozers in order to obtain sufficient compaction of the backfilled material. After all auger holes and/or highwall mine openings have been covered and the area has been backfilled to the approved contour the area will be final graded and scarified to prevent slippage of topsoil and to aid in root penetration. Topsoil will then be replaced as described in the topsoil handling plan, fertilized, seeded and mulched as described in the revegetation plan. Cross-sections are included to show the excavation and backfill calculations as well as the final configuration of the permit area. All highwall remnants will be stable and the slope of the backfill will be compatible with the proposed postmining landuse

The proposed mining operation will consist of contour and auger/highwall mining. The removal of all coal will proceed as concurrently as possible and in a timely manner in order to minimize the time period in which disturbed areas are exposed prior to reclamation.

It is proposed by this application to request an alternate contemporaneous reclamation variance described as follows: With the rate of mining for the highwall mining machine versus the contour stripping mining rate, it is anticipated that a total distance of 4500 feet and a time of 180 days will be necessary for this operation. This would allow enough room to operate the different equipment in the various pits on the seam. The additional distance requested does not consist of all open highwall. It will also contain areas of clearing and grubbing and areas where drill benches are created. Therefore, not all of the requested distance will be open highwall and necessitate the storing of spoil material. Also, it is anticipated that the time requirements will be exceeded because the excavations on the coal seam will not be reclaimed within 120 days because of the

ATTACHMENT 25.1.A

auger/highwall mining activities on the Jellico coal seam. Additional Supplemental Assurance in the amount of Fifty Thousand Dollars (\$50,000.00) for each 1,500 feet of additional highwall beyond the initial 1,500 feet. This will result in a total additional distance of 3,000 feet and One Hundred Thousand Dollars (\$100,000.00) of supplemental assurance. The supplement assurance shall be paid in \$50,000.00 dollar increments prior to the increment disturbance.



Timothy C. Howard

_____, P.E. No. 15,317

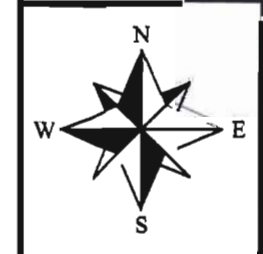
Date: 7/1/08

hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



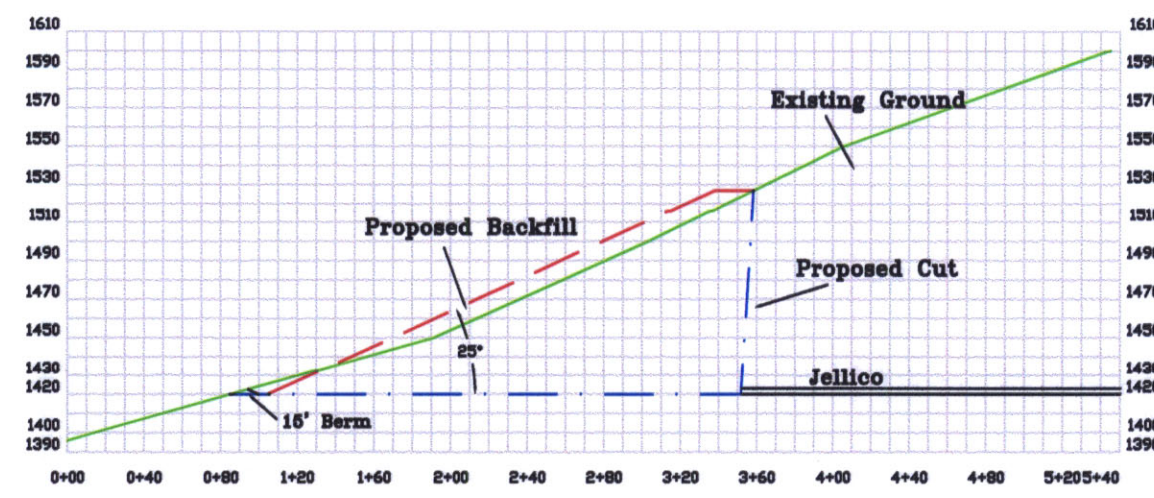
Appolo Fuels, Inc.

Permit #807-0365
Backfilling and Grading
Cross Section Location Map
Attachment 25.1.A

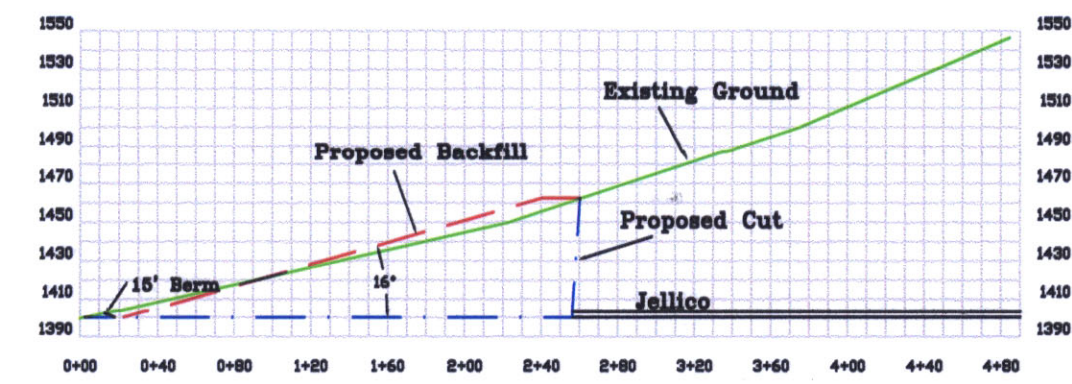


Scale:
1" = 500'

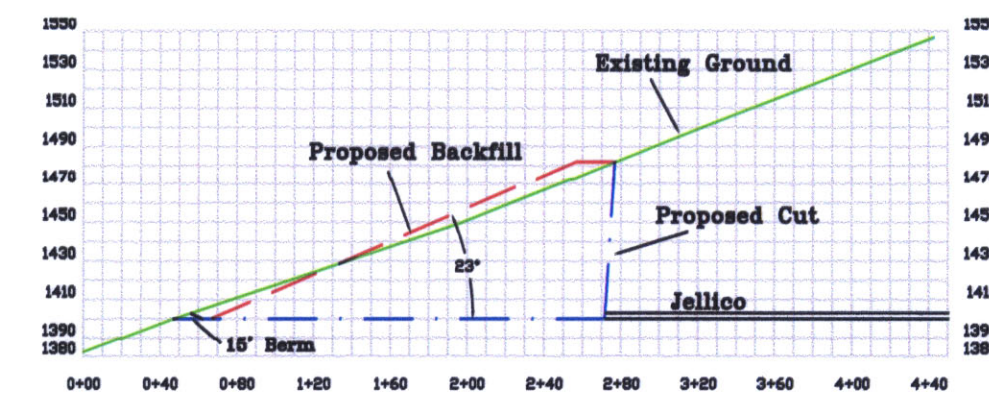
Section 1



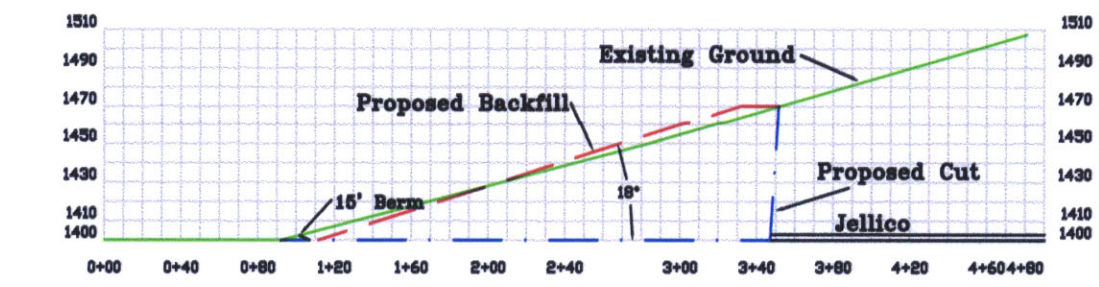
Section 2



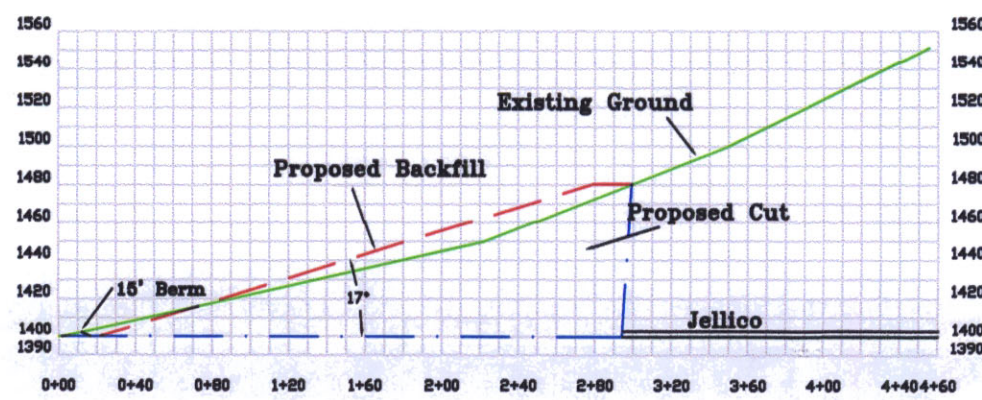
Section 3



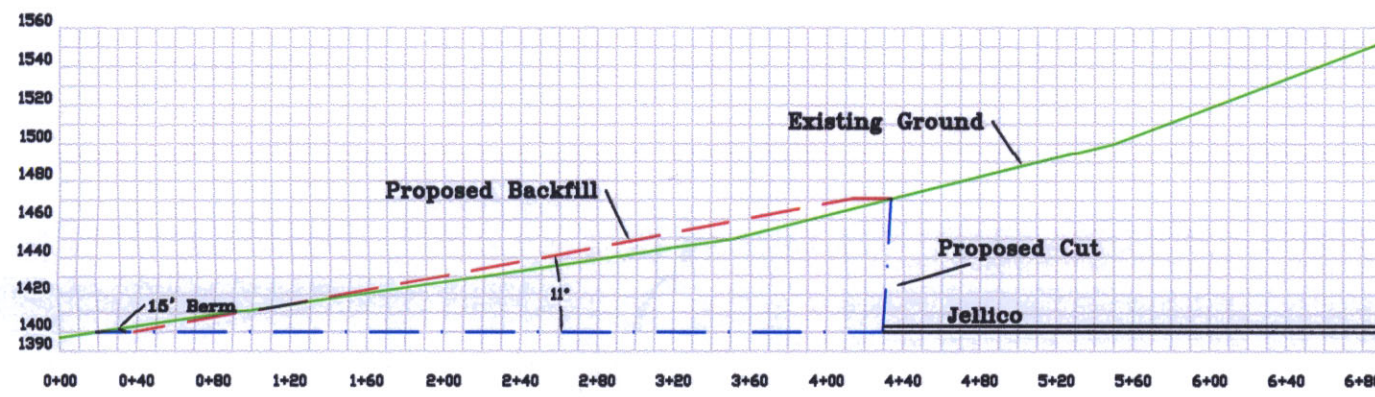
Section 4



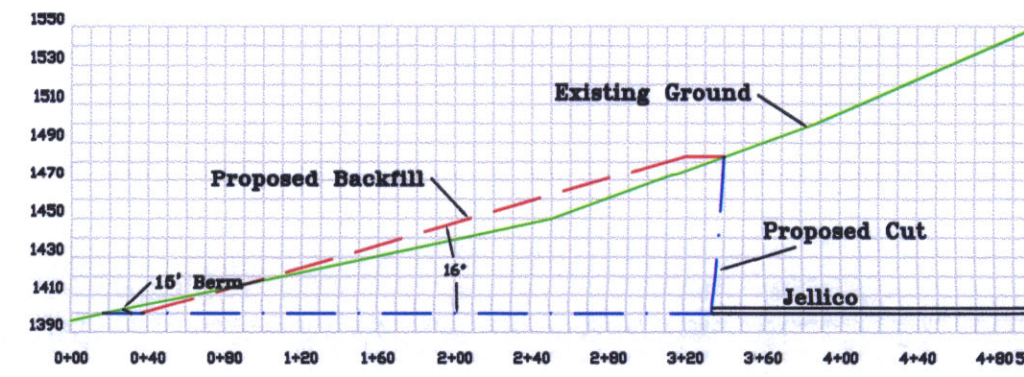
Section 5



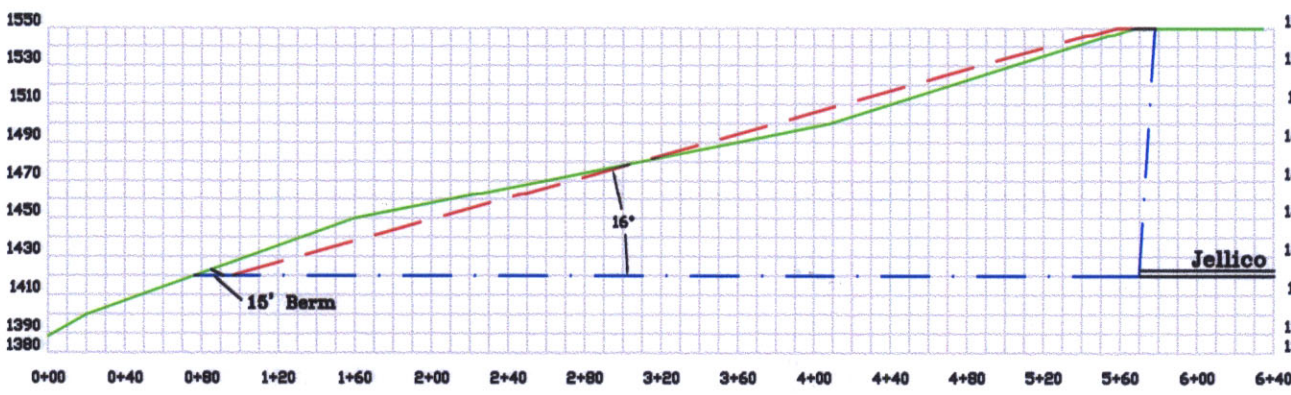
Section 6



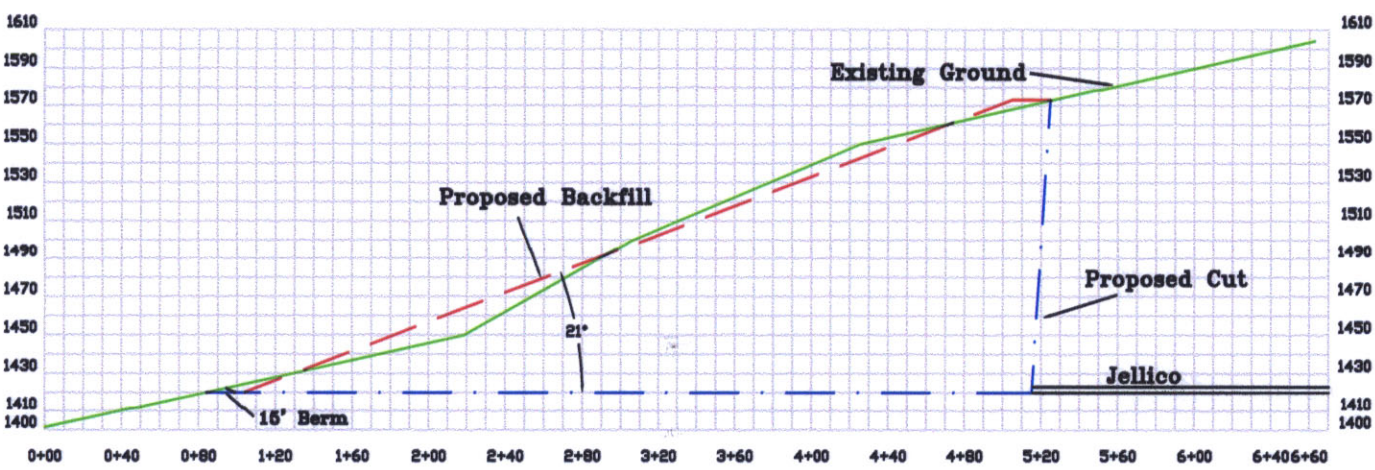
Section 7



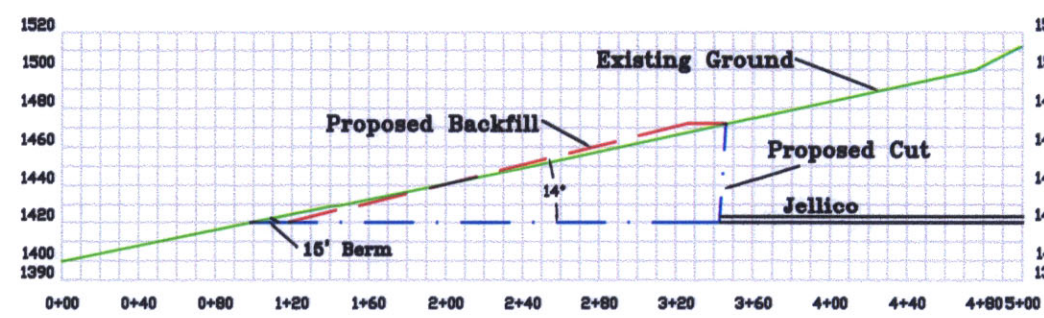
Section 8



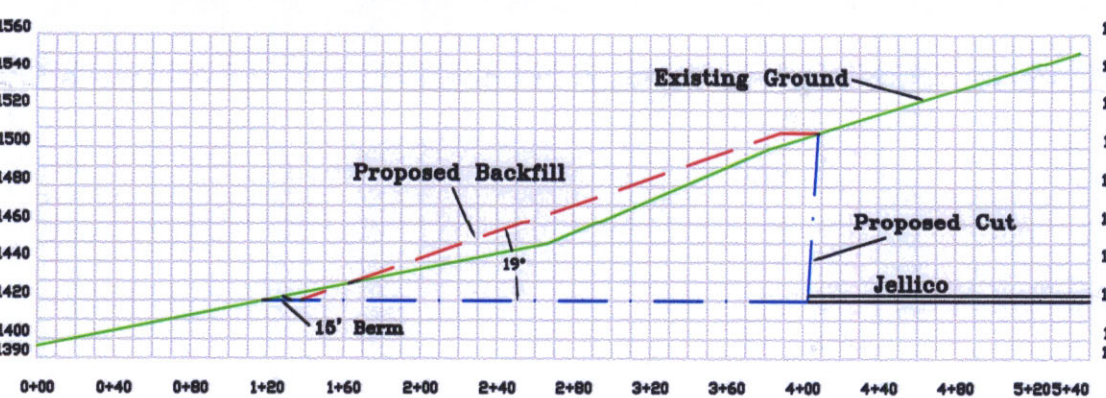
Section 9



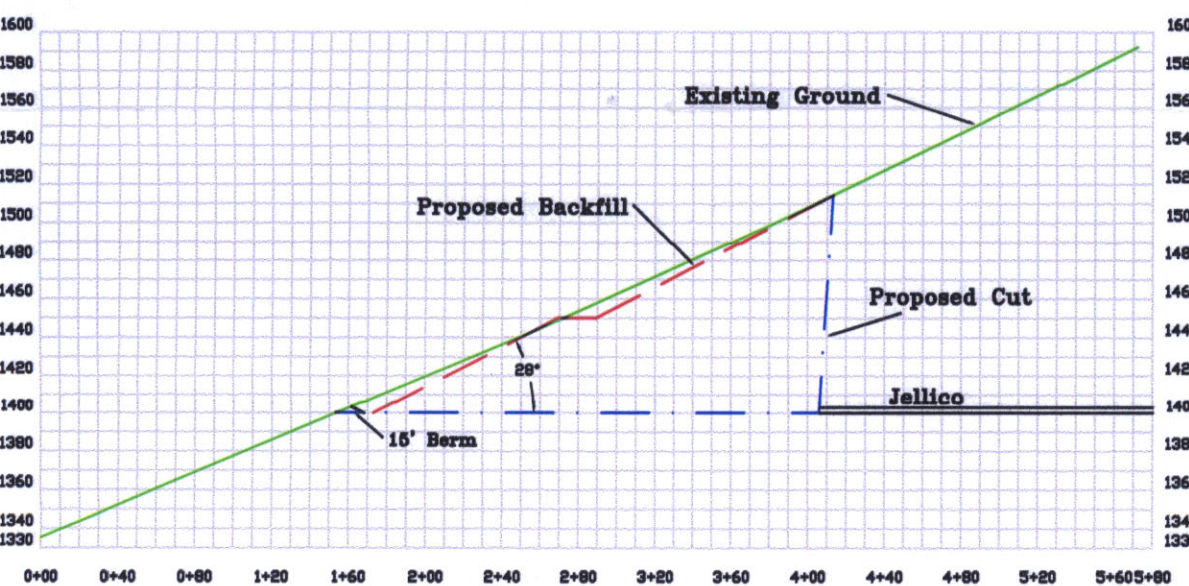
Section 10



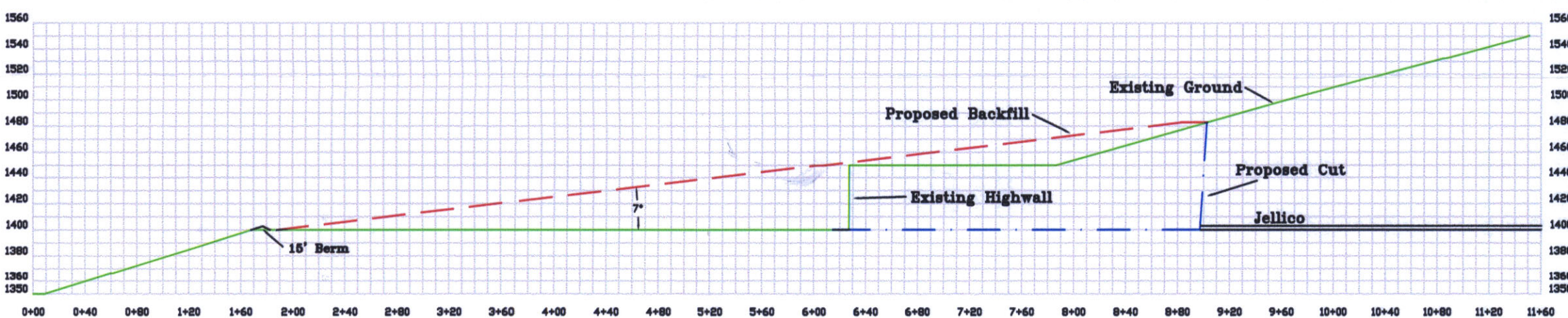
Section 11



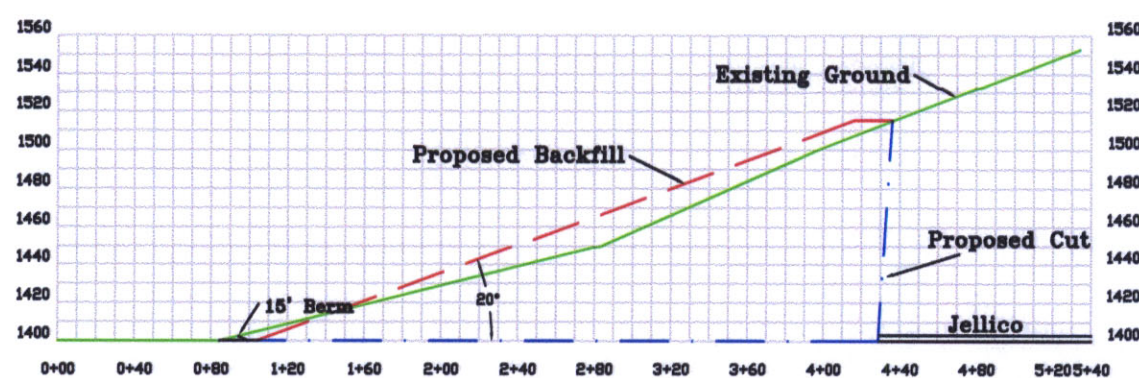
Section 12 Worst Case



Section 13



Section 14



LEGEND
 Original Ground: ———
 Proposed Cut: - - - -
 Proposed Backfill: - . - .

Timothy C. Howard
 P.E. No. 15,317
 Date: 7/1/08
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

		Appolo Fuels, Inc. Permit #807-0365 Backfilling and Grading Cross Sections Attachment 25.1.B	
		Scale: 1" = 100'	

ATTACHMENT 25.2.A

A.O.C. VARIANCE REQUEST

The areas for which an A.O.C. variance is requested are the length of the Jellico seam mining bench that was disturbed prior to August 1977, or approximately 73.84 acres. The location of this area is detailed on the MRP Map.

The applicant meets the criteria for approval for an A.O.C. variance under 405 KAR 18:190, Section 7, Remining. Since the highwall is existing all reasonably available spoil will be used to cover as much of the highwall as technically possible to a minimum of four (4) feet over the Jellico coal seam. The highwall shall be eliminated to the maximum extent technically practicable. The existing highwall has been shown on the cross section drawings in attachment 25.3.

25.3 Provide complete calculations on spoil generation and disposal for the proposed permit area. Include a stability analysis to demonstrate that backfilled benches will meet a minimum static safety factor of 1.3. Submit this information as "Attachment 25.3.A".

See Attachment 25.3.A.

25.4 Describe the measures to be used to seal or manage mine openings, exploration holes, auger holes, bore holes, wells and other openings within the proposed permit area. Provide design specifications for ensuring stability of each each permanent entry seal and down slope barrier. Include all maps, drawings, etc., required to adequately support the description of the proposed measures. Submit this information as "Attachment 25.4.A".

See Attachment 25.4.A.

26. Disposal of Excess Spoil

26.1 Are any excess spoil disposal structures proposed for use in the permit area? YES [] NO. If "YES", provide the following information for each proposed structure:

Facility I.D.	Type of Fill	Storage Volume	Type of Underdrain	Natural Ground Slope	Latitude	Longitude
Hollow Fill #1	Hollow	192,655	Rock Core	15°	36°35'27"	83°53'46"

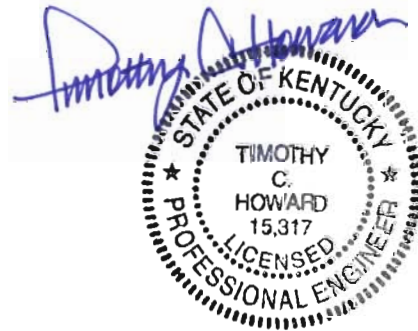
26.2 Did construction of any of the above structures start prior to January 18, 1983? [] YES NO. If "YES", provide the information required by 405 KAR 8:030, or 8:040 Sections 25 for existing structures. Submit this information as "Attachment 26.2.A".

26.3 For each proposed excess spoil disposal structure provide a detailed plan (including, but not limited to, all engineering design calculations, cross-sections, maps and designs). Each plan shall meet the requirements of 405 KAR 8:030, Section 27; 405 KAR 8:040, Section 28; 405 KAR 16:130; and 405 KAR 18:130.

See Attachment 26.3.A

Spoil Summary

Total Volume Cut	8,958,205
Less Void	515,801
Subtotal	<hr/> 8,442,404
Previously Mined Spoil	1,941,888
Spoil Generated	6,500,516
20% Swell	1,300,103
Total Material Generated with 20% Swell	<hr/> 9,742,507
Back Fill	9,538,404
Excess Spoil	<hr/> 204,103
Hollow Fill #1	192,655
Balance	<hr/> 11,448
	5.6%



Volume Report 6/26/2008 15:01

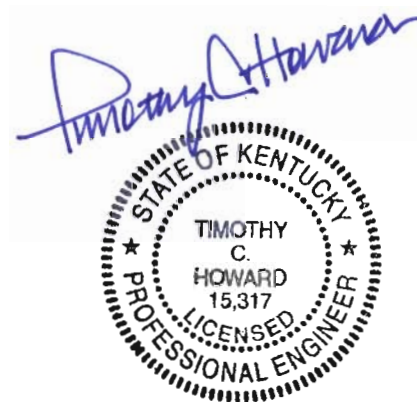
Comparing Grid: C:/Carlson Projects/_surf.grd
and Grid: C:/Carlson Projects/Coal.grd
Grid corner locations: 2543140.10,98368.59 to 2551735.10,103573.59
Grid resolution X: 573, Y: 347 Grid cell size X: 15.00, Y: 15.00
Area in Cut : 4,642,211.4 S.F., 106.57 Acres
Area in Fill: 603,343.2 S.F., 13.85 Acres
Total inclusion area: 5,245,554.6 S.F., 120.42 Acres
Cut to Fill ratio: 107.42
Average Cut Depth: 52.10 Average Fill Depth: 3.73
Max Cut Depth: 174.81 Max Fill Depth: 32.88
Cut (C.Y.) / Area (acres): 74390.50
Fill (C.Y.) / Area (acres): 692.49
Cut volume: 241,871,550.8 C.F., 8,958,205.59 C.Y.
Fill volume: 2,251,553.4 C.F., 83,390.87 C.Y.

8958205
515801.2

Volume Report 6/26/2008 15:05

Comparing Grid: C:/Carlson Projects/_surf.grd
and Grid: C:/Carlson Projects/Coal.grd
Grid corner locations: 2543140.10,98368.59 to 2551735.10,103573.59
Grid resolution X: 573, Y: 347 Grid cell size X: 15.00, Y: 15.00
Area in Cut : 1,468,562.3 S.F., 33.71 Acres
Area in Fill: 530,129.4 S.F., 12.17 Acres
Total inclusion area: 1,998,691.7 S.F., 45.88 Acres
Cut to Fill ratio: 26.26
Average Cut Depth: 35.70 Average Fill Depth: 3.77
Max Cut Depth: 124.99 Max Fill Depth: 34.05
Cut (C.Y.) / Area (acres): 42322.01
Fill (C.Y.) / Area (acres): 1611.69
Cut volume: 52,430,982.7 C.F., 1,941,888.25 C.Y.
Fill volume: 1,996,657.9 C.F., 73,950.29 C.Y.

1941888

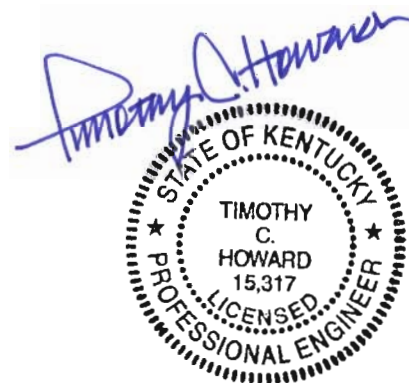


Volume Report 6/26/2008 15:59
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and Grid: C:/Carlson Projects/backfill-3.grd
Grid corner locations: 2543140.10,98368.59 to 2551735.10,103573.59
Grid resolution X: 573, Y: 347 Grid cell size X: 15.00, Y: 15.00
Area in Cut : 13,257.0 S.F., 0.30 Acres
Area in Fill: 5,232,297.7 S.F., 120.12 Acres
Total inclusion area: 5,245,554.6 S.F., 120.42 Acres
Cut to Fill ratio: 0.00
Average Cut Depth: 0.04 Average Fill Depth: 49.22
Max Cut Depth: 1.11 Max Fill Depth: 174.32
Cut (C.Y.) / Area (acres): 0.17
Fill (C.Y.) / Area (acres): 79208.57
Cut volume: 540.5 C.F., 20.02 C.Y.
Fill volume: 257,536,909.1 C.F., 9,538,404.04 C.Y.

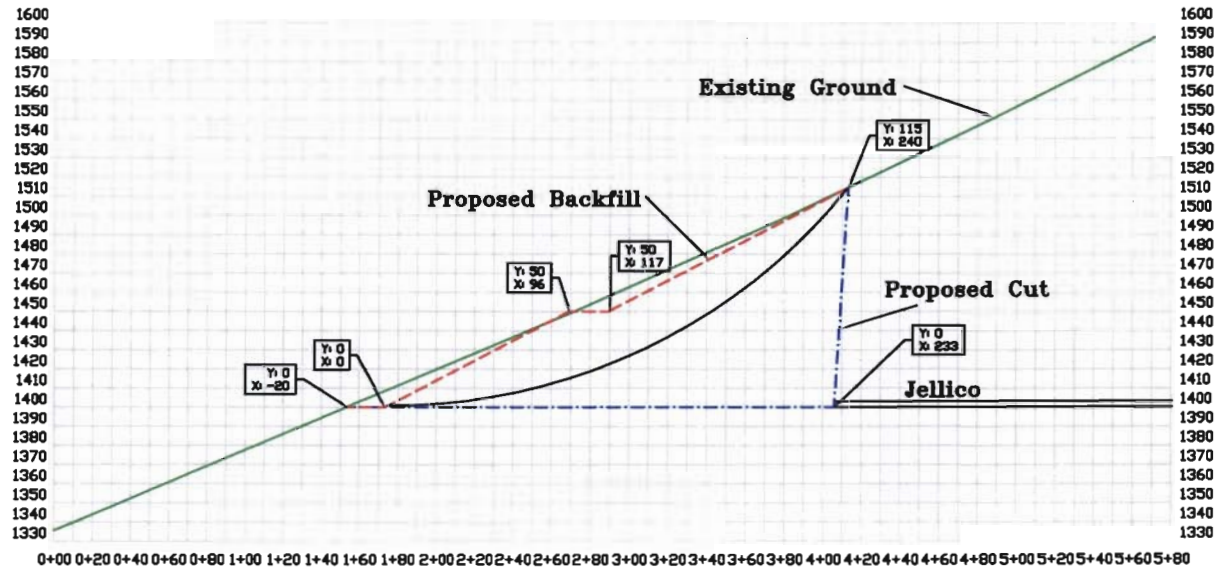
9538404

Volume Report 6/26/2008 15:46
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and Grid: C:/Carlson Projects/_hf.grd
Grid corner locations: 2543140.10,98368.59 to 2551735.10,103573.59
Grid resolution X: 573, Y: 347 Grid cell size X: 15.00, Y: 15.00
Area in Cut : 1,025.7 S.F., 0.02 Acres
Area in Fill: 241,348.5 S.F., 5.54 Acres
Total inclusion area: 242,374.2 S.F., 5.56 Acres
Cut to Fill ratio: 0.00
Average Cut Depth: 0.45 Average Fill Depth: 21.55
Max Cut Depth: 1.62 Max Fill Depth: 70.00
Cut (C.Y.) / Area (acres): 3.06
Fill (C.Y.) / Area (acres): 34624.43
Cut volume: 460.0 C.F., 17.04 C.Y.
Fill volume: 5,201,695.5 C.F., 192,655.39 C.Y.

192655

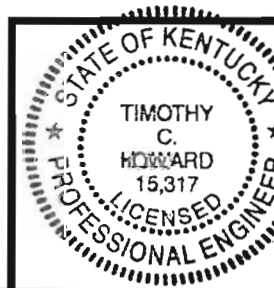


Section 12



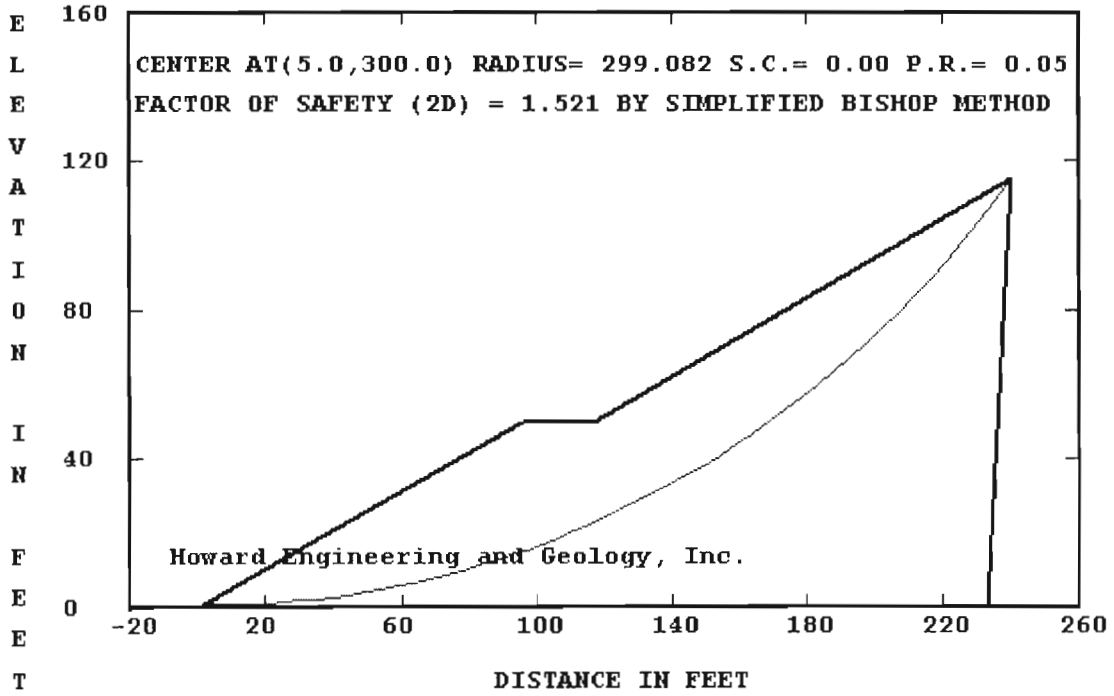
Center at (5.0,300.0) Radius= 299.082 S.C.= 0.00 P.R.= 0.05
 Factor of Safety= 1.521 By Simplified Bisop Method

I, Timothy C. Howard, P.E. No. 15,317
 Date: 7/1/08
 hereby certify in accordance with 405 KAR 7:040, Section 10,
 that this document is correct as determined by accepted
 engineering practices and includes all information required
 of it by Chapter 350 and KAR Title 405.

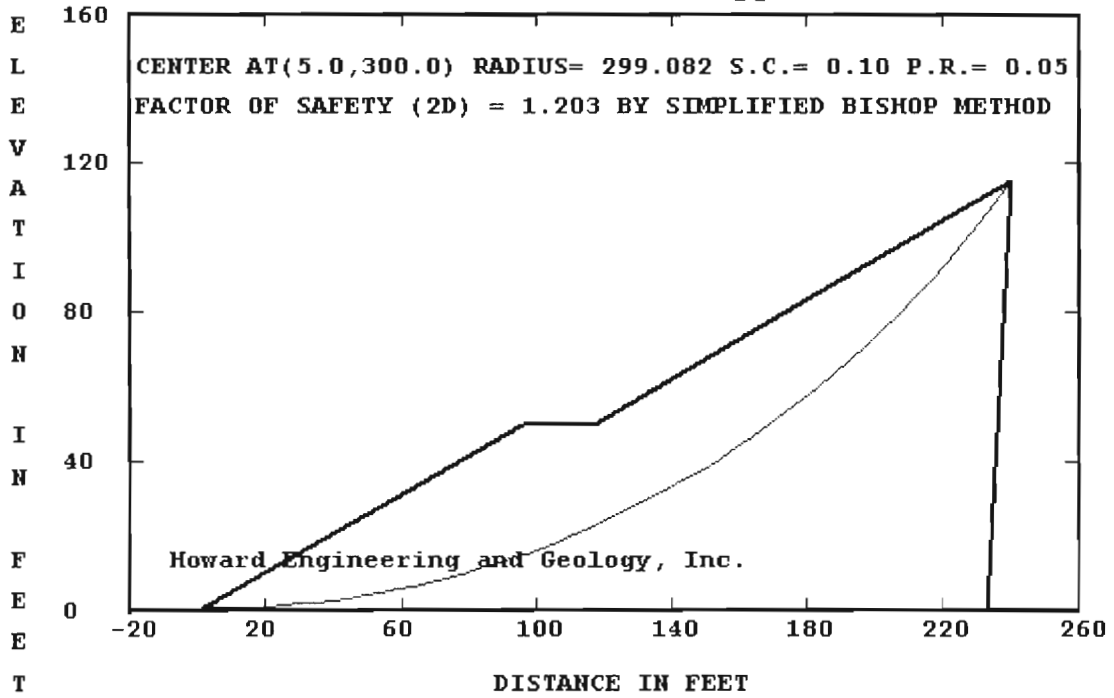


Appolo Fuels, Inc.	
Permit No. 807-0365 Worst Case Backfill Stability Analysis Cross Section 12 Attachment 26.3.A	
Scale: 1" = 100'	Page No. 1 of 1
Prepared by: Howard Engineering & Geology, Inc.	

Section 12 807-0365 Appolo Fuels



Section 12 807-0365 Appolo Fuels



Timothy C. Howard

STATE OF KENTUCKY
★ TIMOTHY C. HOWARD 15,317 ★
PROFESSIONAL ENGINEER LICENSED

Section 12.TXT

REAME (ROTATIONAL EQUILIBRIUM ANALYSIS OF MULTILAYERED EARTHWORKS)
THIS 2008 VERSION IS LICENSED BY CIVIL ENGINEERING SOFTWARE CENTER TO

Howard Engineering and Geology, Inc.

INPUT FILE NAME -R:\Section 12.DAT

TITLE -Section 12 807-0365 Appolo Fuels

NO. OF STATIC AND SEISMIC CASES (NCASE) = 2

NO. OF NONCIRCULAR FAILURE SURFACES (NNS) = 0

TWO-DIMENSIONAL ANALYSIS (THREED = 0)

ANALYSIS BY DETERMINISTIC METHOD (PROB = 0)

CASE NO. 1 SEISMIC COEFFICIENT (SEIC) =0.000

NO. OF BOUNDARY LINES (NBL) = 2

NO. OF POINTS ON BOUNDARY LINE 1 = 3

1	X COORD.=-20	Y COORD.= 0
2	X COORD.= 233	Y COORD.= 0
3	X COORD.= 240	Y COORD.= 115

NO. OF POINTS ON BOUNDARY LINE 2 = 5

1	X COORD.=-20	Y COORD.= 0
2	X COORD.= 0	Y COORD.= 0
3	X COORD.= 96	Y COORD.= 50
4	X COORD.= 117	Y COORD.= 50
5	X COORD.= 240	Y COORD.= 115

LINE NO. AND SLOPE OF EACH SEGMENT ARE:

1	0.000	16.429		
2	0.000	0.521	0.000	0.528

MIN. DEPTH OF TALLEST SLICE (DMIN) = 0

NO. OF RADIUS CONTROL ZONES (NRCZ) = 1

RADIUS DECREMENT (RDEC) FOR ZONE 1 = 0

NO. OF CIRCLES (NCIR) FOR ZONE 1 = 5

NO. OF BOTTOM LINES (NOL) FOR ZONE 1 = 1

LINE NO. (LINO) BEG. NO. (NBP) END NO. (NEP)

1	1	3
---	---	---

ENGLISH UNITS ARE USED WITH DISTANCE IN FEET AND FORCE IN POUND.

SOIL No.	ENVELOPE (TSSE)	COHESION (C)	FRIC. ANGLE (PHID)	UNIT WEIGHTT (G)
1	1	200.000	30.000	125.000

USE PORE PRESSURE RATIO

USE GRID

NO. OF SLICES (NSLI) = 10

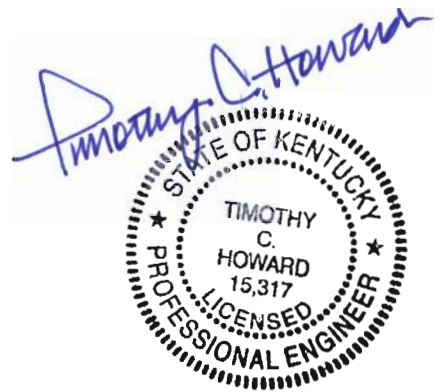
NO. OF ADD. CIRCLES (NAC) = 3

ANALYSIS BY SIMPLIFIED BISHOP METHOD (MTHD=2)

NUMBER OF FORCES (NFO)= 0

SOFT SOIL NUMBER (SSN)= 0

PORE PRESSURE RATIO (RU) = 0.05



Section 12.TXT

NO. OF SOILS WITH DIFFERENT PORE PRESSURE RATIO (NSDP) = 0
 INPUT COORD. OF GRID POINTS 1,2,AND 3

POINT 1 X COORD. = -40 Y COORD. = 300
 POINT 2 X COORD. = -40 Y COORD. = 100
 POINT 3 X COORD. = 120 Y COORD. = 100

X INCREMENT (XINC) = 20 Y INCREMENT (YINC) = 20
 NO. OF DIVISIONS BETWEEN POINTS 1 AND 2 (ND12) = 5
 NO. OF DIVISIONS BETWEEN POINTS 2 AND 3 (ND23) = 4
 ONLY A SUMMARY TABLE IS PRINTED (NPRT = 0)
 SLICES WILL BE SUBDIVIDED

AUTOMATIC SEARCH WILL FOLLOW AFTER GRID

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		LOWEST F.S.	WARNING
		TOTAL	CRITIC.	RADIUS	
-40.0	300.0	5	1	300.666	0
-40.0	260.0	5	1	260.768	0
-40.0	220.0	5	1	220.907	0
-40.0	180.0	11	1	181.108	0
-40.0	140.0	1	1	141.421	0
-40.0	100.0	1	1	101.980	0
0.0	300.0	5	1	300.000	0
0.0	260.0	5	1	260.000	0
0.0	220.0	5	1	220.000	0
0.0	180.0	5	1	180.000	0
0.0	140.0	5	1	140.000	0
0.0	100.0	5	1	100.000	0
40.0	300.0	5	1	272.443	0
40.0	260.0	5	1	247.032	0
40.0	220.0	5	1	220.000	0
40.0	180.0	5	1	180.000	0
40.0	140.0	5	1	140.000	0
40.0	100.0	11	7	85.107	0
80.0	300.0	5	1	244.592	0
80.0	260.0	11	6	212.685	0
80.0	220.0	5	1	191.377	0
80.0	180.0	5	1	172.699	0
80.0	140.0	11	8	132.712	0
80.0	100.0	5	1	100.000	0
120.0	300.0	5	1	220.511	0
120.0	260.0	5	1	188.215	0
120.0	220.0	5	1	159.452	0
120.0	180.0	11	7	129.592	0
120.0	140.0	8	5	87.052	0
120.0	100.0	1	1	100.000	0

Timothy C. Howard
 STATE OF KENTUCKY
 TIMOTHY C. HOWARD
 15,317
 LICENSED PROFESSIONAL ENGINEER

GRID IS EXPANDED AS FOLLOWS SO MINIMUM FACTOR OF SAFETY FALLS WITHIN THE GRID

-40.0	340.0	5	1	340.588	1.676	0
0.0	340.0	5	1	328.976	1.571	0
40.0	340.0	11	8	299.740	1.756	0
80.0	340.0	5	1	276.089	3.174	0
120.0	340.0	1	1	255.000	1000.000	0
-80.0	340.0	5	1	345.254	1.934	0
-80.0	300.0	5	1	305.941	2.814	0

Section 12.TXT						
-80.0	260.0	1	1	266.833	1000.000	0
-80.0	220.0	1	1	228.035	1000.000	0
-80.0	180.0	1	1	189.737	1000.000	0
-80.0	140.0	1	1	152.316	1000.000	0
-80.0	100.0	1	1	116.619	1000.000	0

LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-80.000	-40.000	0.000	40.000	80.000	120.000
340.000	1.934	1.676	1.571	1.756	3.174	1000.000
300.000	2.814	0.000	1.529	1.642	1.881	6.866
260.000	1000.000	1.707	1.597	1.571	1.616	2.360
220.000	1000.000	1.790	1.661	1.599	1.625	1.604
180.000	1000.000	2.809	1.666	1.689	1.712	1.512
140.000	1000.000	1000.000	1.564	1.795	1.888	1.758
100.000	1000.000	1000.000	1.664	1.751	2.217	1000.000

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 4 CENTERS

FACTOR OF SAFETY = 0.000 AT (-40.000,300.000)
 FACTOR OF SAFETY = 1.571 AT (40.000,260.000)
 FACTOR OF SAFETY = 1.512 AT (120.000,180.000)
 FACTOR OF SAFETY = 1.564 AT (0.000,140.000)

AUTOMATIC SEARCH WILL BE MADE ONLY ON THE CENTER WITH THE SMALLEST F.S.

AT POINT (-40.0 , 300.0) RADIUS 300.666
 THE MINIMUM FACTOR OF SAFETY IS 0.000

FACTORS OF SAFETY BASED ON SEARCH

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

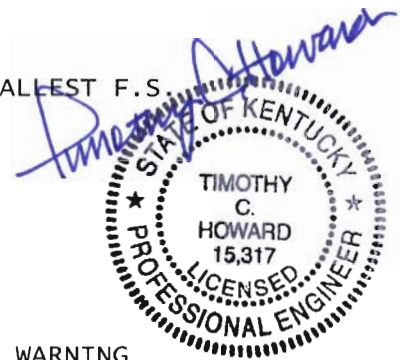
CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE TOTAL	CRITIC. RADIUS	LOWEST F.S.	WARNING
-40.0	300.0	5	1 300.666	1.763	0
-20.0	300.0	5	1 300.000	1.618	0
0.0	300.0	5	1 300.000	1.529	0
20.0	300.0	5	1 287.446	1.563	0
0.0	320.0	5	1 315.634	1.532	0
0.0	280.0	5	1 280.000	1.563	0
5.0	300.0	5	1 299.082	1.521	0
10.0	300.0	5	1 295.169	1.534	0
5.0	305.0	5	1 302.200	1.526	0
5.0	295.0	5	1 295.000	1.523	0

AT POINT (5.0 , 300.0) RADIUS 299.082

THE MINIMUM FACTOR OF SAFETY IS 1.521

SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	1	23.820	6.094	0.000	.029	.181E+05	.172E+05	.440E+07	.158E+06
2	1	23.820	16.853	0.000	.109	.502E+05	.477E+05	.962E+07	.163E+07
3	1	23.820	25.678	0.000	.188	.765E+05	.726E+05	.138E+08	.431E+07
4	1	22.743	32.364	0.000	.266	.920E+05	.874E+05	.160E+08	.733E+07
5	1	1.077	34.729	0.000	.306	.468E+04	.444E+04	.798E+06	.428E+06
6	1	19.923	31.137	0.000	.341	.775E+05	.737E+05	.132E+08	.791E+07
7	1	3.898	27.554	0.000	.381	.134E+05	.128E+05	.229E+07	.153E+07
8	1	23.820	28.752	0.000	.427	.856E+05	.813E+05	.143E+08	.109E+08



Section 12.TXT

9	1	23.820	28.738	0.000	.507	.856E+05	.813E+05	.138E+08	.130E+08
10	1	23.820	25.744	0.000	.587	.767E+05	.728E+05	.119E+08	.134E+08
11	1	23.820	19.146	0.000	.666	.570E+05	.542E+05	.888E+07	.114E+08
12	1	23.820	7.907	0.000	.746	.235E+05	.224E+05	.471E+07	.525E+07
								SUM	.114E+09 .773E+08

AT CENTER (5.000 , 300.000) WITH RADIUS 299.082 AND SEIS. COEFF. 0.00
 FACTOR OF SAFETY BY NORMAL METHOD IS 1.470
 FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 1.521

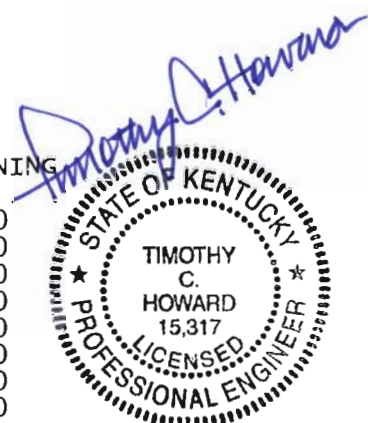
CASE NO. 2 SEISMIC COEFFICIENT (SEIC) =0.100

AUTOMATIC SEARCH WILL FOLLOW AFTER GRID

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		RADIUS	LOWEST F.S.	WARNING
		TOTAL	CRITIC.			
-40.0	300.0	5	1	300.666	1.385	0
-40.0	260.0	5	1	260.768	1.356	0
-40.0	220.0	5	1	220.907	1.450	0
-40.0	180.0	11	1	181.108	2.308	0
-40.0	140.0	1	1	141.421	1000.000	0
-40.0	100.0	1	1	101.980	1000.000	0
0.0	300.0	5	1	300.000	1.208	0
0.0	260.0	5	1	260.000	1.258	0
0.0	220.0	5	1	220.000	1.305	0
0.0	180.0	5	1	180.000	1.315	0
0.0	140.0	5	1	140.000	1.258	0
0.0	100.0	5	1	100.000	1.350	0
40.0	300.0	5	1	272.443	1.299	0
40.0	260.0	5	1	247.032	1.242	0
40.0	220.0	5	1	220.000	1.266	0
40.0	180.0	5	1	180.000	1.333	0
40.0	140.0	5	1	140.000	1.413	0
40.0	100.0	11	10	85.107	1.404	0
80.0	300.0	5	1	244.592	1.533	0
80.0	260.0	5	1	215.928	1.333	0
80.0	220.0	5	1	191.377	1.289	0
80.0	180.0	11	8	166.441	1.357	0
80.0	140.0	11	2	130.282	1.492	0
80.0	100.0	11	2	90.500	1.740	0
120.0	300.0	5	1	220.511	5.725	0
120.0	260.0	5	1	188.215	1.936	0
120.0	220.0	5	1	159.452	1.302	0
120.0	180.0	11	7	129.592	1.226	0
120.0	140.0	11	11	89.272	1.357	0
120.0	100.0	1	1	100.000	1000.000	0



GRID IS EXPANDED AS FOLLOWS SO MINIMUM FACTOR OF SAFETY FALLS WITHIN THE GRID

-40.0	340.0	5	1	340.588	1.318	0
0.0	340.0	5	1	328.976	1.241	0
40.0	340.0	11	8	299.740	1.428	0
80.0	340.0	5	1	276.089	2.621	0
120.0	340.0	1	1	255.000	1000.000	0

LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

Section 12.TXT

COORDINATE	-40.000	0.000	40.000	80.000	120.000
340.000	1.318	1.241	1.428	2.621	1000.000
300.000	1.385	1.208	1.299	1.533	5.725
260.000	1.356	1.258	1.242	1.333	1.936
220.000	1.450	1.305	1.266	1.289	1.302
180.000	2.308	1.315	1.333	1.357	1.226
140.000	1000.000	1.258	1.413	1.492	1.357
100.000	1000.000	1.350	1.404	1.740	1000.000

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 4 CENTERS

FACTOR OF SAFETY = 1.208 AT (0.000,300.000)
 FACTOR OF SAFETY = 1.242 AT (40.000,260.000)
 FACTOR OF SAFETY = 1.226 AT (120.000,180.000)
 FACTOR OF SAFETY = 1.258 AT (0.000,140.000)

AUTOMATIC SEARCH WILL BE MADE ONLY ON THE CENTER WITH THE SMALLEST F.S.

AT POINT (0.0 , 300.0) RADIUS 300.000
 THE MINIMUM FACTOR OF SAFETY IS 1.208

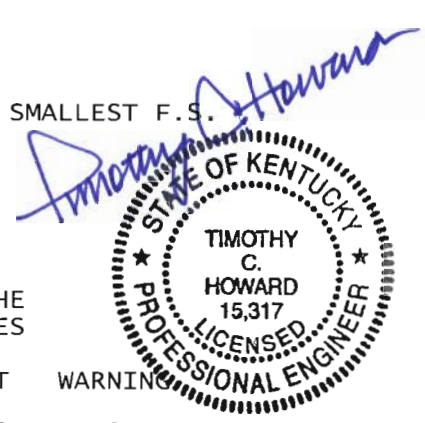
FACTORS OF SAFETY BASED ON SEARCH

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		LOWEST	WARNING	
		TOTAL	CRITIC.	F.S.		
0.0	300.0	5	1	300.000	1.208	0
20.0	300.0	5	1	287.446	1.235	0
-20.0	300.0	5	1	300.000	1.274	0
0.0	320.0	5	1	315.634	1.210	0
0.0	280.0	5	1	280.000	1.233	0
5.0	300.0	5	1	299.082	1.203	0
10.0	300.0	5	1	295.169	1.212	0
5.0	305.0	5	1	302.200	1.207	0
5.0	295.0	5	1	295.000	1.204	0

AT POINT (5.0 , 300.0) RADIUS 299.082

THE MINIMUM FACTOR OF SAFETY IS 1.203



SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT	
1	1	23.820	6.094	0.000	.029	.181E+05	.172E+05	.439E+07	.695E+06	
2	1	23.820	16.853	0.000	.109	.502E+05	.477E+05	.953E+07	.308E+07	
3	1	23.820	25.678	0.000	.188	.765E+05	.726E+05	.135E+08	.646E+07	
4	1	22.743	32.364	0.000	.266	.920E+05	.874E+05	.156E+08	.983E+07	
5	1	1.077	34.729	0.000	.306	.468E+04	.444E+04	.775E+06	.553E+06	
6	1	19.923	31.137	0.000	.341	.775E+05	.737E+05	.128E+08	.997E+07	
7	1	3.898	27.554	0.000	.381	.134E+05	.128E+05	.220E+07	.188E+07	
8	1	23.820	28.752	0.000	.427	.856E+05	.813E+05	.137E+08	.131E+08	
9	1	23.820	28.738	0.000	.507	.856E+05	.813E+05	.130E+08	.151E+08	
10	1	23.820	25.744	0.000	.587	.767E+05	.728E+05	.112E+08	.152E+08	
11	1	23.820	19.146	0.000	.666	.570E+05	.542E+05	.826E+07	.126E+08	
12	1	23.820	7.907	0.000	.746	.235E+05	.224E+05	.442E+07	.571E+07	
								SUM	.109E+09	.942E+08

AT CENTER (5.000 , 300.000) WITH RADIUS 299.082 AND SEIS. COEFF. 0.10
 FACTOR OF SAFETY BY NORMAL METHOD IS 1.162
 FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 1.203

Section 12.TXT

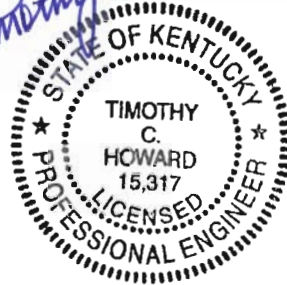
SUMMARY OF STABILITY ANALYSIS

FACTOR OF SAFETY IS DETERMINED BY SIMPLIFIED BISHOP METHOD
NUMBER OF CASES = 2

CASE 1 SEISMIC COEFFICIENT = 0
FACTOR OF SAFETY = 1.521

CASE 2 SEISMIC COEFFICIENT = 0.1
FACTOR OF SAFETY = 1.203

Timothy C. Howard



ATTACHMENT 25.4.A

AUGER/HIGHWALL MINING HOLE SEALING

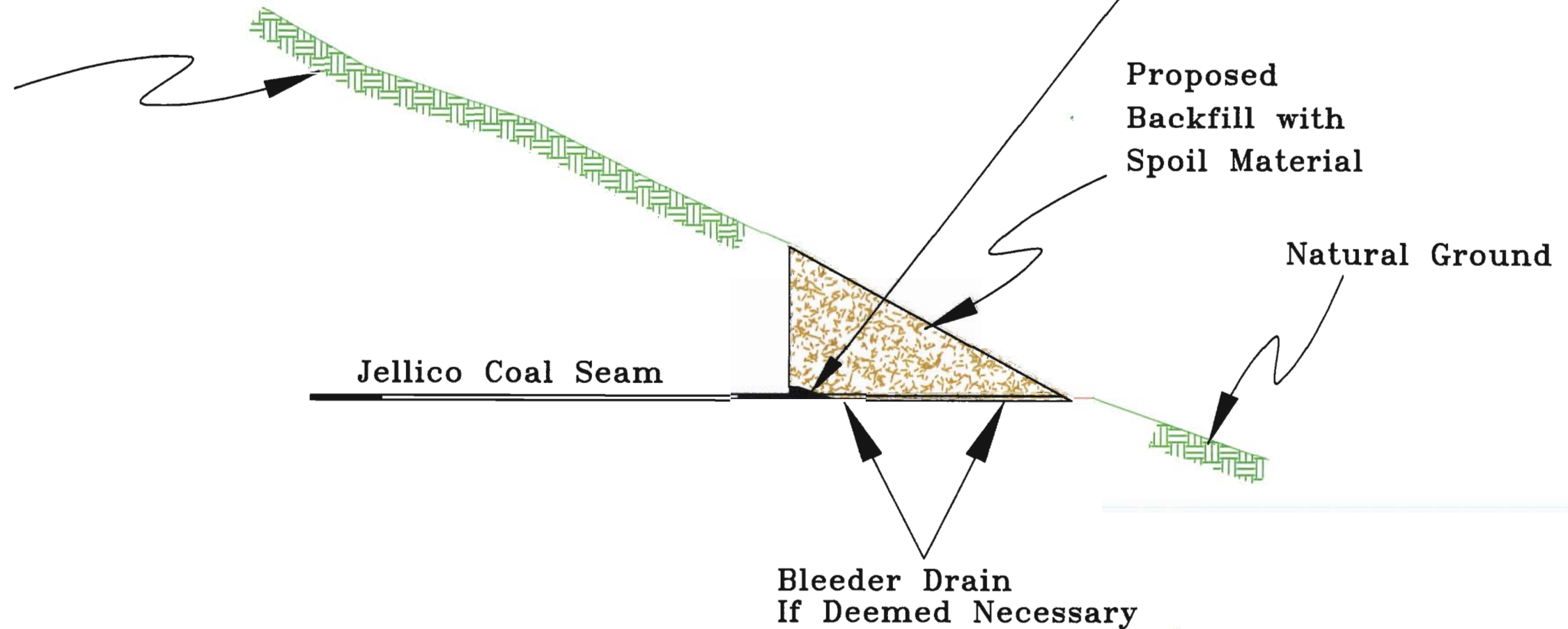
After all mining activity has been completed auger/highwall mining hole, well; core drill hole or other exploration hole will be sealed. This will prevent acid or other toxic drainage from entering the ground or surface waters and will protect the hydrologic balance.

The auger/highwall mining holes will be sealed with the best available, non-combustible, non-permeable material available. Two scenarios are proposed for the sealing of auger/highwall mining holes as detailed in the drawings in this attachment. One is a dry seal to be used in areas where the drainage of the auger/highwall mining holes is not deemed necessary and the other is a wet seal to be used in areas deemed necessary to allow for drainage of the auger/highwall mining holes. The application of one or the other seals will be made as conditions in the field warrant.

The attached drawings detail the construction of these seals.

Mine Plug, 4' Feet min. above seam,
and a minimum of 20' into the workings
To be installed prior to backfilling

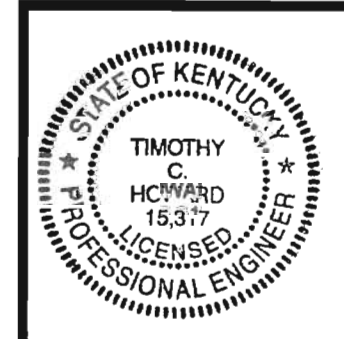
Natural Ground



Notes:

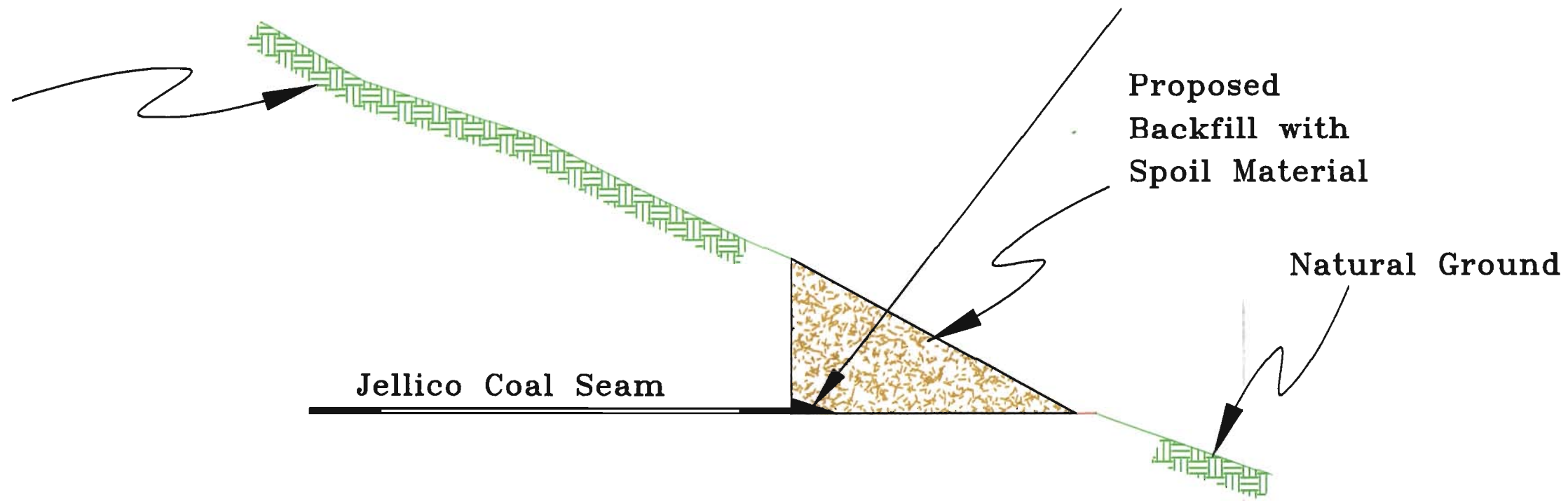
- I. Bleeders to be constructed in low spots as dictated by localized dip.
- II. Bleeders to be sloped 1 to 2% away from highwall.
- III. Bleeders to be constructed only of durable rock.
- IV. Bleeders will be routed to natural drainage courses as practical with dip of coal.
- V. Bleeders will be routed into sediment control structures.
- VI. Bleeders will be constructed prior to backfilling of the highwall.

I, Timothy C. Howard, P.E. No. 15,317
Date: 7/1/08
hereby certify in accordance with 405 KAR 7:040, Section 10,
that this document is correct as determined by accepted
engineering practices and includes all information required
of it by Chapter 350 and KAR Title 405.

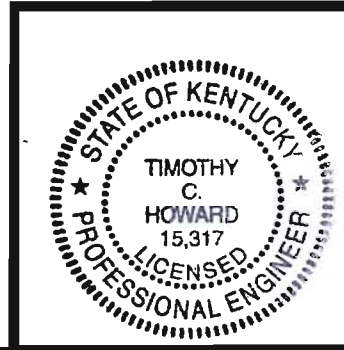


Appolo Fuels, Inc.
Permit No. 807-0365
Typical Mine Opening Wet Seal, If Deemed Necessary,
After Contour Strip and Auger or Highwall Miner
Scale: 1" = 100' | Page No. 1 of 1
Prepared by:
Howard Engineering & Geology, Inc.

Natural Ground



I, Timothy C. Howard, P.E. No. 15,317
Date: 7/1/08
hereby certify in accordance with 405 KAR 7:040, Section 10,
that this document is correct as determined by accepted
engineering practices and includes all information required
of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
Permit No. 807-0365
Typical Mine Opening Dry Seal
After Contour Strip and Auger or Highwall Miner
Scale: 1" = 100' | Page No. 1 of 1
Prepared by:
Howard Engineering & Geology, Inc.

ATTACHMENT 26.3.A

Hollow Fill #1

The entire area of the proposed hollow fill area was surveyed to determine the location and significance of any seeps, springs or ground water flow. The survey was conducted during the wet weather season. The survey revealed no seeps, springs or ground water flow within the proposed spoil storage area.

Prior to placement of material in the hollow fill area the vegetation will be cleared and grubbed from the proposed spoil storage area with the material being disposed of either by windrowing the trees along the outside edge and/or at the bottom of the hollow fill area. The material may also be alternately disposed of by burning and mixing of the ashes with the spoil. After the vegetation and woody material is removed, available topsoil will be stripped from the site and will be stored. This available topsoil will be supplemented with selected overburdens from the mining operation to produce an acceptable Alternate Topsoil Material. Surface drainage will be diverted around the fill through a series of constructed diversion ditches. These diversion ditches will be constructed as the fill is advanced, with the final diversions being constructed to 100 year-24 hour design capacity upon completion of material placement. The diversion ditches with a flow of less than 5.0 f.p.s. will be vegetated and those ditches with a flow greater than 5.0 f.p.s. will be lined with durable rock to prevent the effects of erosion.

Durable rock from the surface mining operation will be used to construct the underdrain. The underdrain will be constructed by conventional methods in the areas shown on the profile of the design drawing and by natural segregation by end-dumping on the remainder of the underdrain. The underdrain will be covered by a minimum of four (4) feet of material to prevent equipment from crushing the underdrain and to prevent degraded material from being placed around the underdrain. The size of the underdrain will be 10' X 4' if constructed of sandstone or 16' X 8' if constructed of shale. The durable rock will have no more than 10% of the rock less than 12" in diameter and no single rock will be larger than 4'.

A rock check dam will be constructed below the toe of the fill in the location shown on the MRP map and plan view drawing. The rock check dam will be inspected on a regular basis and periodic removal of sediment material as deemed necessary.

The hollow fill area itself will also be constructed by end-dumping the material. The outslope will be graded to a slope of 2:1. A terrace will be constructed at 50 feet in elevation. The

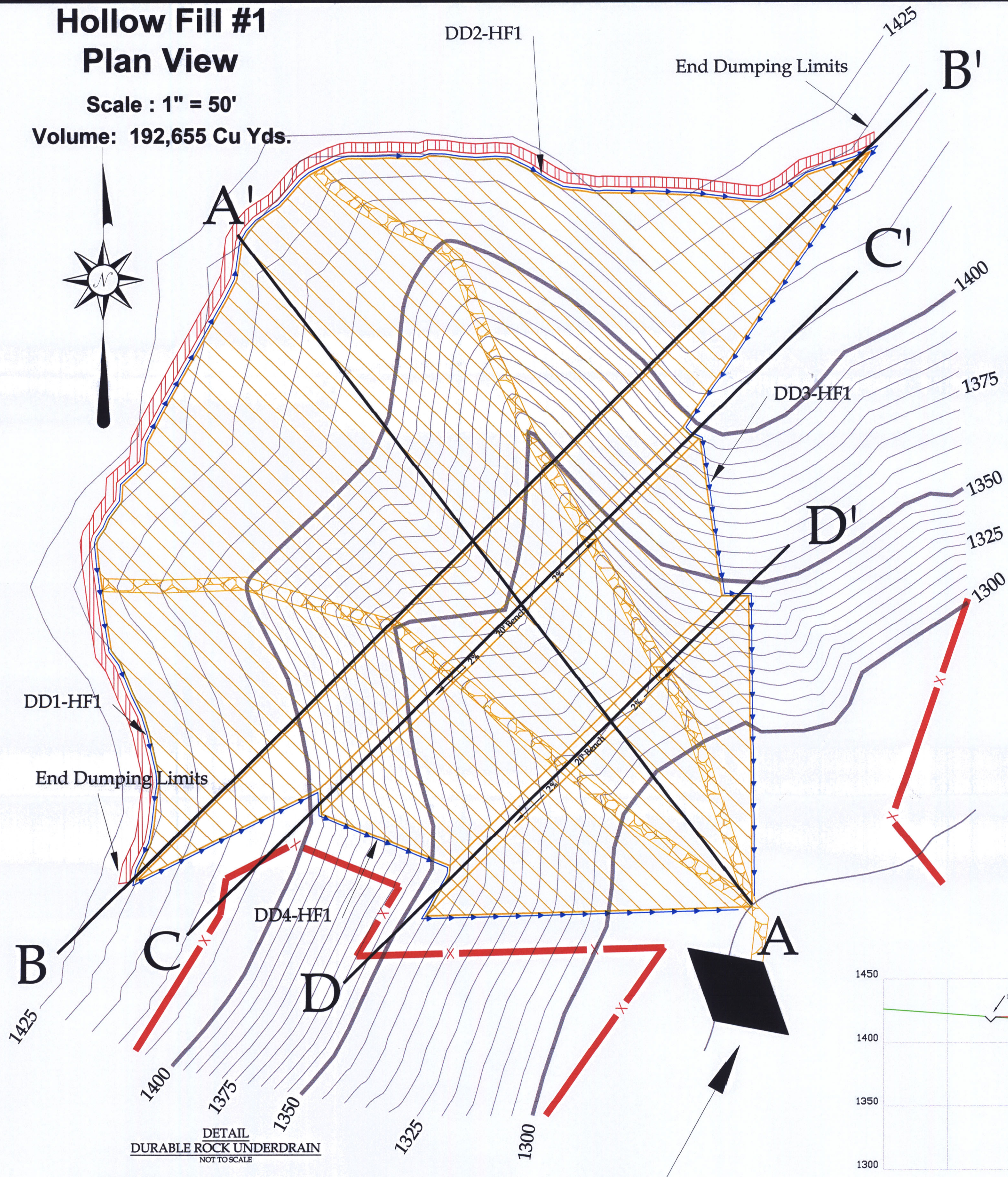
ATTACHMENT 26.3.A

terrace will be sloping from the face of the hollow fill and toward the lateral diversion ditches. The outslope will be vegetated in according to Item 22. Once the hollow fill has been completed a Certificate of Construction will be submitted addressing any deviations, if any, from the proposed design.

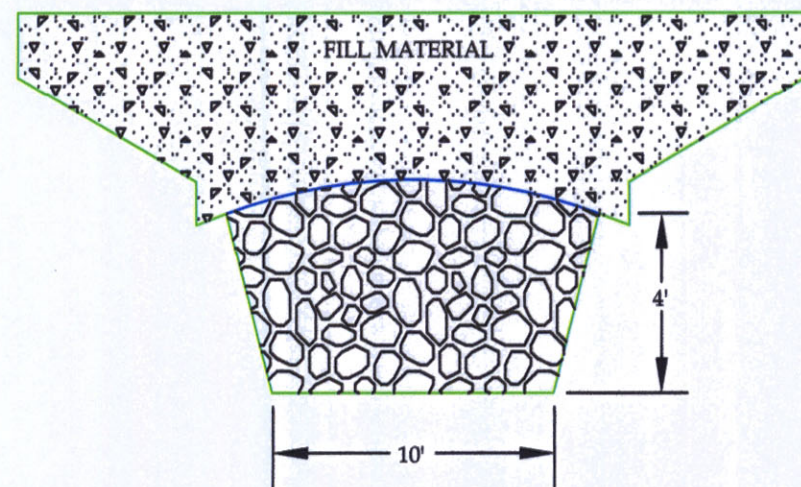
We are providing the plans, cross-sections, stability analysis, etc. for Hollow Fill #1 on the following pages as part of this attachment.

Hollow Fill #1 Plan View

Scale : 1" = 50'
Volume: 192,655 Cu Yds.



DETAIL
DURABLE ROCK UNDERDRAIN
NOT TO SCALE



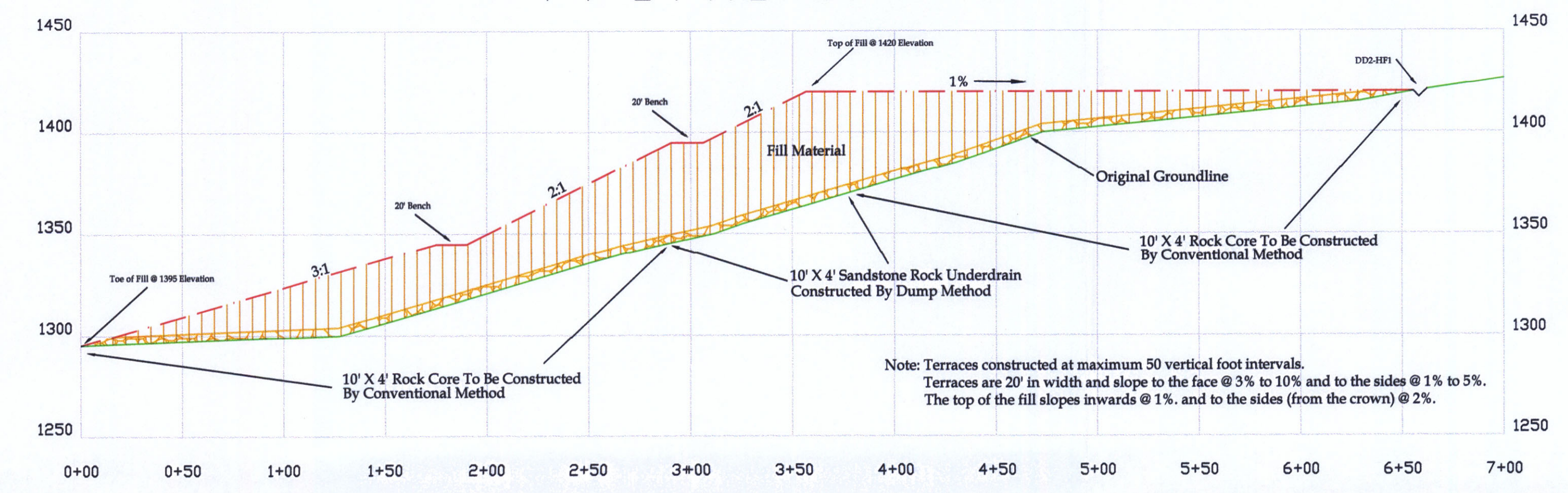
NOTE: THE ROCK IN THE DRAIN WILL NOT HAVE ROCKS GREATER THAN 25% OF THE WIDTH OF THE UNDERDRAIN AND NO MORE THAN 10% OF THE ROCK WILL BE LESS THAN 12" IN SIZE AND PLACED TO FORM A NATURAL FILTER SYSTEM WHICH WILL PREVENT CLOGGING OF DRAINAGE VOIDS IN THE CORE DRAIN MATERIAL.

NOTE:

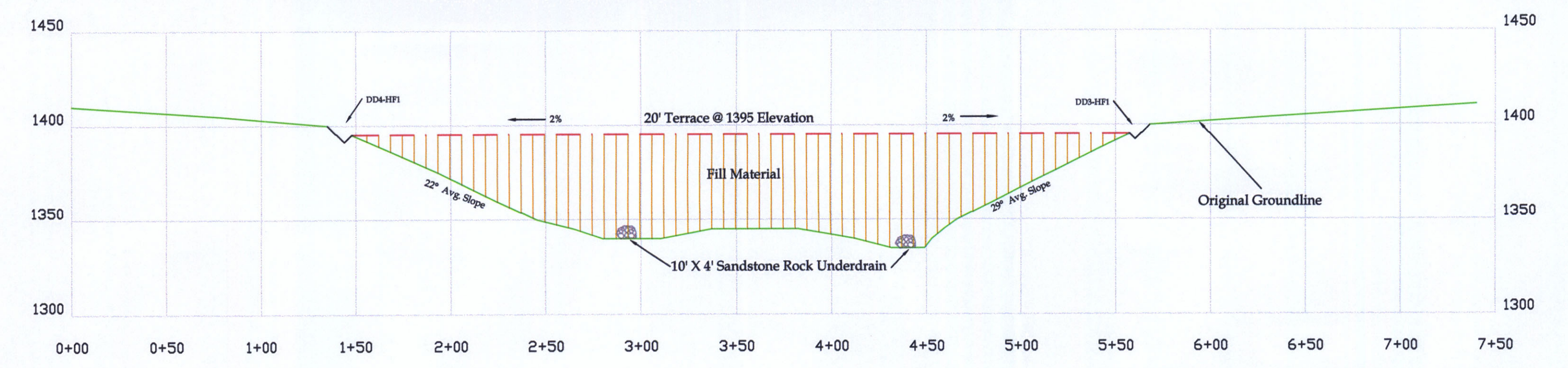
LESS THAN 1,000,000 YD ³	WIDTH	HEIGHT
SANDSTONE	10	4
SHALE	16	8
GREATER THAN 1,000,000 YD ³		
SANDSTONE	16	8
SHALE	16	16

Rock Check Dam

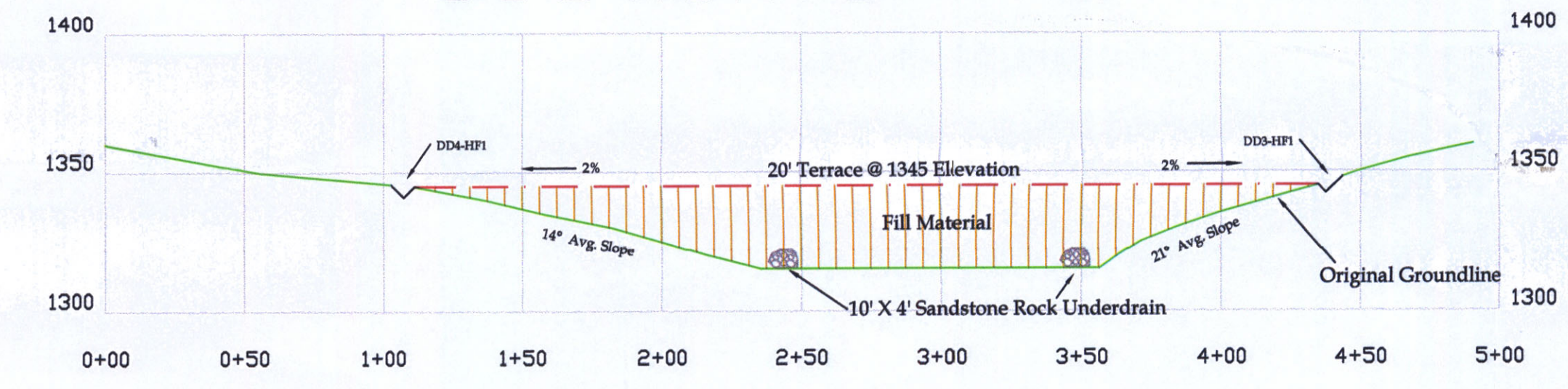
Profile A - A'



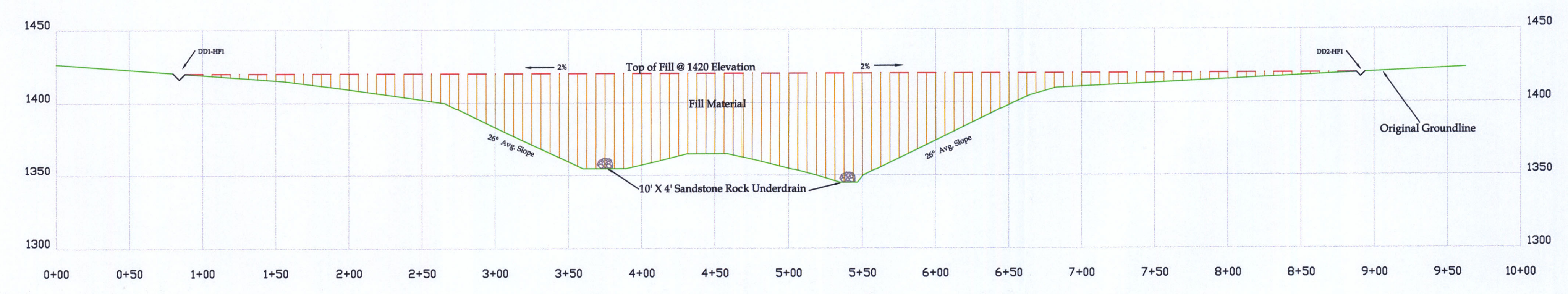
Section C - C'



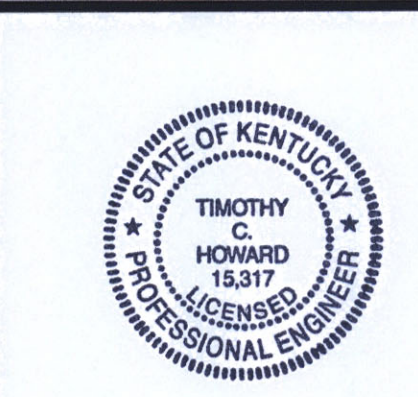
Section D - D'



Section B - B'



Timothy C. Howard, P.E. No. 15,317
Date: 7/1/08
I hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



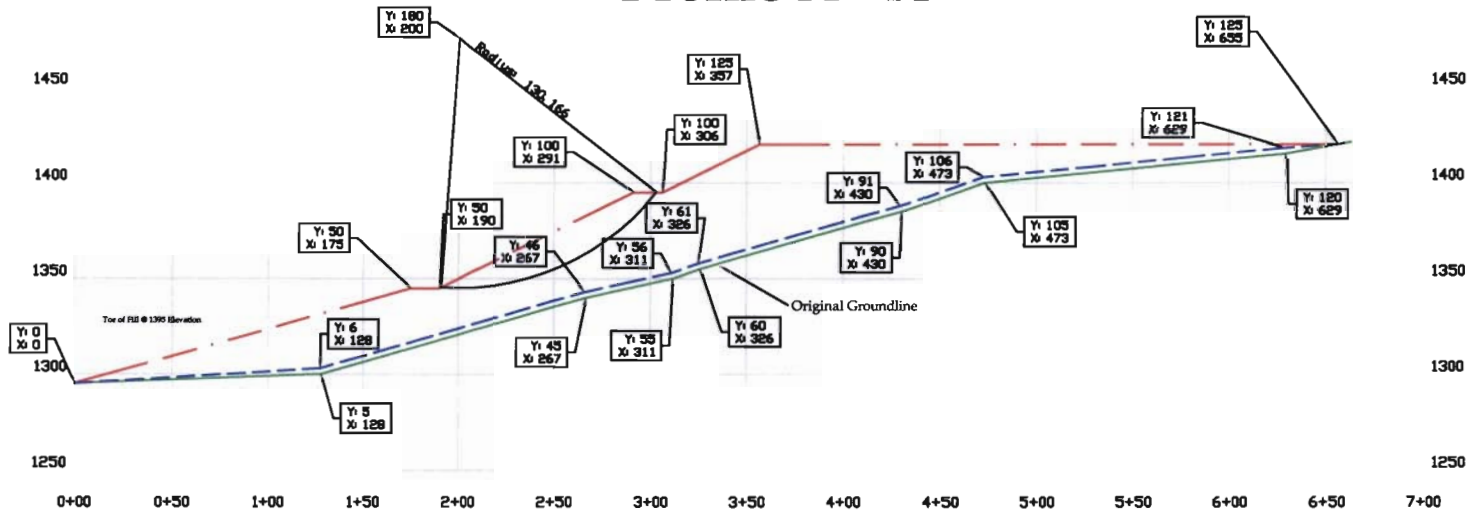
Appolo Fuels, Inc.
Hollowfill #1 - Plan View
Attachment 26.3.A
#807-0365

Scale: 1" = 50' | Page No. _____

Prepared By:
Howard Engineering & Geology, Inc.

Center at (200.0, 180.0) Radius= 130.166 S.C.= 0.00 P.R.= 0.05
 Factor of Safety (2D)= 1.633 By Simplified Bishop Method

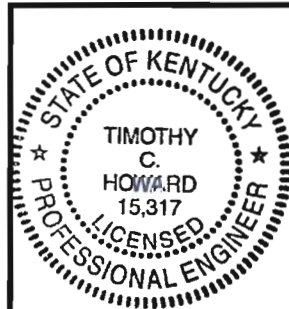
Profile A - A'



LEGEND
 Original Groundline: ———
 Interface Soil: - - - -
 Hollowfill: - - - -

I, Timothy C. Howard, P.E. No. 15,317

Date: 11/2/08
 hereby certify in accordance with 405 KAR 7:040, Section 10,
 that this document is correct as determined by accepted
 engineering practices and includes all information required
 of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.

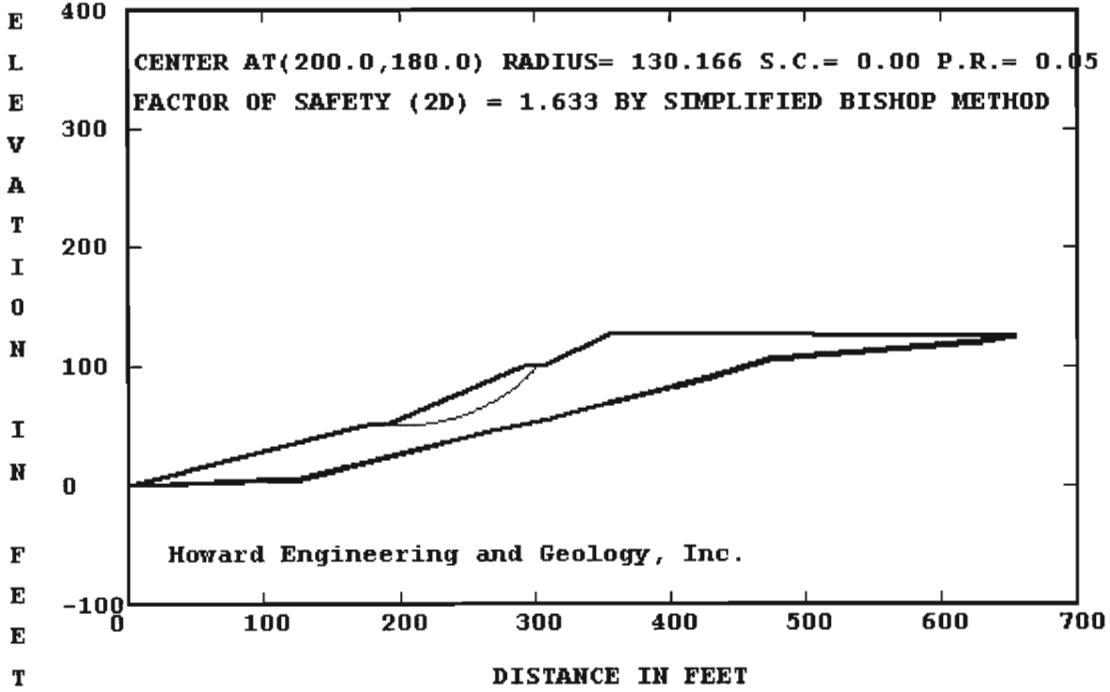
Spoil Storage Area #1 – Reame Drawing
 Attachment 26.3.A
 #807-0365

Scale: 1" = 100'

Page No.

Prepared By:
Howard Engineering & Geology, Inc.

Hollowfill #1 Circular Failure 807-0365 Appolo Fuels



Timothy C. Howard

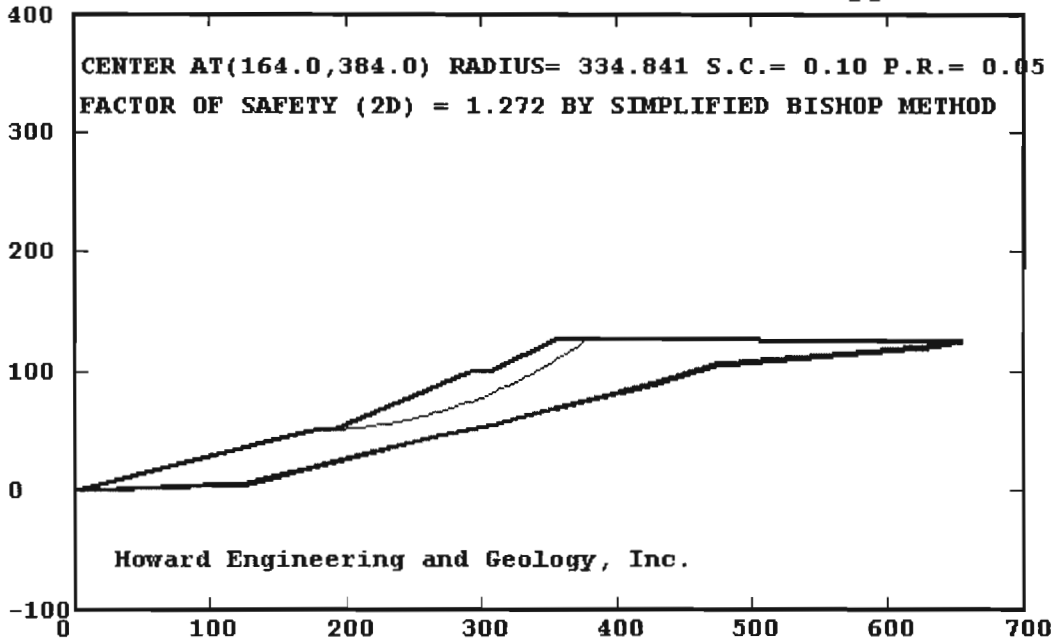
STATE OF KENTUCKY
TIMOTHY
C.
HOWARD
15,317
LICENSED
PROFESSIONAL ENGINEER

Hollowfill #1 Circular Failure 807-0365 Appolo Fuels

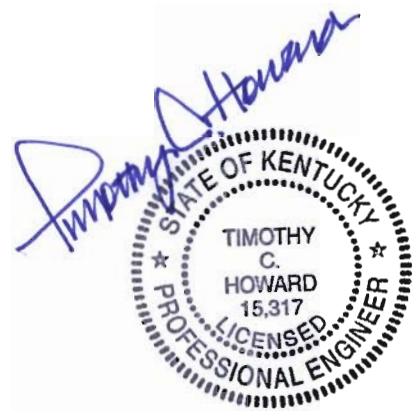
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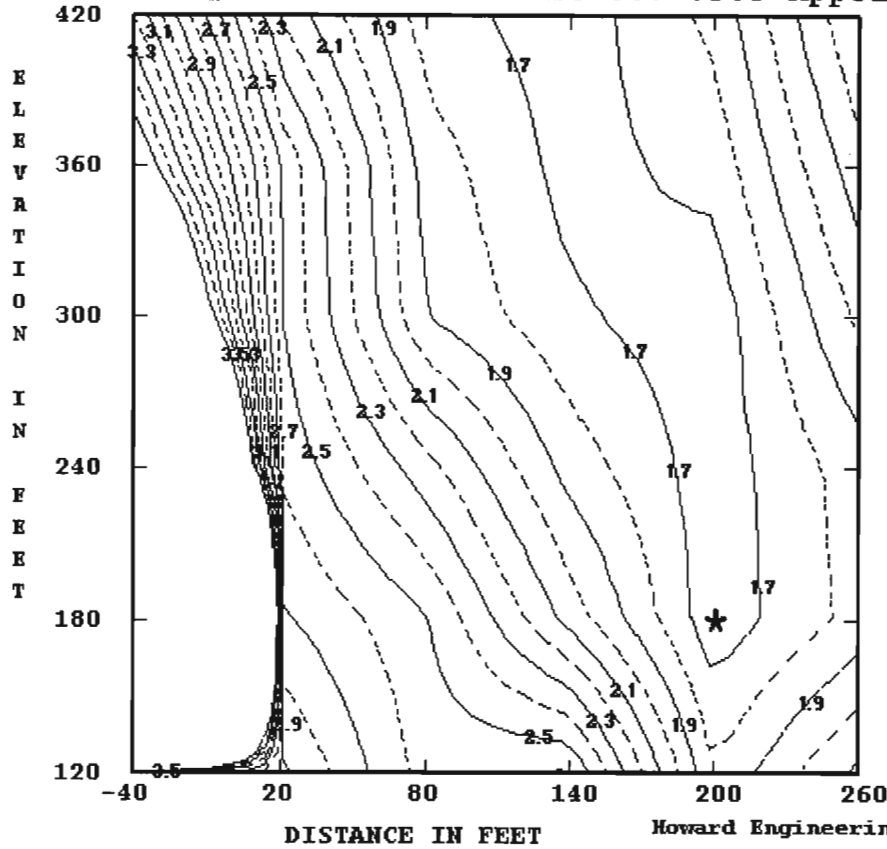
F
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E
T



DISTANCE IN FEET

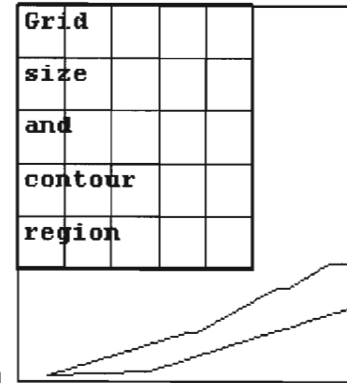


Hollowfill #1 Circular Failure 807-0365 Appolo Fuels



F.S.(2D) = 1.633
 by SIMPLIFIED BISHOP
 SEISMIC COEF. = 0

Number on curves indicates factor of safety.
 Graph below shows true shape and location of the contour region.

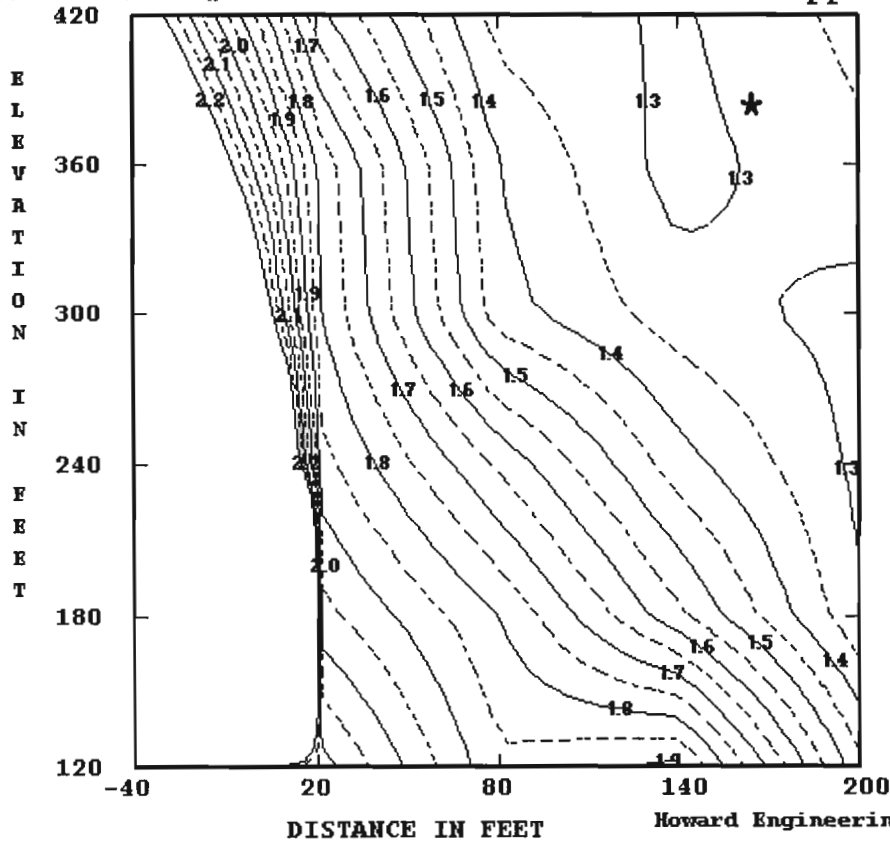


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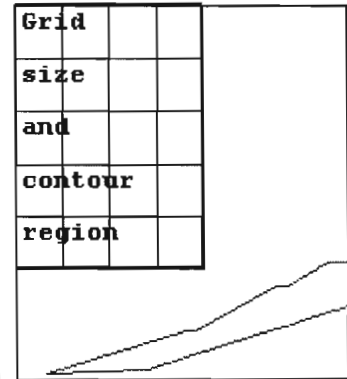
STATE OF KENTUCKY
 * TIMOTHY C. HOWARD 15,317 *
 LICENSED PROFESSIONAL ENGINEER

Hollowfill #1 Circular Failure 807-0365 Appolo Fuels



F.S.(2D) = 1.272
by SIMPLIFIED BISHOP
SEISMIC COEF. = .1

Number on curves
indicates factor
of safety.
Graph below shows
true shape and
location of the
contour region.



Howard Engineering and Geology, Inc.

Timothy C. Howard

STATE OF KENTUCKY
★ TIMOTHY C. HOWARD 15,317 ★
PROFESSIONAL ENGINEER LICENSED

HF#1 Circular 11-11-08.TXT

REAME (ROTATIONAL EQUILIBRIUM ANALYSIS OF MULTILAYERED EARTHWORKS)
THIS 2008 VERSION IS LICENSED BY CIVIL ENGINEERING SOFTWARE CENTER TO

Howard Engineering and Geology, Inc.

INPUT FILE NAME -R:\HF#1 Circular 11-11-08.DAT

TITLE -Hollowfill #1 Circular Failure 807-0365 Appolo Fuels

NO. OF STATIC AND SEISMIC CASES (NCASE) = 2

NO. OF NONCIRCULAR FAILURE SURFACES (NNS) = 0

TWO-DIMENSIONAL ANALYSIS (THREED = 0)

ANALYSIS BY DETERMINISTIC METHOD (PROB = 0)

CASE NO. 1 SEISMIC COEFFICIENT (SEIC) =0.000

NO. OF BOUNDARY LINES (NBL) = 3

NO. OF POINTS ON BOUNDARY LINE 1 = 9

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 128	Y COORD.= 5
3	X COORD.= 267	Y COORD.= 45
4	X COORD.= 311	Y COORD.= 55
5	X COORD.= 326	Y COORD.= 60
6	X COORD.= 430	Y COORD.= 90
7	X COORD.= 473	Y COORD.= 105
8	X COORD.= 629	Y COORD.= 120
9	X COORD.= 655	Y COORD.= 125

NO. OF POINTS ON BOUNDARY LINE 2 = 9

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 128	Y COORD.= 6
3	X COORD.= 267	Y COORD.= 46
4	X COORD.= 311	Y COORD.= 56
5	X COORD.= 326	Y COORD.= 61
6	X COORD.= 430	Y COORD.= 91
7	X COORD.= 473	Y COORD.= 106
8	X COORD.= 629	Y COORD.= 121
9	X COORD.= 655	Y COORD.= 125

NO. OF POINTS ON BOUNDARY LINE 3 = 7

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 175	Y COORD.= 50
3	X COORD.= 190	Y COORD.= 50
4	X COORD.= 291	Y COORD.= 100
5	X COORD.= 306	Y COORD.= 100
6	X COORD.= 357	Y COORD.= 128
7	X COORD.= 655	Y COORD.= 125

LINE NO. AND SLOPE OF EACH SEGMENT ARE:

1	0.039	0.288	0.227	0.333	0.288	0.349
	0.096	0.192				
2	0.047	0.288	0.227	0.333	0.288	0.349
	0.096	0.154				
3	0.286	0.000	0.495	0.000	0.549	-0.010

MIN. DEPTH OF TALLEST SLICE (DMIN) = 0

NO. OF RADIUS CONTROL ZONES (NRCZ) = 1



HF#1 Circular 11-11-08.TXT

RADIUS DECREMENT (RDEC) FOR ZONE 1 = 0
 NO. OF CIRCLES (NCIR) FOR ZONE 1 = 5
 NO. OF BOTTOM LINES (NOL) FOR ZONE 1 = 1
 LINE NO. (LINO) BEG. NO. (NBP) END NO. (NEP)
 1 1 9

ENGLISH UNITS ARE USED WITH DISTANCE IN FEET AND FORCE IN POUND.

SOIL No.	ENVELOPE (TSSE)	COHESION (C)	FRIC. ANGLE (PHID)	UNIT WEIGHT (G)
1	1	160.000	24.000	125.000
2	1	200.000	30.000	125.000

USE PORE PRESSURE RATIO
 USE GRID
 NO. OF SLICES (NSLI) = 10
 NO. OF ADD. CIRCLES (NAC) = 3
 ANALYSIS BY SIMPLIFIED BISHOP METHOD (MTHD=2)
 NUMBER OF FORCES (NFO)= 0
 SOFT SOIL NUMBER (SSN)= 0

PORE PRESSURE RATIO (RU) = 0.05

NO. OF SOILS WITH DIFFERENT PORE PRESSURE RATIO (NSDP) = 1
 SOIL NO. 1 PORE PRESSURE RATIO= 0.1
 INPUT COORD. OF GRID POINTS 1,2,AND 3

POINT 1 X COORD. = -40 Y COORD. = 420
 POINT 2 X COORD. = -40 Y COORD. = 120
 POINT 3 X COORD. = 200 Y COORD. = 120

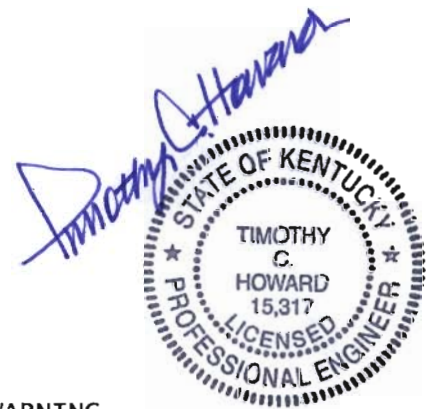
X INCREMENT (XINC) = 24 Y INCREMENT (YINC) = 24
 NO. OF DIVISIONS BETWEEN POINTS 1 AND 2 (ND12) = 5
 NO. OF DIVISIONS BETWEEN POINTS 2 AND 3 (ND23) = 4
 ONLY A SUMMARY TABLE IS PRINTED (NPRT = 0)
 SLICES WILL BE SUBDIVIDED

AUTOMATIC SEARCH WILL FOLLOW AFTER GRID

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE TOTAL	CRITIC. RADIUS	LOWEST F.S.	WARNING	
-40.0	420.0	5	1	421.901	3.185	0
-40.0	360.0	5	1	362.215	3.666	0
-40.0	300.0	5	1	302.655	4.661	0
-40.0	240.0	5	1	243.311	7.538	0
-40.0	180.0	4	1	184.391	28.477	0
-40.0	120.0	1	1	126.491	1000.000	0
20.0	420.0	5	1	418.899	2.188	0
20.0	360.0	5	1	358.945	2.490	0
20.0	300.0	5	1	298.991	2.510	0
20.0	240.0	5	1	239.037	2.588	0
20.0	180.0	5	1	179.082	2.719	0
20.0	120.0	5	1	119.128	2.927	0
80.0	420.0	5	1	412.089	1.746	0
80.0	360.0	5	1	354.429	1.853	0
80.0	300.0	5	1	296.649	1.899	0
80.0	240.0	5	1	236.695	2.244	0



HF#1 Circular 11-11-08.TXT						
80.0	180.0	5	1	176.740	2.514	0
80.0	120.0	5	1	116.786	2.560	0
140.0	420.0	11	8	372.584	1.643	0
140.0	360.0	11	1	337.837	1.662	0
140.0	300.0	5	1	280.177	1.717	0
140.0	240.0	5	1	222.517	1.861	0
140.0	180.0	5	1	164.857	2.062	0
140.0	120.0	5	1	107.197	2.615	0
200.0	420.0	11	1	380.523	1.829	0
200.0	360.0	11	3	303.395	1.733	0
200.0	300.0	11	8	248.281	1.633	0
200.0	240.0	11	1	205.924	1.642	0
200.0	180.0	11	7	130.166	1.633	0
200.0	120.0	11	4	71.220	1.810	0

GRID IS EXPANDED AS FOLLOWS SO MINIMUM FACTOR OF SAFETY FALLS WITHIN THE GRID

260.0	420.0	11	1	364.189	2.309	0
260.0	360.0	11	1	306.540	2.165	0
260.0	300.0	11	8	220.600	2.023	0
260.0	240.0	11	8	165.100	1.850	0
260.0	180.0	11	1	133.194	1.838	0
260.0	120.0	8	5	40.279	2.128	0

LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-40.000	20.000	80.000	140.000	200.000	260.000
420.000	3.185	2.188	1.746	1.643	1.829	2.309
360.000	3.666	2.490	1.853	1.662	1.733	2.165
300.000	4.661	2.510	1.899	1.717	1.633	2.023
240.000	7.538	2.588	2.244	1.861	1.642	1.850
180.000	28.477	2.719	2.514	2.062	1.633	1.838
120.000	1000.000	2.927	2.560	2.615	1.810	2.128

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 3 CENTERS

FACTOR OF SAFETY = 1.643 AT (140.000,420.000)
 FACTOR OF SAFETY = 1.633 AT (200.000,300.000)
 FACTOR OF SAFETY = 1.633 AT (200.000,180.000)

AUTOMATIC SEARCH WILL BE MADE ONLY ON THE CENTER WITH THE SMALLEST F.S.

AT POINT (200.0 , 180.0) RADIUS 130.166
 THE MINIMUM FACTOR OF SAFETY IS 1.633

FACTORS OF SAFETY BASED ON SEARCH

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE TOTAL	CRITIC. RADIUS	LOWEST F.S.	WARNING	
200.0	180.0	11	7	130.166	1.633	0
224.0	180.0	5	1	141.627	1.707	0
176.0	180.0	11	1	154.901	1.845	0
200.0	204.0	11	6	154.340	1.679	0
200.0	156.0	11	8	106.148	1.655	0
206.0	180.0	11	8	126.146	1.666	0
194.0	180.0	11	4	128.808	1.640	0
200.0	186.0	11	7	135.738	1.644	0
200.0	174.0	11	7	124.595	1.633	0

AT POINT (200.0 , 180.0) RADIUS 130.166



HF#1 Circular 11-11-08.TXT
 THE MINIMUM FACTOR OF SAFETY IS 1.633

SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	2	11.230	3.074	0.000	-.031	.431E+04	.410E+04	.600E+06	-.173E+05
2	2	11.230	8.494	0.000	.056	.119E+05	.113E+05	.114E+07	.862E+05
3	2	11.230	12.939	0.000	.142	.182E+05	.173E+05	.158E+07	.335E+06
4	2	11.230	16.383	0.000	.228	.230E+05	.218E+05	.190E+07	.683E+06
5	2	11.230	18.774	0.000	.314	.264E+05	.250E+05	.209E+07	.108E+07
6	2	11.230	20.030	0.000	.401	.281E+05	.267E+05	.216E+07	.147E+07
7	2	11.230	20.020	0.000	.487	.281E+05	.267E+05	.209E+07	.178E+07
8	2	11.230	18.548	0.000	.573	.260E+05	.247E+05	.188E+07	.194E+07
9	2	10.779	15.383	0.000	.658	.207E+05	.197E+05	.149E+07	.177E+07
10	2	0.451	12.850	0.000	.701	.724E+03	.688E+03	.533E+05	.660E+05
11	2	11.230	6.727	0.000	.746	.944E+04	.897E+04	.888E+06	.917E+06
							SUM	.159E+08	.101E+08

AT CENTER (200.000 , 180.000) WITH RADIUS 130.166 AND SEIS. COEFF. 0.00
 FACTOR OF SAFETY BY NORMAL METHOD IS 1.569
 FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 1.633

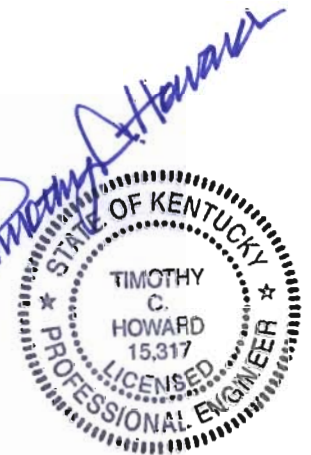
CASE NO. 2 SEISMIC COEFFICIENT (SEIC) =0.100

AUTOMATIC SEARCH WILL FOLLOW AFTER GRID

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE TOTAL	NO. OF CIRCLE CRITIC.	RADIUS	LOWEST F.S.	WARNING
-40.0	420.0	5	1	421.901	2.317	0
-40.0	360.0	5	1	362.215	2.673	0
-40.0	300.0	5	1	302.655	3.410	0
-40.0	240.0	5	1	243.311	5.541	0
-40.0	180.0	4	1	184.391	21.051	0
-40.0	120.0	1	1	126.491	1000.000	0
20.0	420.0	5	1	418.899	1.619	0
20.0	360.0	5	1	358.945	1.796	0
20.0	300.0	5	1	298.991	1.811	0
20.0	240.0	5	1	239.037	1.875	0
20.0	180.0	5	1	179.082	1.973	0
20.0	120.0	5	1	119.128	2.127	0
80.0	420.0	5	1	412.089	1.330	0
80.0	360.0	5	1	354.429	1.400	0
80.0	300.0	5	1	296.649	1.421	0
80.0	240.0	5	1	236.695	1.643	0
80.0	180.0	5	1	176.740	1.802	0
80.0	120.0	5	1	116.786	1.859	0
140.0	420.0	11	11	372.584	1.292	0
140.0	360.0	5	1	337.837	1.279	0
140.0	300.0	5	1	280.177	1.323	0
140.0	240.0	5	1	222.517	1.422	0
140.0	180.0	5	1	164.857	1.562	0
140.0	120.0	5	1	107.197	1.916	0
200.0	420.0	11	1	380.523	1.366	0
200.0	360.0	11	3	303.395	1.338	0
200.0	300.0	11	8	248.281	1.280	0



HF#1 Circular 11-11-08.TXT						
200.0	240.0	11	1	205.924	1.287	0
200.0	180.0	11	7	130.166	1.305	0
200.0	120.0	11	4	71.220	1.462	0

LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-40.000	20.000	80.000	140.000	200.000
420.000	2.317	1.619	1.330	1.292	1.366
360.000	2.673	1.796	1.400	1.279	1.338
300.000	3.410	1.811	1.421	1.323	1.280
240.000	5.541	1.875	1.643	1.422	1.287
180.000	21.051	1.973	1.802	1.562	1.305
120.000	1000.000	2.127	1.859	1.916	1.462

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 2 CENTERS

FACTOR OF SAFETY = 1.279 AT (140.000,360.000)
 FACTOR OF SAFETY = 1.280 AT (200.000,300.000)

AUTOMATIC SEARCH WILL BE MADE ONLY ON THE CENTER WITH THE SMALLEST F.S.

AT POINT (140.0 , 360.0) RADIUS 337.837
 THE MINIMUM FACTOR OF SAFETY IS 1.279

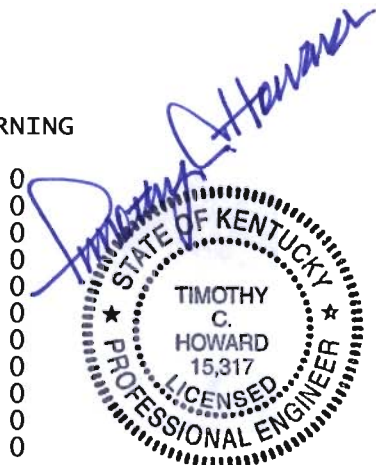
FACTORS OF SAFETY BASED ON SEARCH

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE
 MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER X COORDINATE	CENTER Y COORDINATE	NO. OF CIRCLE		RADIUS	LOWEST F.S.	WARNING
		TOTAL	CRITIC.			
140.0	360.0	5	1	337.837	1.279	0
164.0	360.0	11	10	310.280	1.275	0
188.0	360.0	11	8	308.972	1.300	0
164.0	384.0	11	9	334.841	1.272	0
164.0	408.0	11	9	357.452	1.291	0
188.0	384.0	11	8	331.989	1.326	0
140.0	384.0	11	1	360.901	1.279	0
170.0	384.0	11	9	332.849	1.284	0
158.0	384.0	11	10	334.761	1.276	0
164.0	390.0	11	9	340.482	1.276	0
164.0	378.0	11	10	327.066	1.281	0

AT POINT (164.0 , 384.0) RADIUS 334.841

THE MINIMUM FACTOR OF SAFETY IS 1.272



SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	2	18.915	3.799	0.000	.107	.898E+04	.853E+04	.290E+07	.619E+06
2	2	18.915	10.578	0.000	.164	.250E+05	.238E+05	.574E+07	.218E+07
3	2	18.915	16.242	0.000	.220	.384E+05	.365E+05	.802E+07	.405E+07
4	2	18.915	20.755	0.000	.277	.491E+05	.466E+05	.973E+07	.607E+07
5	2	18.915	24.062	0.000	.333	.569E+05	.540E+05	.108E+08	.807E+07
6	2	6.016	25.549	0.000	.370	.192E+05	.183E+05	.358E+07	.296E+07
7	2	12.899	23.099	0.000	.399	.372E+05	.354E+05	.694E+07	.607E+07
8	2	2.101	19.730	0.000	.421	.518E+04	.492E+04	.978E+06	.882E+06
9	2	16.815	19.775	0.000	.449	.416E+05	.395E+05	.774E+07	.745E+07
10	2	18.915	19.912	0.000	.503	.471E+05	.447E+05	.851E+07	.924E+07
11	2	15.270	18.660	0.000	.554	.356E+05	.338E+05	.631E+07	.756E+07
12	2	3.645	16.310	0.000	.582	.743E+04	.706E+04	.133E+07	.164E+07

HF#1 Circular 11-11-08.TXT
13 2 18.915 7.763 0.000 .616 .184E+05 .174E+05 .406E+07 .426E+07
SUM .767E+08 .611E+08

AT CENTER (164.000 , 384.000) WITH RADIUS 334.841 AND SEIS. COEFF. 0.10
FACTOR OF SAFETY BY NORMAL METHOD IS 1.256
FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 1.272

SUMMARY OF STABILITY ANALYSIS

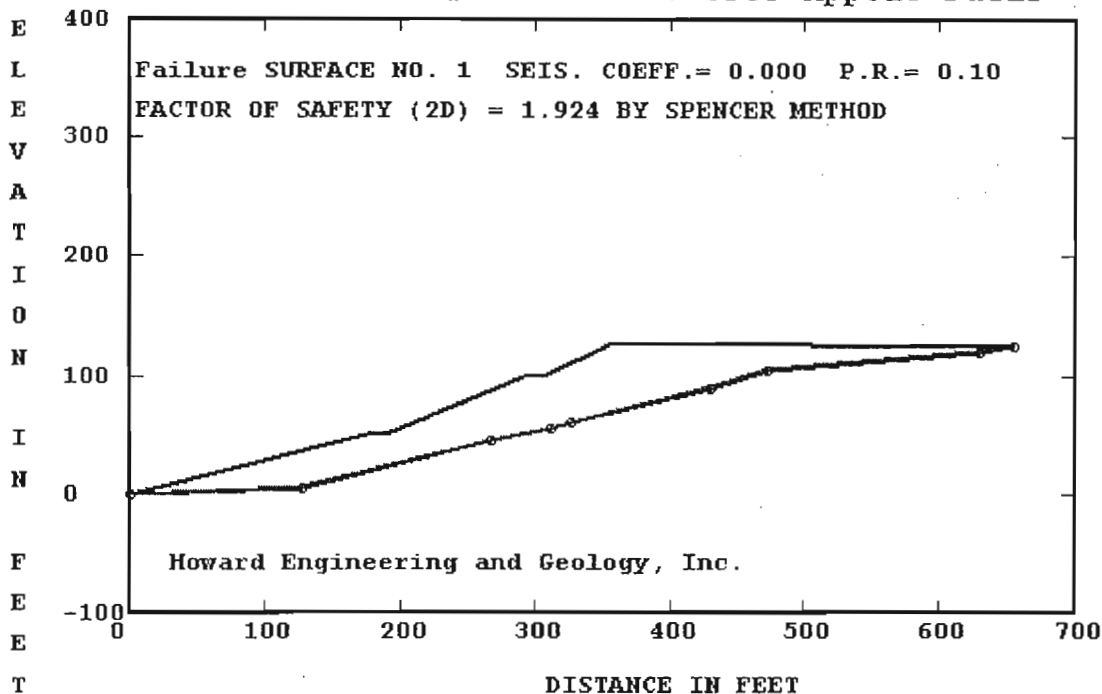
FACTOR OF SAFETY IS DETERMINED BY SIMPLIFIED BISHOP METHOD
NUMBER OF CASES = 2

CASE 1 SEISMIC COEFFICIENT = 0
FACTOR OF SAFETY = 1.633

CASE 2 SEISMIC COEFFICIENT = 0.1
FACTOR OF SAFETY = 1.272

Timothy C. Howard
STATE OF KENTUCKY
★ TIMOTHY C. HOWARD ★
15,317
★ LICENSED PROFESSIONAL ENGINEER ★

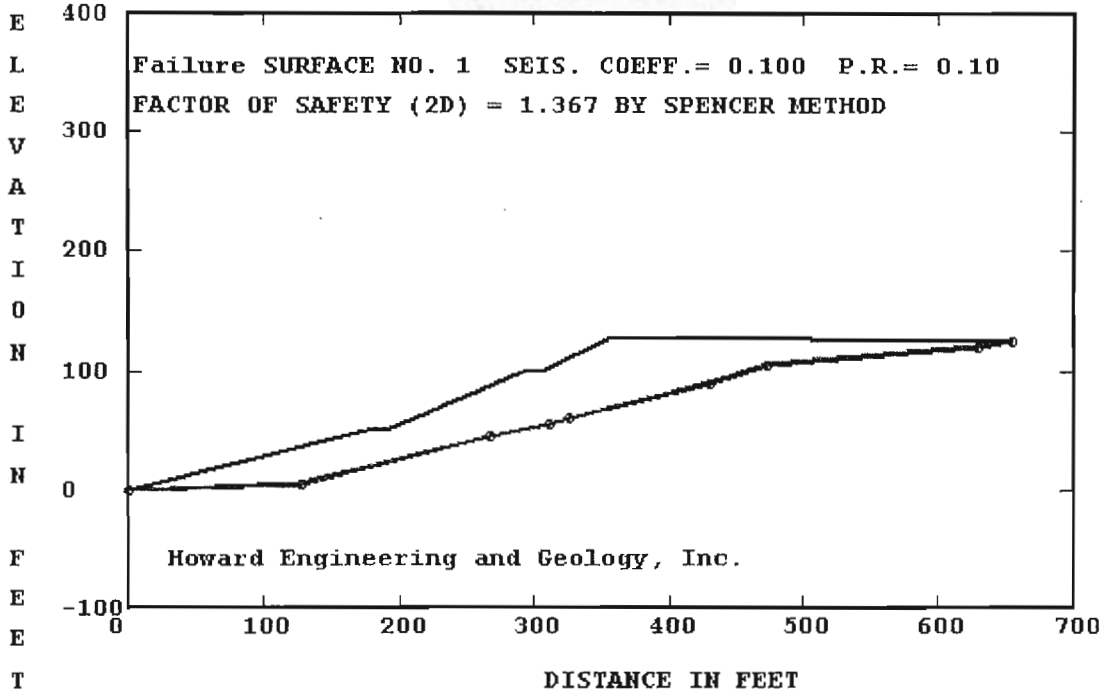
Hollowfill #1 Swase 807-0365 Appolo Fuels



Timothy C. Howard

STATE OF KENTUCKY
★ TIMOTHY C. HOWARD 15,317 ★
PROFESSIONAL ENGINEER

Hollowfill #1 Swase 807-0365 Appolo Fuels



Timothy C. Howard

STATE OF KENTUCKY
★ TIMOTHY C. HOWARD 15,317 ★
PROFESSIONAL ENGINEER

HF#1 Plane 12-4-08.TXT

REAME (ROTATIONAL EQUILIBRIUM ANALYSIS OF MULTILAYERED EARTHWORKS)
THIS 2008 VERSION IS LICENSED BY CIVIL ENGINEERING SOFTWARE CENTER TO

Howard Engineering and Geology, Inc.

INPUT FILE NAME -R:\HF#1 Plane 12-4-08.DAT

TITLE -Hollowfill #1 Swase 807-0365 Appolo Fuels

NO. OF STATIC AND SEISMIC CASES (NCASE) = 2

NO. OF NONCIRCULAR FAILURE SURFACES (NNS) = 1

TWO-DIMENSIONAL ANALYSIS (THREED = 0)

ANALYSIS BY DETERMINISTIC METHOD (PROB = 0)

CASE NO. 1 SEISMIC COEFFICIENT (SEIC) =0.000

NO. OF BOUNDARY LINES (NBL) = 3

NO. OF POINTS ON BOUNDARY LINE 1 = 9

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 128	Y COORD.= 5
3	X COORD.= 267	Y COORD.= 45
4	X COORD.= 311	Y COORD.= 55
5	X COORD.= 326	Y COORD.= 60
6	X COORD.= 430	Y COORD.= 90
7	X COORD.= 473	Y COORD.= 105
8	X COORD.= 629	Y COORD.= 120
9	X COORD.= 655	Y COORD.= 125

NO. OF POINTS ON BOUNDARY LINE 2 = 9

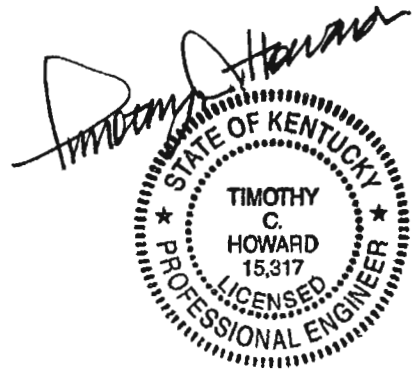
1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 128	Y COORD.= 6
3	X COORD.= 267	Y COORD.= 46
4	X COORD.= 311	Y COORD.= 56
5	X COORD.= 326	Y COORD.= 61
6	X COORD.= 430	Y COORD.= 91
7	X COORD.= 473	Y COORD.= 106
8	X COORD.= 629	Y COORD.= 121
9	X COORD.= 655	Y COORD.= 125

NO. OF POINTS ON BOUNDARY LINE 3 = 7

1	X COORD.= 0	Y COORD.= 0
2	X COORD.= 175	Y COORD.= 50
3	X COORD.= 190	Y COORD.= 50
4	X COORD.= 291	Y COORD.= 100
5	X COORD.= 306	Y COORD.= 100
6	X COORD.= 357	Y COORD.= 128
7	X COORD.= 655	Y COORD.= 125

LINE NO. AND SLOPE OF EACH SEGMENT ARE:

1	0.039	0.288	0.227	0.333	0.288	0.349
	0.096	0.192				
2	0.047	0.288	0.227	0.333	0.288	0.349
	0.096	0.154				
3	0.286	0.000	0.495	0.000	0.549	-0.010



ENGLISH UNITS ARE USED WITH DISTANCE IN FEET AND FORCE IN POUND.

HF#1 Plane 12-4-08.TXT

SOIL No.	ENVELOPE (TSSE)	COHESION (C)	FRIC. ANGLE (PHID)	UNIT WEIGHTT (G)
1	1	160.000	24.000	125.000
2	1	200.000	30.000	125.000

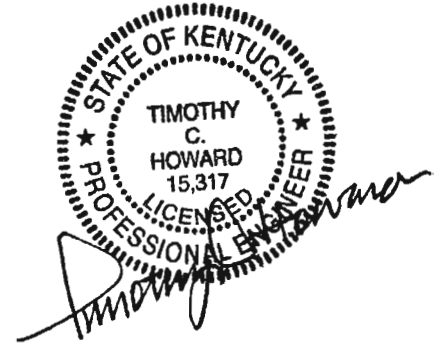
USE PORE PRESSURE RATIO
 NO. OF SLICES (NSLI) = 10
 NO. OF ADD. CIRCLES (NAC) = 3
 ANALYSIS BY SPENCER METHOD (MTHD=4)
 NUMBER OF FORCES (NFO)= 0
 SOFT SOIL NUMBER (SSN)= 0

PORE PRESSURE RATIO (RU) = 0.1

NO. OF SOILS WITH DIFFERENT PORE PRESSURE RATIO (NSDP) = 1
 SOIL NO. 1 PORE PRESSURE RATIO= 0.1
 LOCATION OF MOMENT CENTER: X0 = 0 Y0 = 260
 ONLY A SUMMARY TABLE IS PRINTED (NPRT = 0)
 SLICES WILL BE SUBDIVIDED (NSUB = 1)

NO. OF POINTS ON FAILURE SURFACE (NPNC) 1 = 9

Point No.	X COORD.	Y COORD.
1	0	0
2	128	5
3	267	45
4	311	55
5	326	60
6	430	90
7	473	105
8	629	120
9	655	125



FAILURE SURFACE NO. 1

FOR FAILURE SURFACE NO. 1 FACTOR OF SAFETY IS 1.924

SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	BOTTOM TANGENT	BOTTOM SHEAR	INTERSLICE NORMAL FORCE	FORCE SHEAR	RESISTING FORCE	DRIVING FORCE	THRUST HEIGHT
1	1	65.500	0.039	1.998E+04	0.000E+00	3.970E+03	.38E+05	.27E+04	6.256
2	1	62.500	0.039	4.568E+04	1.725E+04	1.273E+04	.88E+05	.76E+04	9.781
3	1	3.000	0.288	2.616E+03	5.534E+04	1.259E+04	.52E+04	.34E+04	9.722
4	1	44.000	0.288	3.831E+04	4.530E+04	1.042E+04	.77E+05	.49E+05	8.939
5	1	15.000	0.288	1.224E+04	4.240E+04	9.757E+03	.24E+05	.16E+05	8.654
6	1	6.500	0.288	5.062E+03	4.124E+04	9.489E+03	.10E+05	.64E+04	8.518
7	1	65.500	0.288	6.318E+04	2.491E+04	5.732E+03	.13E+06	.82E+05	9.085
8	1	5.000	0.288	5.733E+03	2.332E+04	5.366E+03	.11E+05	.76E+04	9.406
9	1	24.000	0.227	3.011E+04	2.265E+04	5.212E+03	.59E+05	.32E+05	9.754
10	1	15.000	0.227	1.939E+04	2.218E+04	5.102E+03	.38E+05	.20E+05	10.006
11	1	5.000	0.227	6.351E+03	2.203E+04	5.069E+03	.13E+05	.67E+04	10.087
12	1	15.000	0.333	1.959E+04	1.255E+04	2.889E+03	.40E+05	.30E+05	15.565
13	1	1.500	0.288	2.040E+03	1.195E+04	2.750E+03	.41E+04	.27E+04	16.262
14	1	29.500	0.288	4.309E+04	-1.069E+03	-2.460E+02	.86E+05	.58E+05	-172.994
15	1	36.000	0.288	5.121E+04	-1.643E+04	-3.781E+03	.10E+06	.69E+05	-12.374
16	1	37.000	0.288	4.259E+04	-2.839E+04	-6.533E+03	.85E+05	.56E+05	-8.867
17	1	28.500	0.349	2.505E+04	-4.082E+04	-9.392E+03	.51E+05	.39E+05	-9.037
18	1	14.500	0.349	9.986E+03	-4.533E+04	-1.043E+04	.20E+05	.15E+05	-9.774
19	1	51.000	0.096	3.007E+04	-2.724E+04	-6.269E+03	.58E+05	.12E+05	-7.164
20	1	65.500	0.096	2.795E+04	-9.738E+03	-2.241E+03	.54E+05	.11E+05	-3.383
21	1	39.500	0.096	1.106E+04	-2.290E+03	-5.270E+02	.21E+05	.37E+04	-0.491

HF#1 Plane 12-4-08.TXT

22 1 26.000 0.192 3.963E+03 9.766E-04 0.000E+00 .78E+04 .17E+04 0.000
 SUM .10E+07 .53E+06

FOR FAILURE SURFACE NO. 1 WITH SEISMIC COEFFICIENT 0.000
 BY SPENCER METHOD, DEL ANGLE = 0.226 AND FACTOR OF SAFETY IS 1.924

CASE NO. 2 SEISMIC COEFFICIENT (SEIC) =0.100

FAILURE SURFACE NO. 1

FOR FAILURE SURFACE NO. 1 FACTOR OF SAFETY IS 1.367

SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL FAILURE SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	BOTTOM TANGENT	BOTTOM SHEAR	INTERSLICE NORMAL	FORCE SHEAR	RESISTING FORCE	DRIVING FORCE	THRUST HEIGHT
					0.000E+00				0.000
1	1	65.500	0.039	3.478E+04	2.463E+04	2.499E+04	.48E+05	.10E+05	30.864
2	1	62.500	0.039	7.743E+04	7.422E+04	7.530E+04	.11E+06	.28E+05	47.845
3	1	3.000	0.288	3.372E+03	7.339E+04	7.446E+04	.48E+04	.43E+04	50.329
4	1	44.000	0.288	4.940E+04	6.114E+04	6.203E+04	.70E+05	.64E+05	91.124
5	1	15.000	0.288	1.582E+04	5.738E+04	5.822E+04	.23E+05	.20E+05	106.945
6	1	6.500	0.288	6.557E+03	5.588E+04	5.669E+04	.93E+04	.83E+04	114.052
7	1	65.500	0.288	8.117E+04	3.452E+04	3.503E+04	.12E+06	.11E+06	232.163
8	1	5.000	0.288	7.325E+03	3.243E+04	3.290E+04	.10E+05	.97E+04	249.141
9	1	24.000	0.227	4.060E+04	2.929E+04	2.972E+04	.57E+05	.45E+05	284.721
10	1	15.000	0.227	2.612E+04	2.721E+04	2.761E+04	.37E+05	.29E+05	310.916
11	1	5.000	0.227	8.559E+03	2.654E+04	2.693E+04	.12E+05	.94E+04	320.158
12	1	15.000	0.333	2.399E+04	1.546E+04	1.569E+04	.35E+05	.36E+05	548.629
13	1	1.500	0.288	2.593E+03	1.467E+04	1.488E+04	.37E+04	.35E+04	577.851
14	1	29.500	0.288	5.467E+04	-2.504E+03	-2.540E+03	.78E+05	.74E+05	-3212.116
15	1	36.000	0.288	6.501E+04	-2.276E+04	-2.309E+04	.92E+05	.88E+05	-310.430
16	1	37.000	0.288	5.438E+04	-3.845E+04	-3.901E+04	.77E+05	.72E+05	-151.352
17	1	28.500	0.349	3.072E+04	-5.238E+04	-5.315E+04	.44E+05	.46E+05	-91.118
18	1	14.500	0.349	1.239E+04	-5.737E+04	-5.821E+04	.18E+05	.18E+05	-73.020
19	1	51.000	0.096	4.765E+04	-3.554E+04	-3.606E+04	.65E+05	.26E+05	-53.362
20	1	65.500	0.096	4.482E+04	-1.344E+04	-1.364E+04	.62E+05	.23E+05	-26.384
21	1	39.500	0.096	1.813E+04	-3.342E+03	-3.391E+03	.25E+05	.81E+04	-11.026
22	1	26.000	0.192	6.376E+03	2.441E-04	0.000E+00	.89E+04	.32E+04	0.000
		SUM					.10E+07	.73E+06	

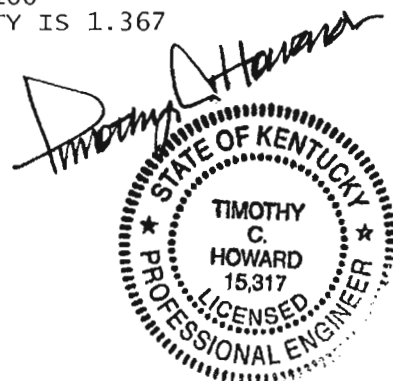
FOR FAILURE SURFACE NO. 1 WITH SEISMIC COEFFICIENT 0.100
 BY SPENCER METHOD, DEL ANGLE = 0.793 AND FACTOR OF SAFETY IS 1.367

SUMMARY OF STABILITY ANALYSIS

FACTOR OF SAFETY IS DETERMINED BY SPENCER METHOD
 NUMBER OF CASES = 2

CASE 1 SEISMIC COEFFICIENT = 0
 FOR FAILURE SURFACE 1 FACTOR OF SAFETY = 1.924

CASE 2 SEISMIC COEFFICIENT = 0.1
 FOR FAILURE SURFACE 1 FACTOR OF SAFETY = 1.367



27. Coal Mine Waste

27.1 Will any coal processing waste or underground development waste be generated or disposed of within the proposed permit area? YES NO. If "YES", provide the following information for each disposal area:

Facility I.D.	Type	Storage Volume Cu. Yds.	Latitude	Longitude	Anticipated Construction Date

27.2 Did construction of any of the above structures begin prior to January 18, 1983? YES NO. If "YES", provide the information required by 405 KAR 8:030, or 8:040, Section 25 for existing structures. Submit this information as "Attachment 27.2.A".

27.3 Will any coal mine waste be disposed of in abandoned underground mines? YES NO. If "YES", provide as "Attachment 27.3.A", the information to satisfy the requirements of 405 KAR 8:040, Sections 27 and 28.

27.4 Will coal mine waste materials, from activities located outside the proposed permit area, be disposed of within the proposed permit area? YES NO. If "YES", provide as "Attachment 27.4.A", a detailed discussion (based on relevant hydrologic, geotechnical, physical, and chemical analyses) to make a showing in accordance with 405 KAR 16:140 or 18:140, Section 1, that the disposal of such waste will not:

- (a) Adversely affect water quality, water flow, or vegetation;
- (b) Create public health hazards; and
- (c) Cause instability in the disposal area(s).

27.5 Provide a detailed plan (including all engineering design calculations, cross-sections, maps and drawings) for each proposed structure. Each plan shall meet the applicable requirements of 405 KAR 8:030, Section 34, or 405 KAR 8:040, Section 34, as appropriate. The plan(s) shall be provided as "Attachment 27.5.A, 27.5.B., etc."

N/A None Proposed.

28. Disposal of Waste Other Than Coal, Soil or Rock

28.1 Provide as "Attachment 28.1.A", a description of the measures to be used for the temporary storage and final disposal of waste such as: grease, lubricants, paints, flammable liquids, garbage, abandoned machinery, timber, brush, and other combustibles generated during mining activities. Show all storage and/or disposal sites on the MRP Map.
See Attachment 28.1.A.

29. Toxic Materials Handling Plan

29.1 Based on the results of the premining geologic sampling program, identify all acidic or toxic strata which will be encountered during the proposed mining operation:
N/A - No Acidic Strata Identified.

Site No.	Thickness	Lithology	Elevation	Potential Acidity	Neutralization Potential

29.2 Describe how acidic and/or toxic strata will be handled to avoid contamination of surface and ground water resources within, and adjacent to the proposed permit area, and to minimize adverse effects on plant growth and land uses. Submit the description, if applicable, as "Attachment 29.2.A".
See Attachment 29.2.A

30. Surface and Ground Water Monitoring

30.1 Provide a detailed description of the in-stream surface water quality and quantity monitoring program to be used during the mining and reclamation operations. The description shall specifically address all of the following:

- (a) the location of each sampling point and the rationale for selection
- (b) the frequency of sample collection
- (c) the method(s) to be used for sample collection
- (d) the parameters to be tested
- (e) the procedures to be used for reporting the analytical results of the testing program to DSMRE

Submit the description as "Attachment 30.1.A", and show the location of all monitoring points on the MRP Map.
See Attachment 30.1.A.

ATTACHMENT 28.1.A

WASTE DISPOSAL PLAN

All waste products which are generated during the normal operations of the surface mine, such as grease, lubricants, flammable liquids, trash, timber, wood or other combustible material will be temporarily stored within the proposed permit area. This material will be placed at a designated site within the permit area which is also located away from the mining operations. Locating this material away from the mine operations will prevent any possible danger of igniting the material. After this material is accumulated, it will be permanently disposed of by hauling this material to an approved public landfill or transfer station where it would be disposed of with other similar waste products.

Abandoned machinery will be sold for scrap and removed from the site. Timber, brush, and other combustibles generated during the mining activities will either be placed in piles or burned out of the streams and natural drainageways. Timber that is removed from the surface mining area will either be windrowed along the outcrop, no windrows will be placed below the lowest coal seam to be mined, or will be buried in the backfill. The timber that will be buried in the backfill will be placed no closer than 10' to the highwall and will be placed at a minimum of four (4) feet above the level of the coal seam being mined within the spoil. The timber will be placed in layers and covered with the spoil material in the backfill. This should prevent excessive settlement of the spoil and will not cause any adverse stability problems.

ATTACHMENT 29.2.A

TOXIC MATERIALS HANDLING PLAN

Although no potential acidic units have been identified, this plan will be implemented in the event acidic units are encountered. Precautions will be taken to ensure that the strata are totally segregated during the excavation process. This material will not be mixed with other overburden material. The potentially acid strata will be placed in the backfill so that it is surrounded on all sides, top and bottom with a minimum of four (4) feet of non-toxic and non-acidic material. Additionally a French drain shall be installed to direct any flow from the buried toxic material to the nearest sediment pond for treatment. See attachment 31.4.A for toxic discharge treatment plan.

The acidic material shall be buried or otherwise treated within thirty (30) days of exposure. Although the acid-base account would ensure neutralization of the strata, these precautions should prevent any adverse impacts to the revegetation process or to the groundwater supply.

ATTACHMENT 30.1.A

DURING-MINING SURFACEWATER MONITORING PROGRAM

The during-mining surface water monitoring program will consist of monitoring from two (2) existing monitoring stations. The monitoring stations are identified as SW-001 and SW-004. The locations of these sites are detailed on the MRP/ERI map included in this application. The coordinates of the site is as follows:

SW-001	-	Latitude 36°35'24" N (4,053,300) Longitude 83°53'39" W (241,088)
SW-004	-	Latitude 36°35'21" N (4,053,206) Longitude 83°53'37" W (241,134)

These sites are currently being monitored as the surface water monitoring program for existing operations.

- 1) These sites monitor groundwater from the aquifers which have been identified as part of this proposed permit application.
- 2) These sites are located downstream of the proposed mining area proposed in this application.

Samples taken at this site will be analyzed for the following parameters using the methods listed:

<u>PARAMETER</u>	<u>METHOD</u>
Flow Rate	Flow Estimation Meter
ph	SM #423*
Acidity	SM #402*
Alkalinity	SM #403*
Total Iron	SM #303A*
Total Manganese	SM #303A*
Sulfate	SM #426C*
Total Suspended Solids	SM #209C*
Specific Conductance	SM #205*

*" Standard Methods for the Examination of Water and Wastewater."
16th Edition, 1985. Background data collection for this site will consist of the last six (6) samples that have been collected.

Results of all analyses will be reported to the Department no later than the end of the month at the end of each quarter. Reporting will be done on Department approved water quality data entry forms. During Mining Sample Frequency: One (1) per three (3) months until final bond release.

30.2 Submit as "Attachment 30.2.A", a description of the applicant's proposed KPDES point source discharge monitoring program. Discharges from sediment ponds, underground mines and other similar discharge points within the proposed permit area shall be monitored. The description shall, at a minimum, address (a) the frequency of sample collection; (b) the parameters to be tested; and (c) the procedures to be used for reporting the analytical results of the laboratory tests. Show the location of all sampling points on the MRP Map.

See Attachment 30.2.A.

30.3 Provide, as "Attachment 30.3.A", a detailed description of the ground water quality and quantity monitoring program to be used during the mining and reclamation operations. The description shall specifically address all the following:

- (a) the location of each sampling point and the rationale for selection
- (b) the frequency of sample collection
- (c) the method(s) to be used for sample collection
- (d) the parameters to be tested
- (e) the procedures to be used for reporting the results of the testing program to DSMRE

Show the location of all sampling points on the MRP Map.

See Attachment 30.3.A.

30.4 Provide a detailed description of each monitoring point proposed for use in the ground water monitoring program. The description shall address:

- (a) the aquifer(s) to be monitored
- (b) the construction specifications of each monitoring point
- (c) the adequacy of each monitoring point, taking into account design, construction, and location to fulfill its intended use.

Submit the description as "Attachment 30.4.A".

See Attachment 30.4.A.

30.5 Provide the following information for the surface and ground water monitoring locations. If additional pages are necessary, submit as "Item 30.5 continued".

I.D. Number	Pond Number if Applicable	Type Surface/Ground	Latitude	Longitude
GW1	N/A	Ground	36-35-35	83-51-50
GW5	N/A	Ground	36-35-40	83-52-09
GW12	N/A	Ground	36-37-20	83-53-33
SW-001	N/A	Surface	36-35-24	83-53-39
SW-004	N/A	Surface	36-35-21	83-53-37
Pond 1	#1	KPDES	36-35-25	83-53-48
Pond 2	#2	KPDES	36-36-36	83-53-39

See Item 30.5 Continued

ATTACHMENT 30.2.A

It is proposed to monitor the discharges from ponds 1, 2, 3, 4, 5 and 6 as described in this application. This monitoring will meet the requirements of the KPDES Point Discharge Monitoring Program. The ponds to be monitored are designated as Sediment Ponds 1, 2, 3, 4, 5 and 6. The locations of the ponds are detailed on the Mining and Reclamation Plan Map. The coordinates of the sites are provided in Item 30.5.

Grab samples will be taken at the discharge point of the pond on the 1st and 3rd Wednesday of each month. Additionally, a water sample will be taken during the first significant rainfall event during the month. This sample may be substituted for one of the scheduled samples.

Samples collected at each site will be analyzed for the following parameters using the methods listed:

<u>PARAMETER</u>	<u>METHOD</u>
Discharge (in gal/min)	Flow Estimation Meter
Ph	SM #423*
Acidity	SM #402*
Alkalinity	SM #403*
Total Iron	SM #303A*
Total Manganese	SM #303A*
Total Suspended Solids	SM #209C*

“ Standard Methods for the Examination of Water and Wastewater.”
16th Edition, 1985.

Results of all analyses will be reported to the Department by month at the end of each quarter. Reporting will be done on Department-approved Discharge Monitoring Report forms.

The monitoring program described above will be followed from the time active mining begins until a Phase I Bond Release is obtained.

Attachment 30.3.A

During-Mining Groundwater Monitoring Plan

The during-mining ground water monitoring program will consist of monitoring three (3) existing monitoring stations. These sites are identified as GW1, GW5 and GW12. The location of these sites are detailed on the M.R.P./E.R.I. Map included in this application. The coordinates of these sites are as follows:

GW1	-	Latitude 36° 35' 35"N(4,053,482) Longitude 83° 51' 50"W(243,878)
GW5	-	Latitude 36° 35' 40"N(4,053,520) Longitude 83° 52' 09"W(243,420)
GW12	-	Latitude 36° 35' 20"N(4,053,172) Longitude 83° 53' 33"W(241,233)

These sites were chosen for the following reasons:

- 1) These sites will monitor the groundwater from the aquifers which have been identified in this area.
- 2) There is history of water quality and quantity at the sites.

Samples taken at these sites will be analyzed for the following parameters using the methods listed:

<u>Parameter</u>	<u>Method</u>
Water level	Water level indicator
pH (standard units)	423*
acidity (mg/l)	402*
alkalinity (mg/l)	403*
dissolved iron (mg/l)	303*
dissolved manganese (mg/l)	303*
total sulfate (mg/l)	426c*
specific conductance (micromhos/cm)or	205*
total dissolved solids (mg/l)	209B*
temperature (°F)	

*"Standard Methods for the examination of Water and Wastewater." 16th Edition, 1985.

Results of all analyses will be reported to the Department no later than the end of the month at the end of each quarter. Reporting will be done on Department approved water quality data entry forms. During Mining Sample Frequency: One (1) per three (3) months until final bond release.

ATTACHMENT 30.4.A

Ground Water Monitoring Point Descriptions

GW1

- a) Mingo Formation
- b) 6" casing – 55' deep
- c) This site is currently being sampled as part of the during mining ground-water and reclamation monitoring program for existing permits.

GW5

- a) Colluvium
- b) 6" casing
- c) This site is currently being sampled as part of the during mining ground-water and reclamation monitoring program for existing permits.

GW12

- a) Fracture Zone on Clear Fork
- b) Spring
- c) This site is currently being sampled as part of the during mining ground-water and reclamation monitoring program for existing permits.

0.6 List the name and address of the laboratory which will perform required testing of water samples.

Name Technical Water Laboratories, Inc.

Address P.O. Box 309, Bledsoe Kentucky 40810

31. Sediment Ponds and Impoundments

31.1 Complete the following table for each proposed sediment pond and impoundment. The numbers preceding the rows refer to the list of titles below the chart.

1	2	3	4	5	6	7
1	A	A	A	A	A	A
2	63.70	87.50	33.60	169.20	56.70	35.80
3	31.70	24.00	20.60	43.00	22.20	14.50
4	0.777	0.323	0.287	5.804	0.323	0.323
5	1.003	0.418	0.416	7.789	0.418	0.418
6	1.003	0.418	0.685	7.789	0.418	0.418
7	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out
8	1.473	0.619	0.874	13.206	0.619	0.619
9	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out	Dug-out
10	36-35-25	36-36-36	36-35-44	36-35-47	36-36-00	36-35-41
11	83-53-48	83-53-59	83-53-13	83-52-36	83-53-37	83-52-15
12						

- 1.) Facility I.D. No.
- 2.) Hazard Classification (A, B, or C)
- 3.) Total Drainage Area (Acres)
- 4.) Disturbed Drainage Area (Acres)
- 5.) Sediment Storage Capacity (Acre-Feet)
- 6.) Storage Capacity at Principal Spillway (Acre-Feet)
- 7.) Storage Capacity at Emergency Spillway (Acre-Feet)
- 8.) Structure Height at Emergency Spillway Measured from Upstream Toe (Feet)
- 9.) Storage Capacity at Top of Dam (Acre-Feet)
- 10.) Structure Height at Top of Dam Measured from Downstream Toe (Feet)
- 11.) Latitude
- 12.) Longitude

See Attachment 31.1 cont.

31.2 Were any of the structures listed in chart 30.1, constructed prior to January 18, 1983? [] YES [XX] NO. If "YES", identify each structure and submit as "Attachment 31.2.A, 31.2.B", etc., the descriptions and compliance plan(s) required by 405 KAR 8:030, Section 25, or 405 KAR 8:040, Section 25, as appropriate.

31.3 For each proposed impoundment submit the applicable design plans and descriptions, including compliance demonstration documents, as required by 405 KAR 8:030 or 8:040, Section 34. Design plans and descriptions shall be submitted as "Attachment 31.3.A, 31.3.B," etc. Compliance demonstration documents shall be appropriately labeled and submitted in a separate document cover entitled "Sediment Ponds - Compliance Demonstration Documents". Put the applicant's name and the application number on the face of the document cover. If other state or federal agencies receive a copy of the permit application, a copy of the compliance demonstration documents shall also be provided to such agencies unless specifically waived.
See Compliance Demonstration.

NOTE: If any proposed sediment ponds are to be retained as permanent impoundments, the applicant shall ensure that such structures have been designed to meet the requirements of 405 KAR 16:100 or 405 KAR 18:100 as appropriate.

31.4 Will water be chemically treated at any of the proposed or existing sediment structures? [XX] YES [] NO. If "YES", provide the following information.

See Attachment 31.4.A

I.D. Number	TREATMENT CHEMICALS	Described the method of treatment application and special structures or facilities to be used

If additional pages are necessary, submit as "Item 31.4 continued". If special structures are to be utilized, submit as "Attachment 31.4.A, 31.4.B" etc., supporting engineering designs and calculations

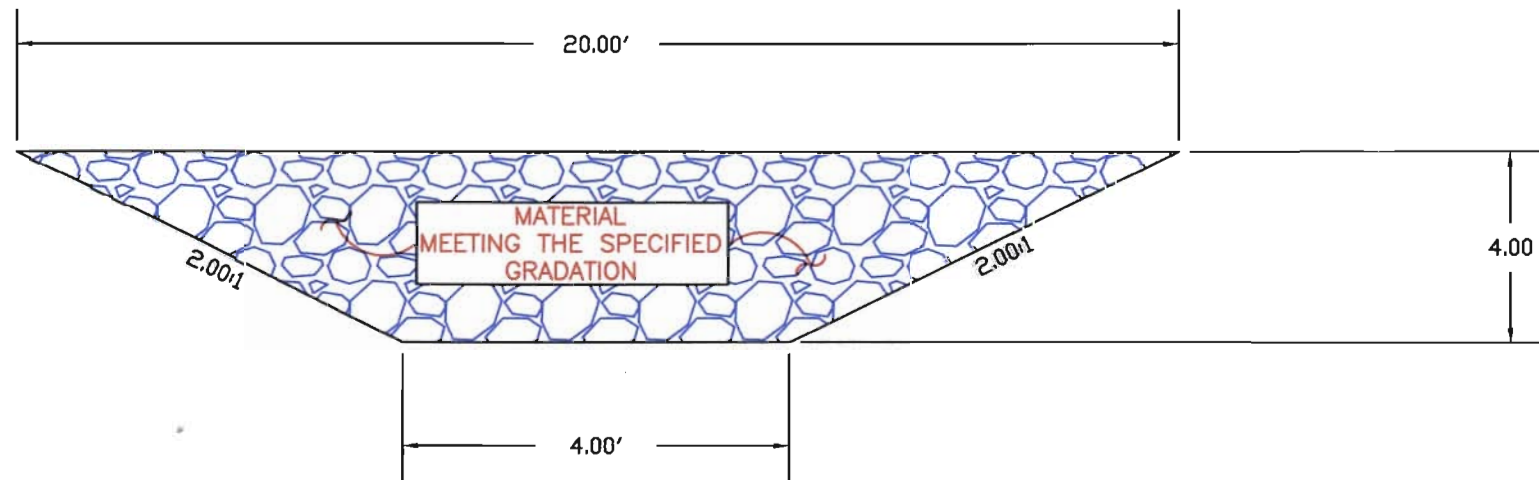
ATTACHMENT 31.4.A

TOXIC DISCHARGE TREATMENT PLAN

Although no potential acidic units have been identified within the proposed permit area, this plan will be implemented in the event any toxic units or discharges are encountered. It is anticipated that the detention time provided by each sediment pond proposed in this application would provide adequate time for toxic discharge to settle prior to reaching the discharge point of each pond. However in the event that the discharge becomes iron rich the follow chemical treatment may be implemented at the pond. A lime supplement in either solid, powder or liquid form will be added to the pond at the inflow point or directly into the pond. The water and the lime are mixed and the toxic discharge is neutralized.

This system has been proven to work is relatively cost effective for the operator. This treatment is conducted as often as needed. When the regular water samples are taken and the analysis is reviewed, the treatment is adjusted to the results. In addition, the seasonal variation in rainfall will flush the pond and stream system just as prior to mining and the post-mining reclamation will reduce the effects downstream.

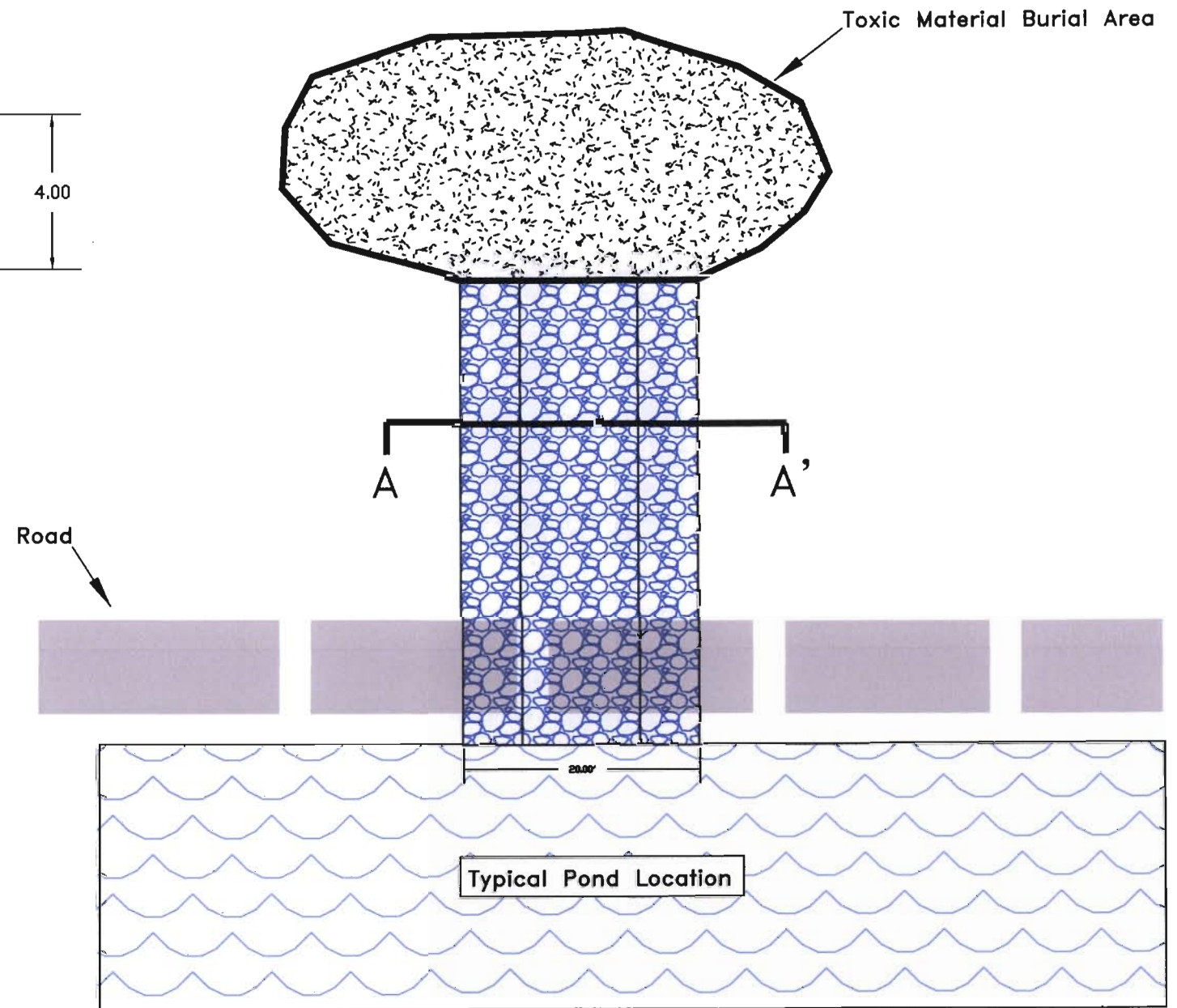
This plan will not be implemented if toxic strata is not encounter.



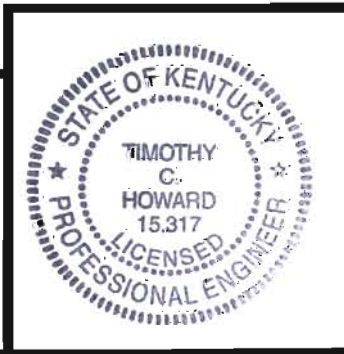
SECTION A - A'
DETAIL OF FRENCH DRAIN

Note:
French drain to be constructed of segregated materials ranging in size from a minimum of 6" inches in diameter to a maximum of 3' feet in diameter.

Note:
Exact location of French Drain into pond may vary in field.



I, Timothy C. Howard, P.E. No. 15,317
Date: 12/22/03
hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.	
Permit No. 807-0365 French Drain Detail Drawing	
Scale: As-Shown	Page No. 1 of 1
Prepared by: Howard Engineering & Geology, Inc.	

Doug & Jerome:

Pic #100-0274 was taken below the proposed project where back creek empties into Clear Fork looking down stream from the operation you can see hwy 74 in the photo. There is a beaver dam below causing the water to build up.

Pic #100-0274 was taken from the same location looking up stream.

Pic #034 is of a rock overhang approximately 10 to 15 feet in elevation above the Back Creek Stream.

Pic #36 is of a rock overhang approximately 10 to 15 feet in elevation above Back Creek.

Pic #38 is of Back Creek flowing below the AML area. The overhangs shown in 34 and 36 are not viable in this photo but were located on the left side in the photo.

Pic's #44 and #45 are close up views of the overhang show in photo 36.

Doug I have also include a PDF of the MRP map with the approximate location of each photo designated with pdf sticky notes.

Thanks

Tim

Please give me a call when you get this



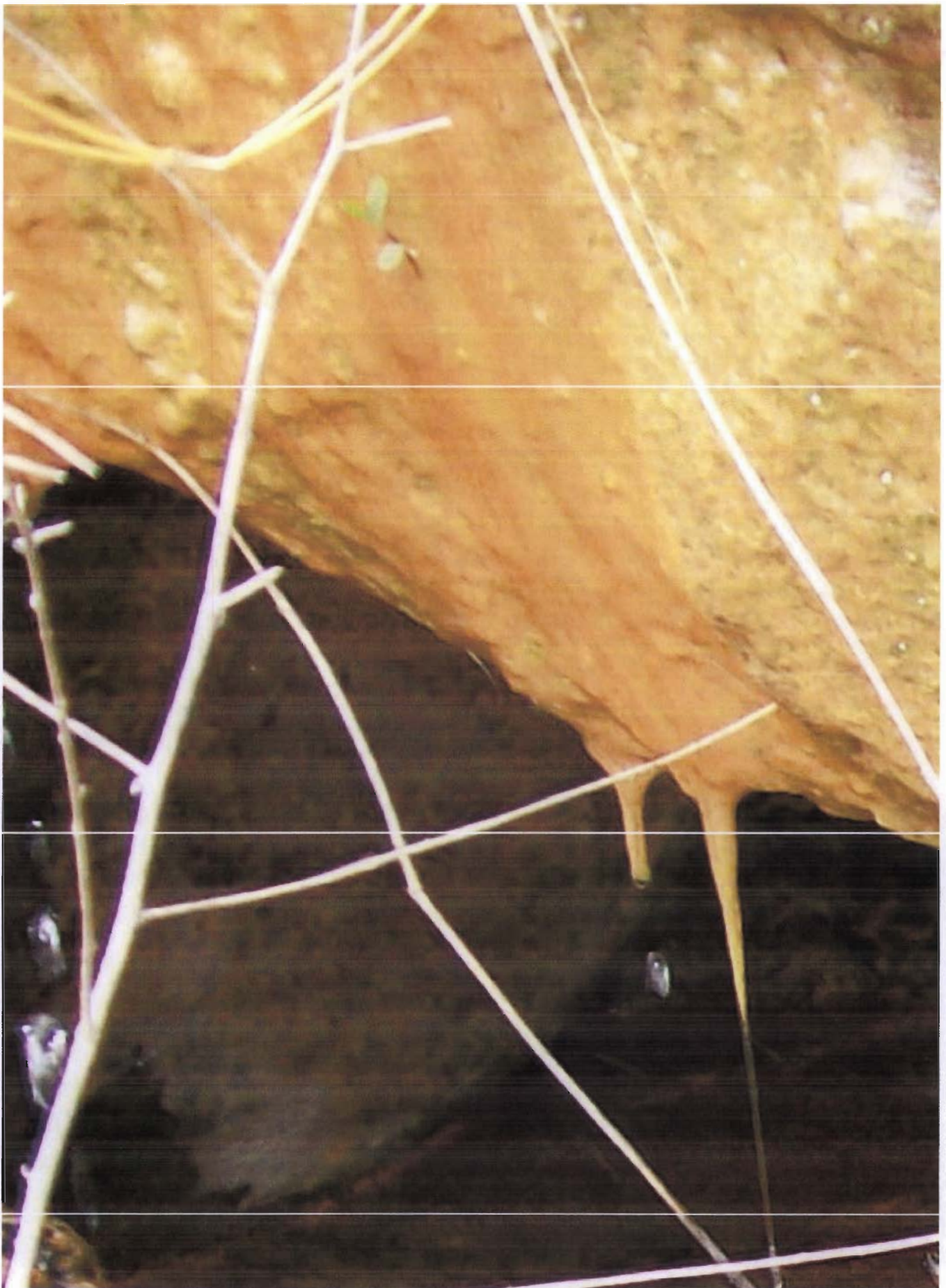












- 31.5 Provide a plan for the periodic maintenance of all sediment structures and discuss the proposed sediment clean-out schedule. Provide information as "Attachment 31.5.A".
See Attachment 31.5.A.
- 31.6 Provide a removal plan for all temporary impoundments. Submit as "Attachment 31.6.A".
See Attachment 31.6.A.

32. Diversions

- 32.1 Is authorization to conduct mining and reclamations or to construct mining related facilities within 100 feet of an intermittent or perennial stream being requested?
 YES NO. If "YES", provide the following information for all of the following.
 - (a) A map showing the location(s) where such authorization is requested, and the proposed disturbance(s)/facility(ies) with an indication of the specific distance to the stream(s). Submit as "Attachment 32.1.A".
 - (b) Cross-sections and a longitudinal profile of the stream's premining and postmining configuration. Submit as "Attachment 32.1.B".
 - (c) A description, including maps, plans, drawings, etc., of the specific measures to be taken to protect the stream(s) during the mining and reclamation operation. Submit as "Attachment 32.1.C".
See MRP map for location of roads for F, H, and I.
- 32.2 Will the disturbances referenced in item 32.1 result in the temporary or permanent diversion of an intermittent or perennial stream?
 YES NO. If "YES", provide as "Attachment 32.2.A", the design calculations and other pertinent information to demonstrate compliance with 405 KAR 16:080, Section 2, or 405 KAR 18:080, Section 2, as appropriate.
- 32.3 Complete the following chart for all diversions:

Diversion Number	Length of Diversion	Design Storm	Type of Channel	Design Velocity	Av. Slope	Erosion Control Methods
DD1-HF1	520'	100 yr.	Trap.	4.26 ft/s	1%	See Note
DD2-HF1	574'	100 yr.	Trap.	4.64 ft/s	1%	See Note
DD3-HF1	665'	100 yr.	Trap.	18.13 ft/s	50%	See Note
DD4-HF1	585'	100 yr.	Trap.	17.26 ft/s	50%	See Note

Note: Rip-Rap or Cut In Solid.

ATTACHMENT 31.5.A

The sediment structures that will be constructed and utilized under this application will be inspected after each significant rainfall event to insure the integrity and stability of the structures and to insure that the spillways are clear and functioning properly. Also, these structures will be inspected by a registered professional engineer annually, at a minimum, to certify that the structures are being maintained in such a manner that the effluent from the structures will continue to meet the performance standards of the "Permanent Program".

The sediment structures will be maintained and when sediment level reaches the elevation designated in the pond designs, they will be cleaned out. Although no potential acidic strata has been identified the material taken from the pond during clean-out shall be analyzed to determine if the material is toxic. If the analysis shows the material to be toxic it will be disposed of as described in Attachment 29.2 A (Toxic Materials Handling Plan).

ATTACHMENT 31.6.A

Prior to removal of these sediment structures, all water will be removed from the structures either by pump or siphon. Removal of water by any means will be done in such a manner as to prevent excessive erosion to the surrounding areas.

After all water has been removed from the structure, the remaining sediment will be allowed to dry. The rip-rap used for erosion control around the structures will be excavated and temporarily stored within the permit area for later use in the reclamation of the sediment structure sites.

Once the remaining sediment in the structures has dried thoroughly, the dried sediment material will be removed and mixed with the material being used to backfill the mining operation. Dugout structures located on-bench will be filled in and a small depression of one (1) to two (2) feet in depth will be left to comply with the reclamation plan. Sediment structure sites will be regraded, seeded, and mulched to establish ground cover and prevent erosion. The sediment structure sites will be revegetated with a variety of grasses and legumes immediately after the structures have been removed and reclaimed.

Stream Channel Restoration Plan

Existing Conditions: All of the areas proposed for stream channel restoration, from toe of HF through toe of Pond #1 and through Pond #4, have been previously disturbed by mining, logging and oil/gas exploration. As a result of these previous disturbances, the channels exhibit non-native channel characteristics. The size of the water shed above the lower most disturbance proposed is approximately 37.38 acres. The existing slope of the stream is approximately 2%. Riffle/Run/Pool ratio for this stream 0/85/15. The stream channel is approximately five feet with the high water mark only occupying approximately two feet. Current riparian vegetation consists of non-native and non-riparian herbaceous species dominated by lespedeza and fescue, with minor amounts of multi-flora rose and blackberry. Woody species include non-native and non-riparian and include autumn olive, white pine, yellow poplar and black locust. Existing substrate consists of unsorted, angular shale and "red-dog" from previous refuse fill in area at Pond #1 area and unsorted mine spoil at Pond #4. Most of the substrate is too small to provide adequate habitat with most material being gravel sized or smaller. Riffle sections are characterized as predominantly gravel sized particles of shale and red-dog and minor amounts of siltstone for Pond #1 and predominantly clay sediments for Pond #4. Pool sections at Pond #1 are characterized as predominantly gravel sized particles and smaller with a thin coating of clay deposits. There are no defined pools at Pond #4.

Mitigation: The first phase of stream channel restoration will be implemented by using a small excavator to dip and remove the sediment between the toe of the fill and the toe of the pond. The second phase of channel restoration will be re-constructing a natural, normal flow channel (bed width) and full bank width designed as shown on the post-mining cross sections and in accordance with the pre-mining dimensions by the use of an excavator after approval to remove Pond #1 or Pond #4 have been granted. These channels will be constructed along the entire reach from the toe of Hollow Fill #1 through the toe of Pond #1 and through Pond #4. Due to the disturbed nature of the existing reaches to be impacted, Marsee Branch located to the east of the operation will be used as a reference reach for mitigation dimensions and substrate. The natural channel will be constructed in an irregular shape and similar to the pre-mining reach to encourage the development of natural stream sinuosity with riffle-pool complexes using a mixed substrate material at least 6 inches in depth. Substrate material will be gathered from the overburden material generated during the mining process and harvested during the backfilling operations. The Marsee Branch substrate will be used as a guide in selection of substrate material for the restored channels. Cobble sized material and larger will be predominantly

sandstone. Gravel sized material and smaller will be layered siltstone or durable shale. All substrate material will be non-toxic, non-acidic, and durable. Natural channel design techniques shall be utilized, using the existing morphology to design the restored channel. Details of the mitigation plan are included in the next section and associated drawings. This method of channel restoration will allow the operation to restore stream impacts as an integral part of satisfying the DNR regulations. The result of this methodology will be a minimization of the temporal stream impacts.

The next phase of stream channel restoration will occur after the natural channel has been constructed. Riparian revegetation will be planted as prescribed in Table 1 in the proposed riparian zone of 50 linear feet from the normal water height of the reconstructed channel. The revegetation plan has been designed to provide both short-term erosion control through immediate herbaceous groundcover along with long-term restoration of stream function and bank stability. Proposed riparian species were chosen based on their value to stream function, availability, non-invasiveness, tolerance to minespoil type soil conditions, availability and native occurrences and are from Appendix 4 of "Guidelines for Stream & Wetland Protection in Kentucky" by the Kentucky Division of Water. Shellbark hickory was chosen as a hardwood exfoliating bark tree species for its value as potential roost habitat for the Indiana Bat (*Myotis sodalis*), as required by DNR. Woody stems will be planted on five feet centers.

Detailed Restoration Plan

The stream channel restoration plan in detail will involve stream reconstruction methods designed for steep gradient streams in this region.

Less than 10%: Riffle-pool complex structures will be constructed at intervals of 60-80 feet with an excavator using durable sandstone boulders in a cross vane configuration or using log vane structures. Stream banks will be stabilized with durable sandstone boulders, and root wad revetments alternating bank sides. The bank full widths will be in accordance with the pre-impact widths with the reference reaches used as a guide.

After the channels have been constructed, a riparian zone of 50 feet from the centerline of the stream channel will be established utilizing the following:

Table 1

Riparian Zone Revegetation

Common Name	Scientific Name	Seeding Rate
HERBACEOUS GROUNDCOVER		
Sedge	<i>Carex granularis</i>	10 lbs./ac.
Annual Rye	<i>Secale cereale</i>	25 lbs./ac.
Deertongue grass	<i>Panicum clandestinum</i>	2 lbs/ac.
TREES		
Red maple	<i>Acer rubrum</i>	20/ac.
Green ash	<i>Fraxinus pennsylvanica</i>	30/ac.
Shellbark hickory	<i>Carya laciniosa</i>	30/ac.
Yellow poplar	<i>Liriodendron tulipifera</i>	100/ac.
SHRUBS		
Alder	<i>Alnus serrulata</i>	40/ac.
Silky Dogwood	<i>Cornus amomum</i>	30/ac.
Spicebush	<i>Lindera benzoin</i>	50/ac.

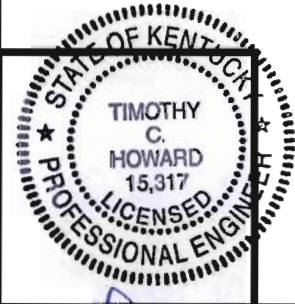
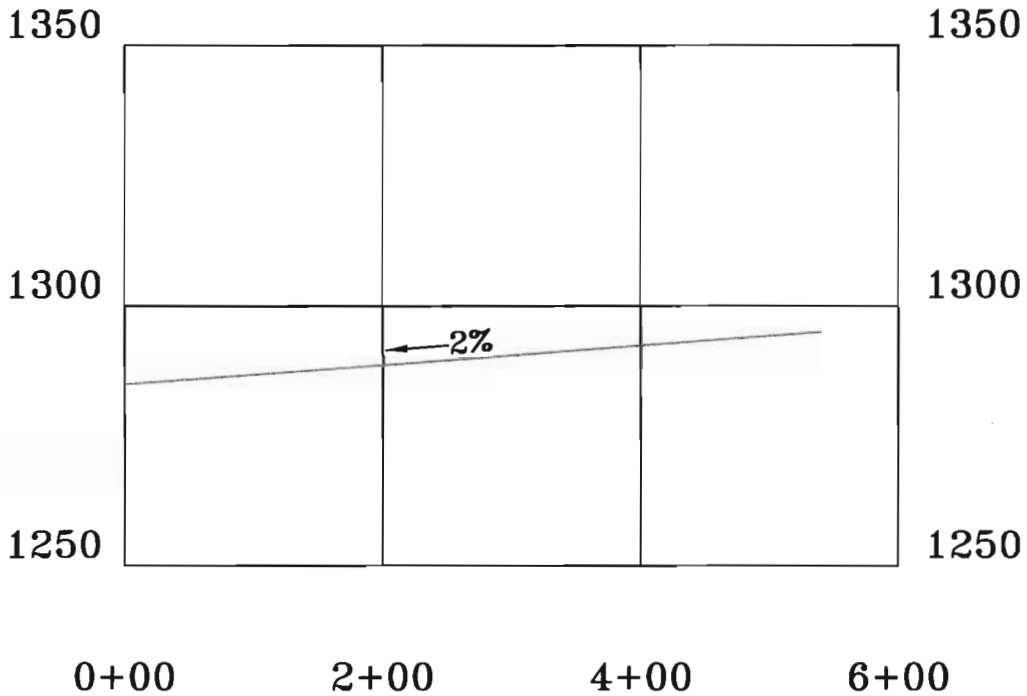
Note: Additional species may be added for nitrogen fixing capability.

Herbaceous groundcover will be planted by hydroseeder method with soil amendments included. Fiber mulch will be included in the process at a rate of 1500 lbs. /ac. Tree and shrub seedlings will be planted during the early spring or late fall planting periods using the dibble bar or mattock method. The trees and shrubs will be planted in a random/irregular, mixed distribution pattern starting at the average depth and extending 50 feet each side of the channel. Seed mixtures planted will be 98% pure and free of any noxious or invasive plant species.

If any exotic or undesirable species should occur within the riparian zone control techniques described by the Nature Conservancy that follow NPS IPM guidelines will be utilized. The methods utilized will be by mechanical means and will include: Power tools (chain saws, weed whips, winches); and or hand tools (shovels, pulaskis, loppers, Weed Wrenches™, grip hoists, machetes, chokers); and manual removal of herbaceous and shallowly-rooted plants is relatively inexpensive and can be used for plowing or pulling out large individual plants.

DIMENSIONS

Riffle/Pool/Run % = 0/15/85
 Riffle Length = 0
 Pool Length = 1' - 2'

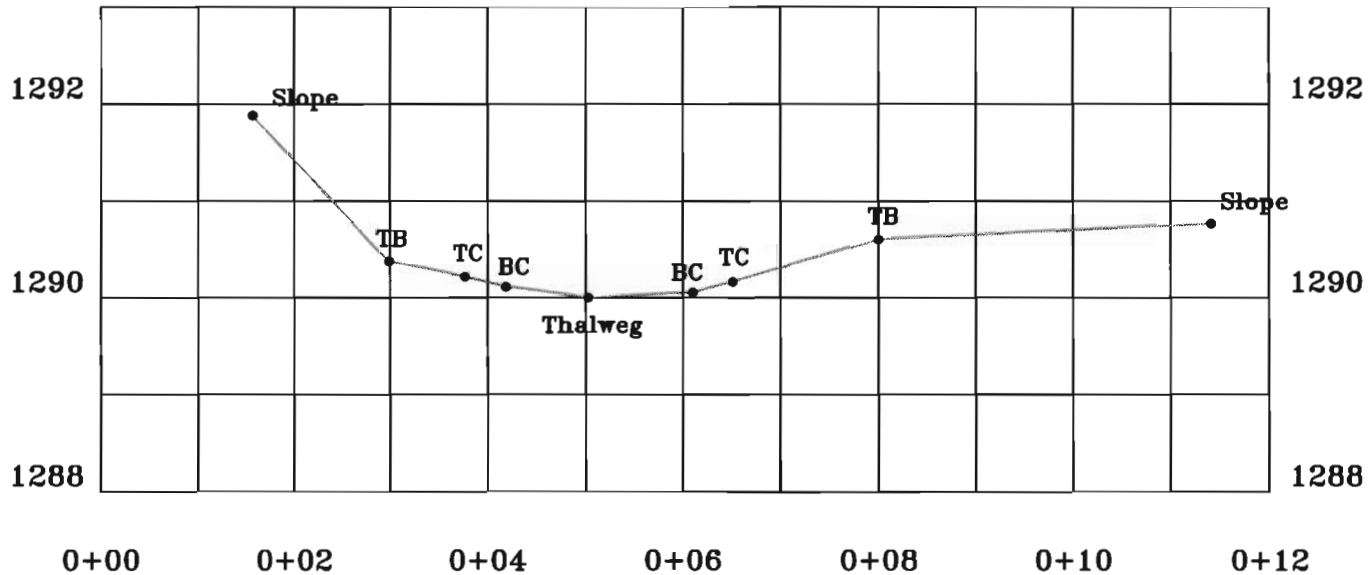


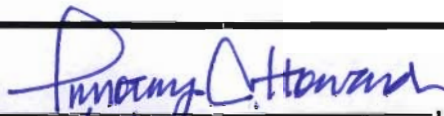
I, Timothy C. Howard, P.E. No. 15,317
 Date: 11/14/06
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

<i>Appolo Fuels, Inc.</i>	
Permit No. 807-0365 Existing Profile Attachment 32.1.C	
Scale: As Shown	Page No. 1 of 1
Prepared by Howard Engineering & Geology, Inc.	

DIMENSIONS

Bankfull Width = 2' - 3'
 Flood Prone Width = 4' - 5'
 Pool Depth = 6" - 12"

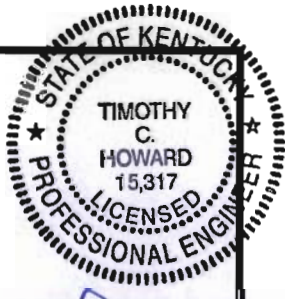
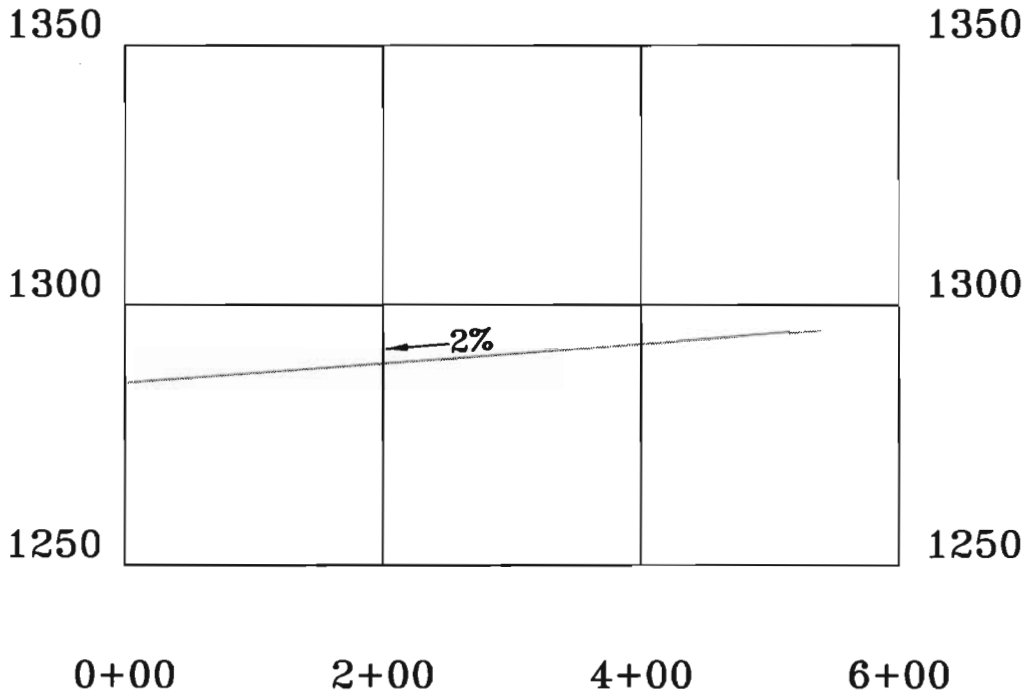



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 Date: 11/14/08
 I hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.

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Permit No. 807-0365 Existing Cross Section Attachment 32.1.C	
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DIMENSIONS

Riffle/Pool/Run % = 0/15/85
 Riffle Length = 0
 Pool Length = 1' - 2'



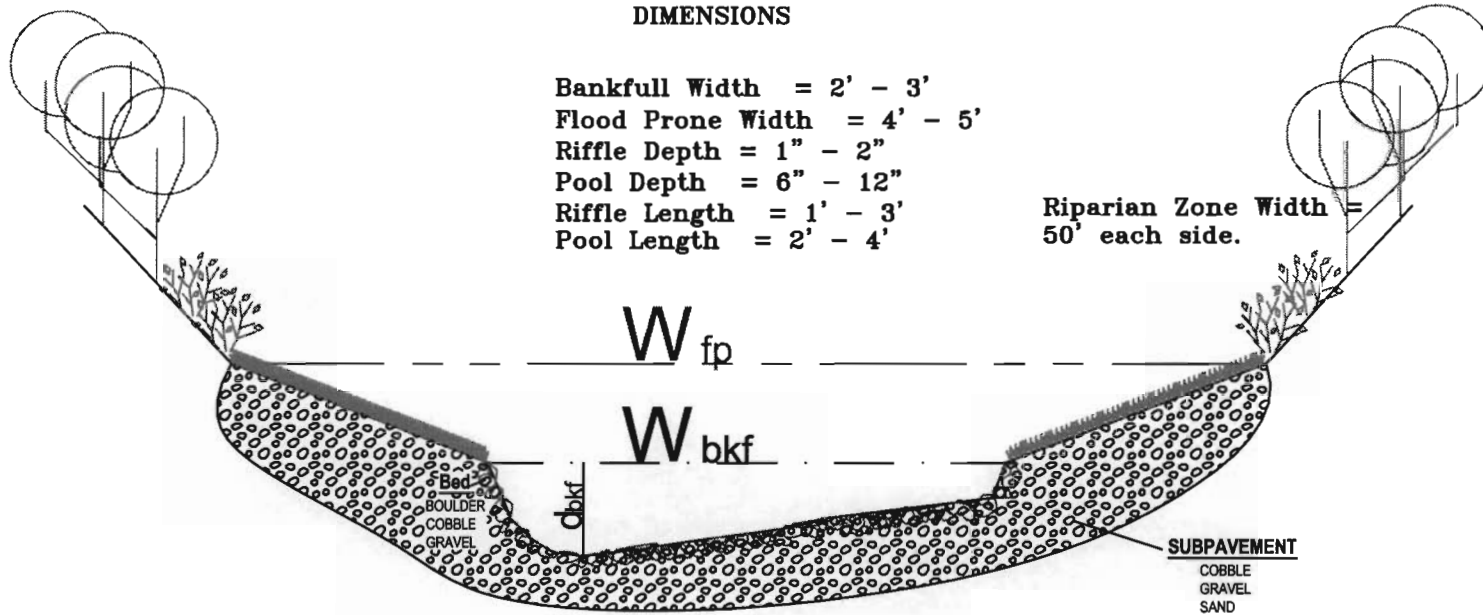
I, Timothy C. Howard, P.E. No. 15,317
 Date: 11/14/08
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Appolo Fuels, Inc.
 Permit No. 807-0365
 Proposed Profile
 Attachment 32.1.C
 Scale: As Shown | Page No. 1 of 1
 Prepared by:
Howard Engineering & Geology, Inc.

DIMENSIONS

Bankfull Width = 2' - 3'
 Flood Prone Width = 4' - 5'
 Riffle Depth = 1" - 2"
 Pool Depth = 6" - 12"
 Riffle Length = 1' - 3'
 Pool Length = 2' - 4'

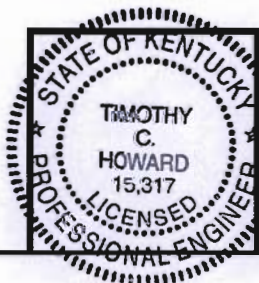
Riparian Zone Width =
 50' each side.



GENERAL CHANNEL BED AND SUBPAVEMENT MATERIALS

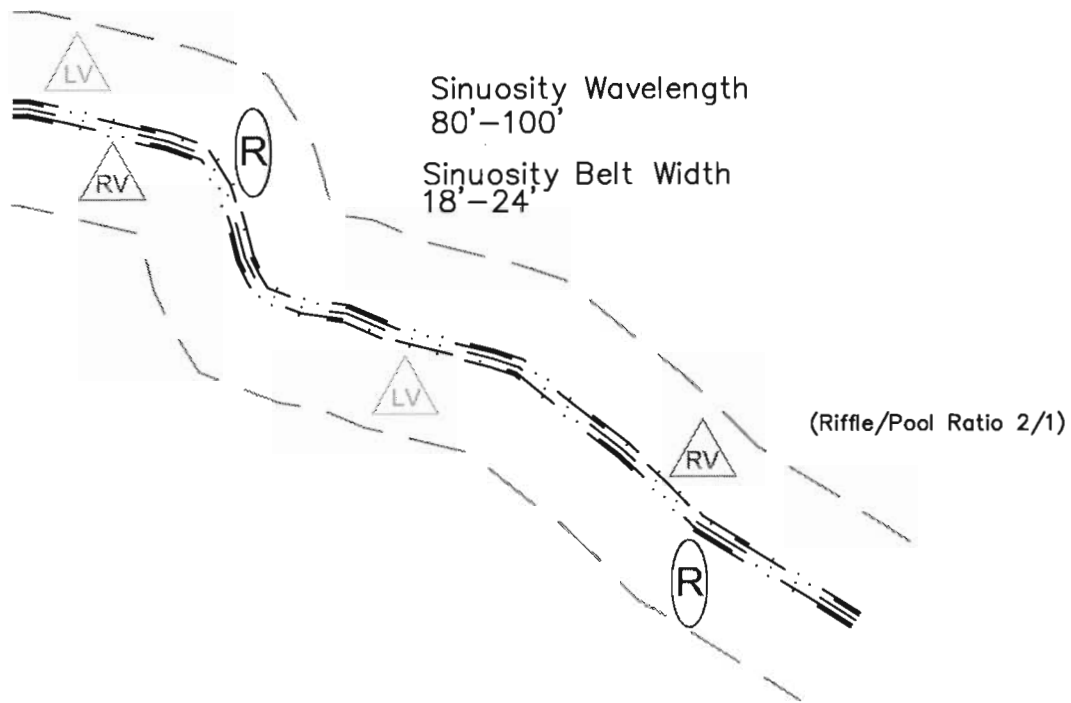
General PARTICLE Size-Classes

- Boulder - Large: 20 inches +
 - Small: 10 to 20 inches
- Cobble - 2.5 to 10 inches
- Gravel - .08 to 2.5 inches
- Sand - .062 to 2.0 millimeters
- Silt/Clay - < .062 millimeters



Timothy C. Howard, P.E. No. 15,317
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Appolo Fuels, Inc.	
Permit No. 807-0365 Proposed Cross Section Attachment 32.1.C	
Scale: None	Page No. 1 of 1
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IN-STREAM STRUCTURES



Root Wad Revetment

Log Vane

Rock Vane

- — Riparian Zone 50' ea.
- Flood Prone Width
- Stream Thalweg
- - Bankfull Width



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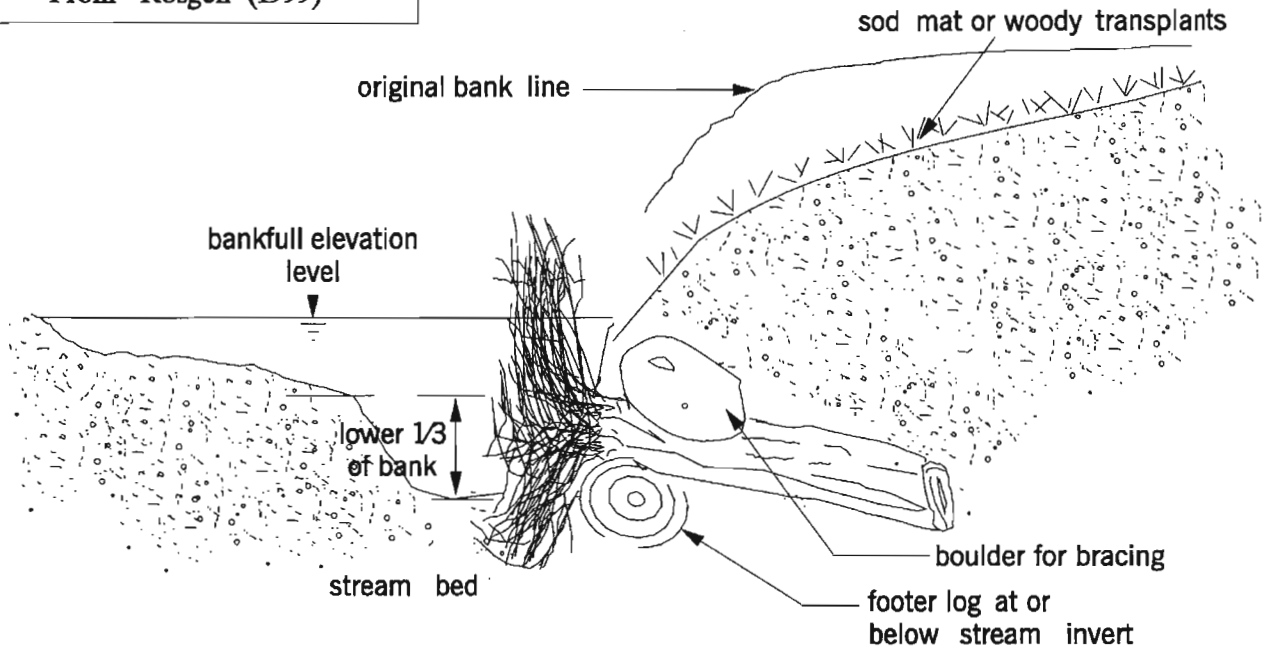
Permit No. 807-0365
 Plan View - Stream Channel Restoration Plan
 Attachment 32.1.C

Scale: 1" = 100' Page No. 1 of 1

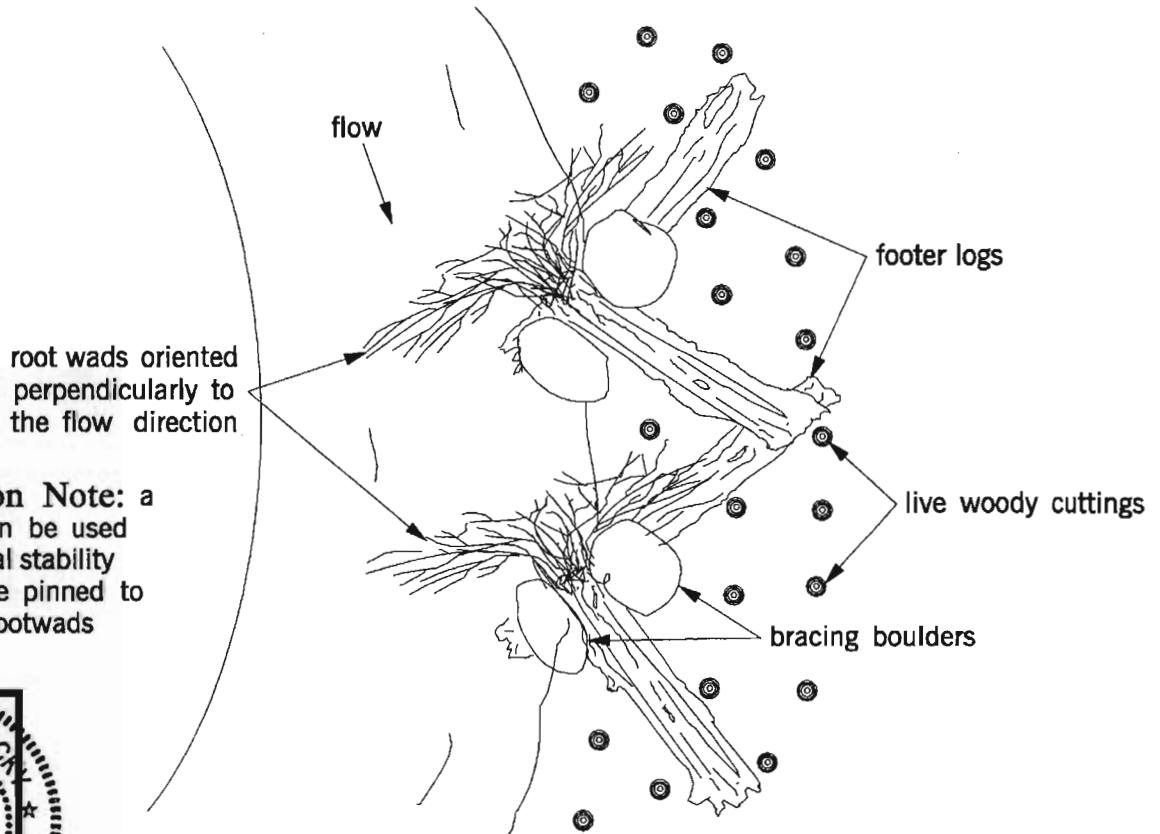
Howard Engineering & Geology, Inc. Prepared by

Section & Plan Views Adapted From Rosgen (1999)

SECTION VIEW

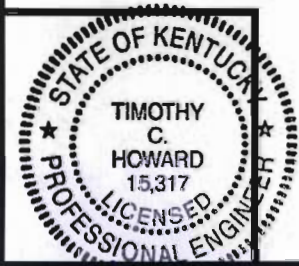


PLAN VIEW



root wads oriented perpendicularly to the flow direction

Construction Note: a brace log can be used for additional stability and should be pinned to adjacent rootwads



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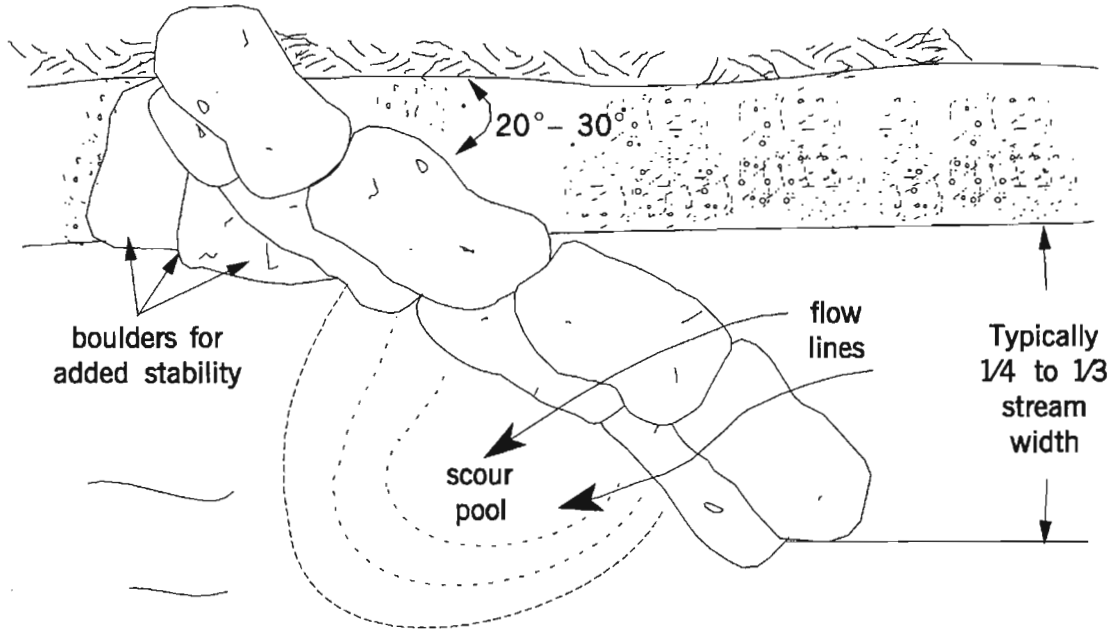
Permit No. 807-0365
Typical Root Wad Revetment
Attachment 32.1.C

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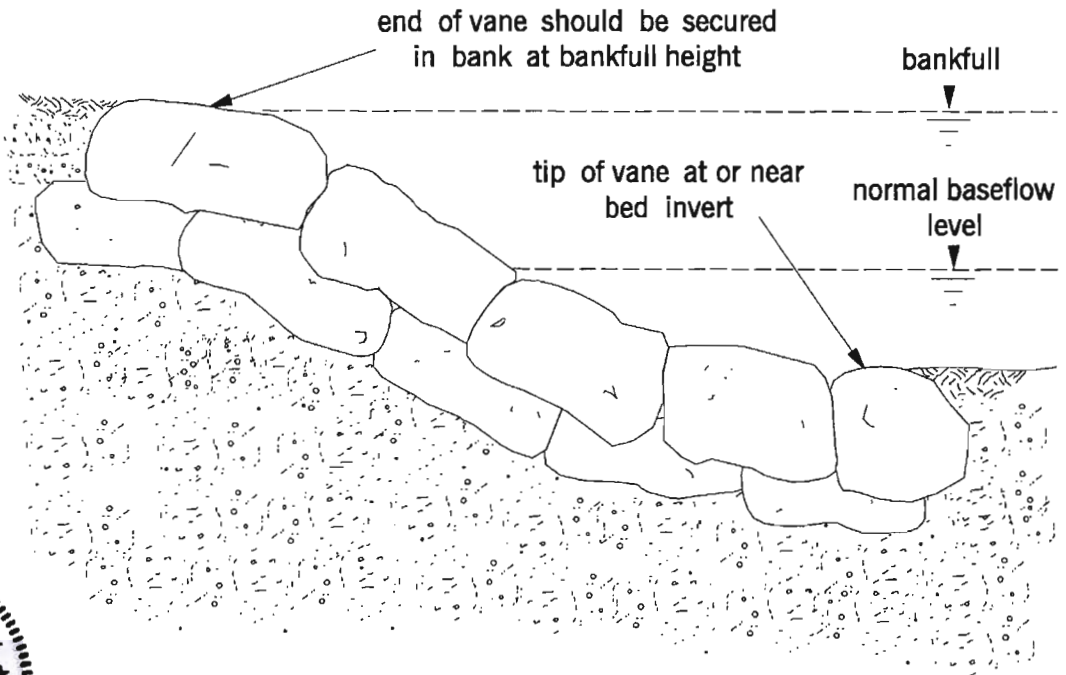
Scale: None Page No. 1 of 1
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Section & Plan Views Adapted
From Rosgen (1999)

PLAN VIEW: ROCK VANE



SECTION VIEW: ROCK VANE

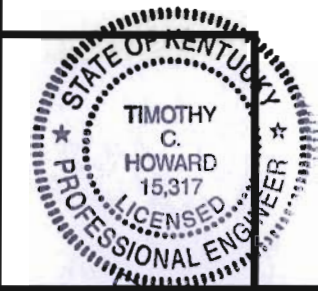
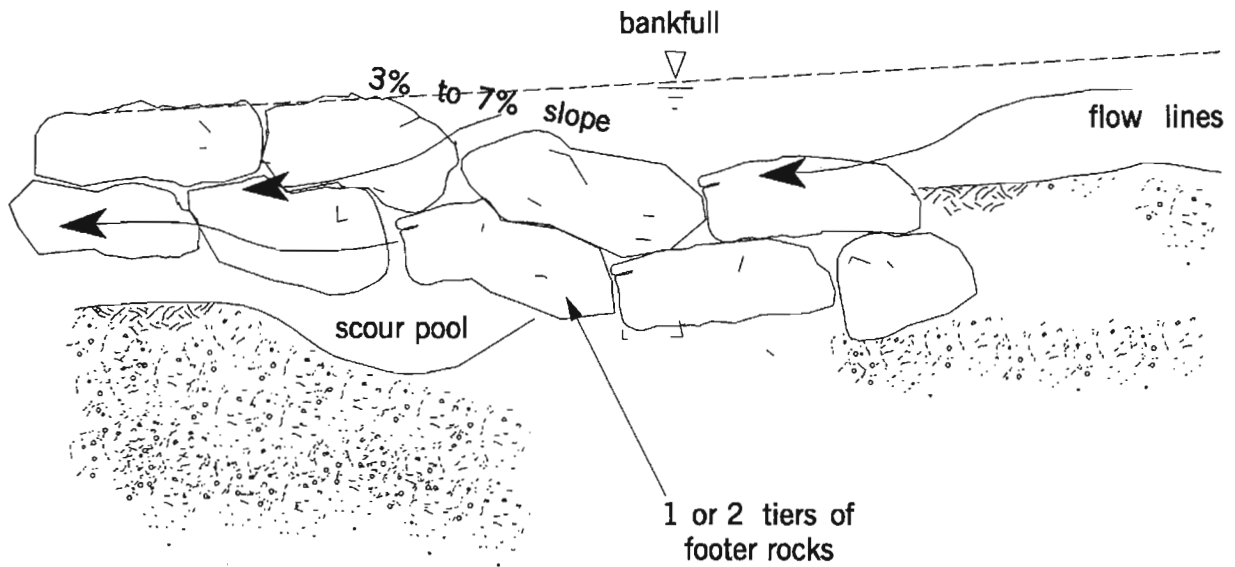


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 Date: 11/14/08
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<i>Appolo Fuels, Inc.</i>	
Permit No. 807-0365 Typical Rock Vane Attachment 32.1.C	
Scale: None	Page No. 1 of 1
Prepared by: Howard Engineering & Geology, Inc.	

Section & Plan Views Adapted
From Rosgen (1999)

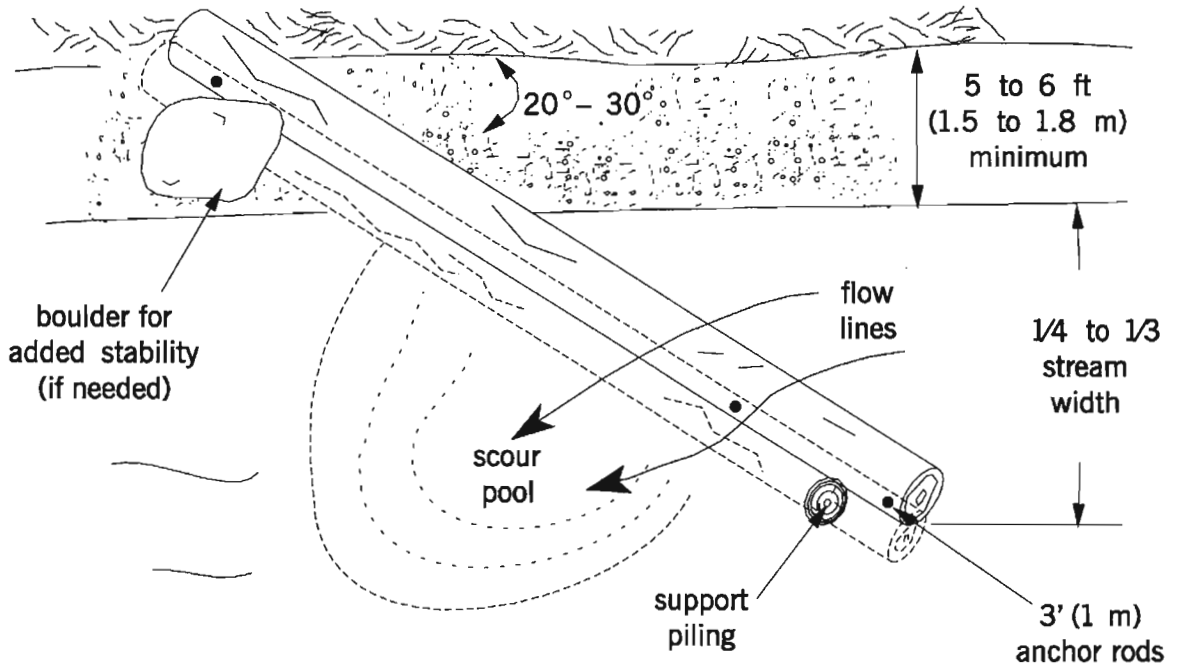
PROFILE VIEW: STRAIGHT VANE



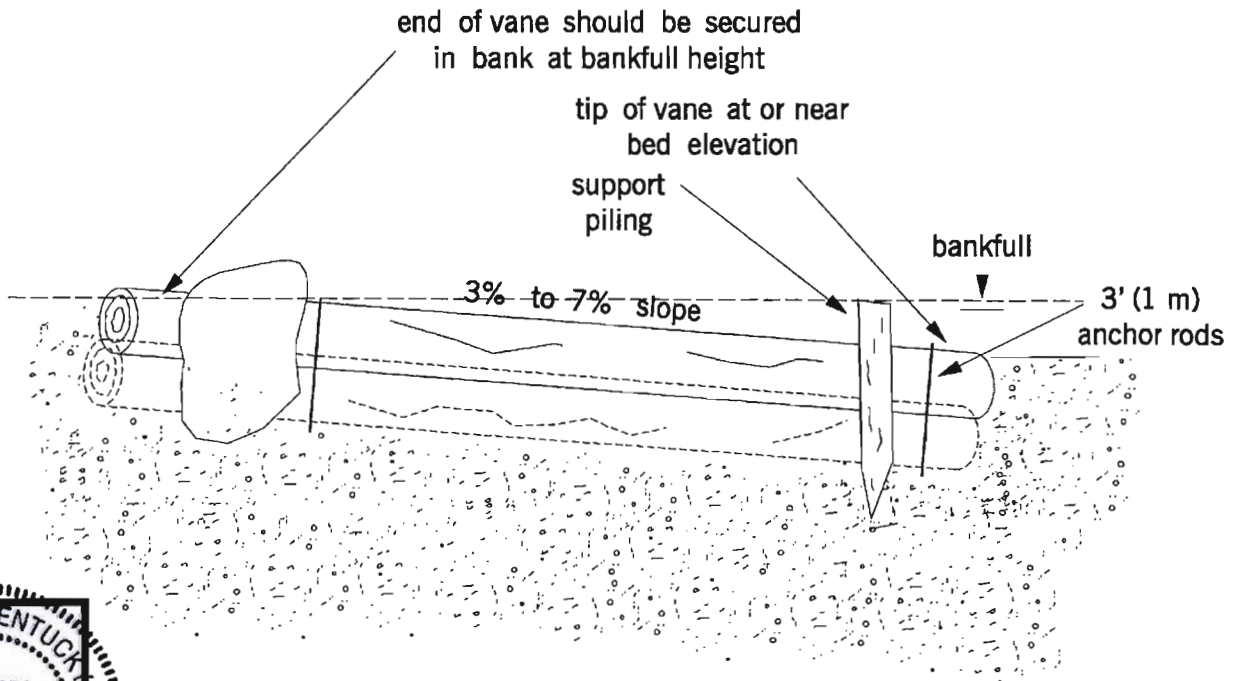
I, Timothy C. Howard, P.E. No. 15,317
Date: 11/14/08
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Permit No. 807-0365 Typical Rock Vane Attachment 32.1.C	
Scale: None	Page No. 1 of 1
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PLAN VIEW: LOG VANE



SECTION VIEW: LOG VANE



Appolo Fuels, Inc.

Permit No. 807-0365
Typical Log Vane
Attachment 32.1.C

Scale: None

Page No. 1 of 1

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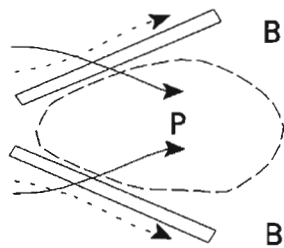
I, Timothy C. Howard, P.E. No. 15,317

Date: 11/14/08

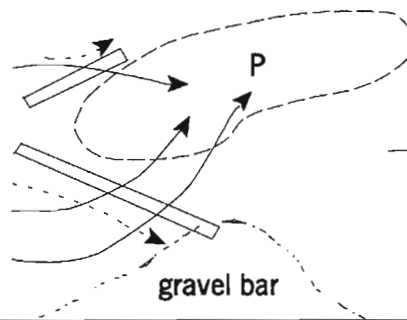
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PLAN VIEW: ALTERNATIVE VANE CONFIGURATIONS

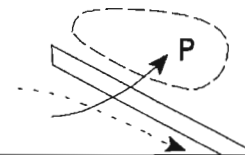
Source: Hey (1995)



Symmetrical



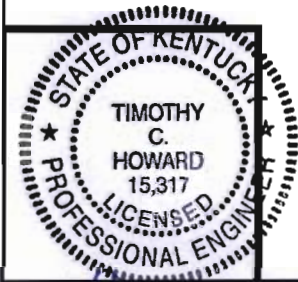
Asymmetrical



Straight

LEGEND:

P, pool; B, bar; E, bank erosion; ———> main/surface flow; - - - - -> near bed flow;
- · - · -> over topping flow



I, Timothy C. Howard, P.E. No. 15,317
 Date: 11/14/08
 hereby certify in accordance with 405 KAR 7:040, Section 10,
 that this document is correct as determined by accepted
 engineering practices and includes all information required
 of it by Chapter 350 and KAR Title 405.

Appolo Fuels, Inc.

Permit No. 807-0365
 Typical Log Vane
 Attachment 32.1.C

Scale: None

Page No. 1 of 1

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Howard Engineering & Geology, Inc.

ATTACHMENT 32.1.A

ZERO FEET (0') OF A STREAM

The surface disturbances to be made as part of this application will include surface mining related activities within zero (0) feet of Back Creek, Sowder Creek and Marsee Branch and within fifty (50) feet of Clear Fork. The proposed zero (0) feet disturbance is road only.

There are no changes or diversions of the streams. Thus, the pre-mining and post-mining configurations will be the same. A stream profile and cross-sections are not necessary.

The streams will be protected by placing straw bale filters at the toe of all disturbances located within 100' of the stream. In addition, all disturbed areas will be seeded and mulched to prevent erosion and provide additional sediment control.

- 32.3 Are any of the proposed diversions to be retained as permanent facilities?
 YES NO. If "YES", list the identification numbers of those diversions. DD1-HF1, DD2-HF1, DD3-HF1 & DD4-HF1.
 Additionally, provide as "Attachment 32.3.A", detailed designs, cross-sections, calculations, and drawings for each proposed diversion ditch to demonstrate compliance with 405 KAR 16:080 or 18:080, Section 1, as appropriate.
See Attachment 32.3.A.

33. Transportation Facilities Plan

- 33.1 Describe the transportation plan for the proposed permit area. The plan shall include a discussion of road maintenance, appropriate maps, cross sections, and specifications for each road width, gradient, surface, cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure. Submit the description as "Attachment 33.1.A".
See Attachment 33.1.A.
- 33.2 Are roads for which construction began prior to January 18, 1983 proposed for use within the permit area? YES NO. If "YES", clearly identify the extent of such roads on the MRP Map and submit the information required to demonstrate compliance with 405 KAR 8:030, Section 25, or 405 KAR 8:040, Section 25 as appropriate. Submit the information as "Attachment 33.2.A".
- 33.3 Will conveyors and/or rail systems be located within the proposed permit area?
 YES NO. If "YES", submit a description as "Attachment 33.3.A" and show on the MRP Map.
- 33.4 Does the applicant propose to use alternate specifications for any road or portions of road within the permit area? YES NO. If "YES", describe the specification to be modified and provide required justification. Submit as "Attachment 33.4.A".
See Attachment 33.4.A.
- 33.5 Describe the measures to be used to ensure that interests of the public are protected if a waiver to conduct surface disturbances within 100' from the right-of-way of any public road or to relocate a public road is being requested. Submit this description as "Attachment 33.5.A".
N/A

34. Air Pollution Control Plan

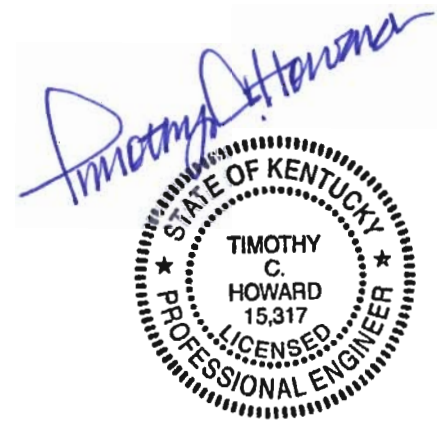
- 34.1 For proposed permit area, describe the fugitive dust control plan to be employed during site preparation, mining, and reclamation. When required, provide an air quality monitoring program and locate monitoring station(s) on the MRP Map. Submit this information as "Attachment 34.1.A".
See Attachment 34.1.A.

Appolo Fuels 807-0365 Diversion DD1-HF1
Worksheet for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.040
Channel Slope	1.00 %
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	89.60 cfs

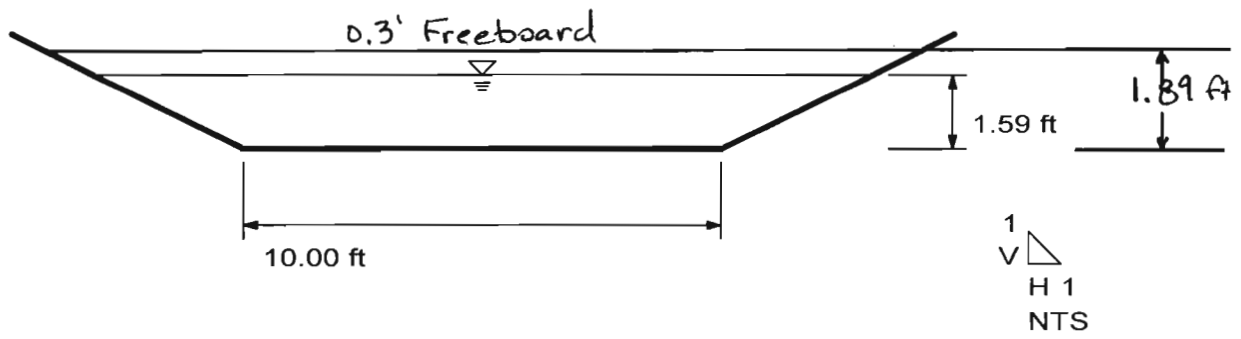
Results		
Depth	1.59	ft
Flow Area	21.04	ft ²
Wetted Perimeter	17.13	ft
Top Width	16.38	ft
Critical Depth	1.24	ft
Critical Slope	0.024251	ft/ft
Velocity	4.26	ft/s
Velocity Head	0.28	ft
Specific Energy	1.88	ft
Froude Number	0.66	
Flow is subcritical.		



Appolo Fuels 807-0365 Diversion DD1-HF1
 Cross Section for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Channel Slope	1.00 %
Depth	1.59 ft
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	89.60 cfs



Howard Engineering & Geology, Inc.

P.O. Box 271
2550 W. Hwy. 72, Suite 1
Harlan, KY 40831

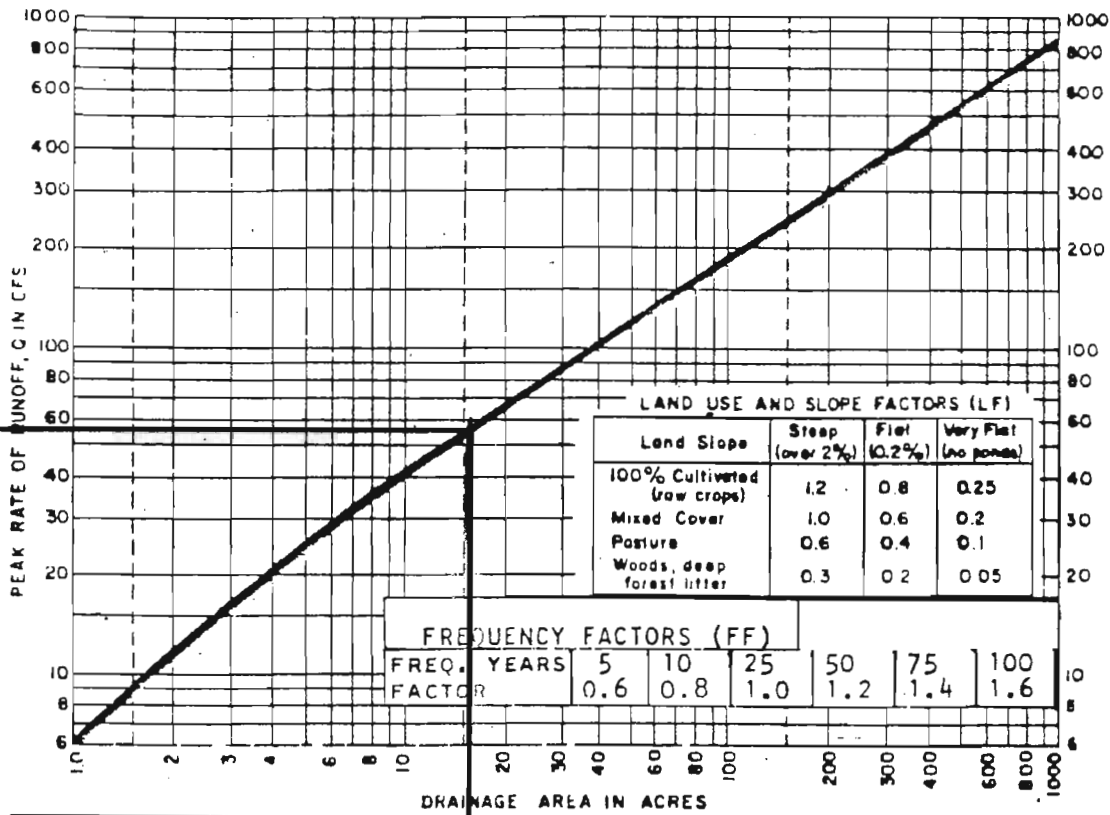
Company Name: Appollo Fuels, Inc.

Project: #807-0365

Diversion Ditch

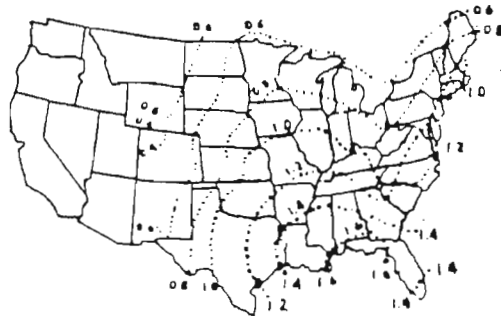
DD1 - HF1

56



15.23 ac.

RAINFALL FACTOR (RF)



FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 1.0 \times 1.6 \times 56$$

$$= 89.60$$

Timothy C. Howard
STATE OF KENTUCKY
TIMOTHY C. HOWARD
15,317
LICENSED PROFESSIONAL ENGINEER

PEAK RUNOFF METHOD FOR
WATERSHEDS UNDER 1,000 ACRES.

Appolo Fuels 807-0365 Diversion DD2-HF1
Worksheet for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.040
Channel Slope	1.00 %
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	118.40 cfs

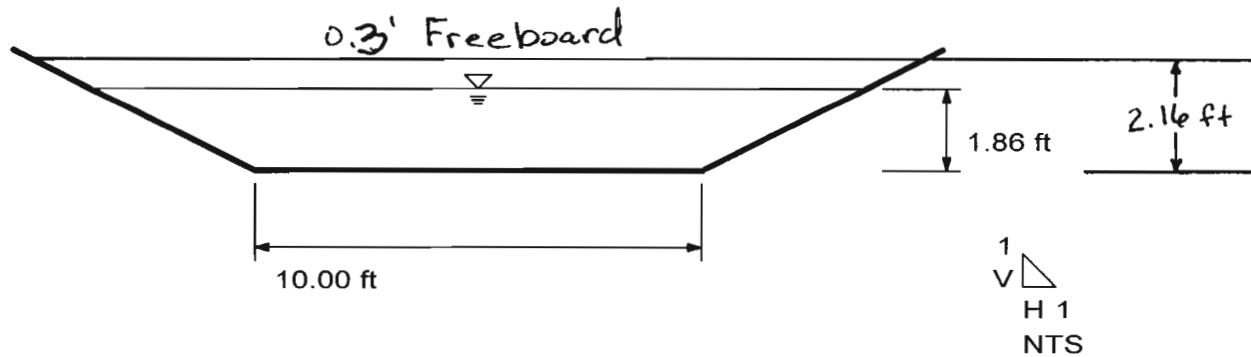
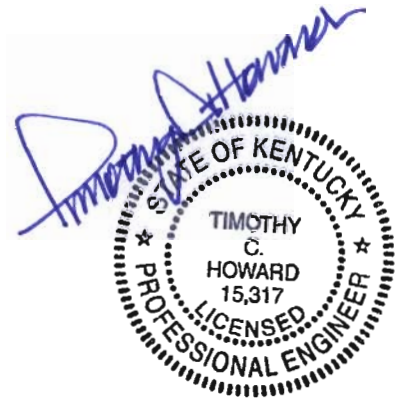
Results		
Depth	1.86	ft
Flow Area	25.54	ft ²
Wetted Perimeter	18.32	ft
Top Width	17.45	ft
Critical Depth	1.47	ft
Critical Slope	0.023233	ft/ft
Velocity	4.64	ft/s
Velocity Head	0.33	ft
Specific Energy	2.20	ft
Froude Number	0.68	
Flow is subcritical.		



Appolo Fuels 807-0365 Diversion DD2-HF1
 Cross Section for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Channel Slope	1.00 %
Depth	1.86 ft
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	118.40 cfs



Howard Engineering & Geology, Inc.

P.O. Box 271
2550 W. Hwy. 72, Suite 1
Harlan, KY 40831

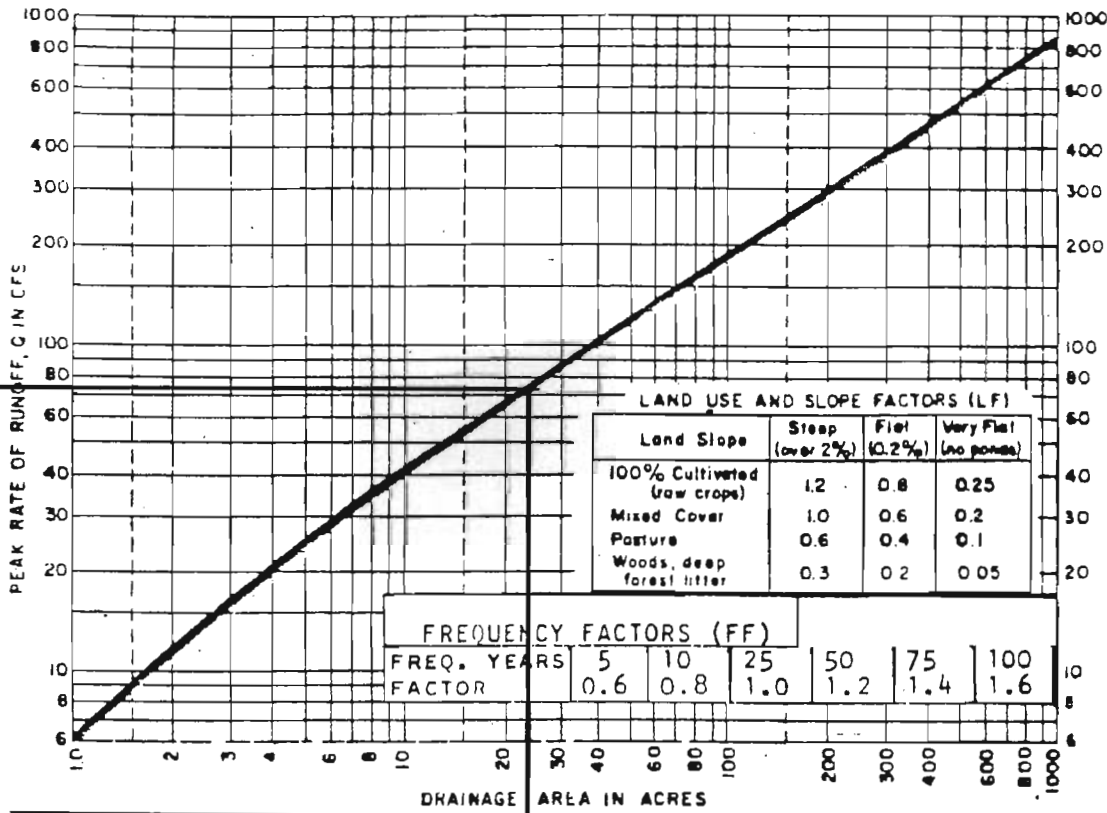
Company Name: Appolo Fuels, Inc.

Project: #807-0365

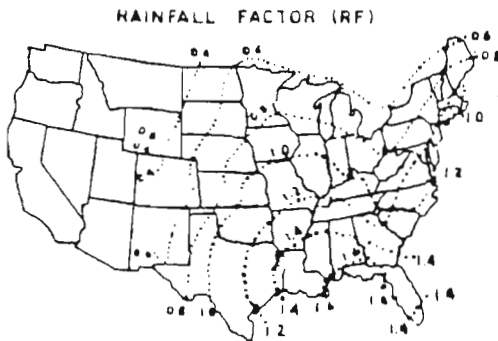
Diversion Ditch

DD2 - HF1

74.



23.82 AC.



FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 1.0 \times 1.6 \times 74$$

$$= 118.40$$

Timothy C. Howard



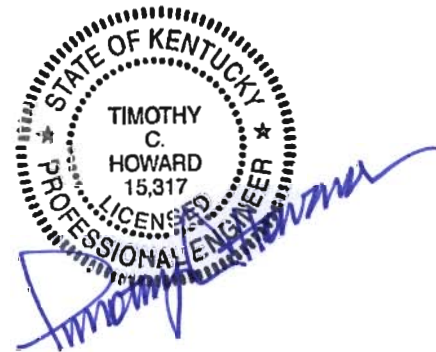
PEAK RUNOFF METHOD FOR
WATERSHEDS UNDER 1,000 ACRES.

Appolo Fuels 807-0365 Diversion DD3-HF1
Worksheet for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.040
Channel Slope	50.00 %
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	134.40 cfs

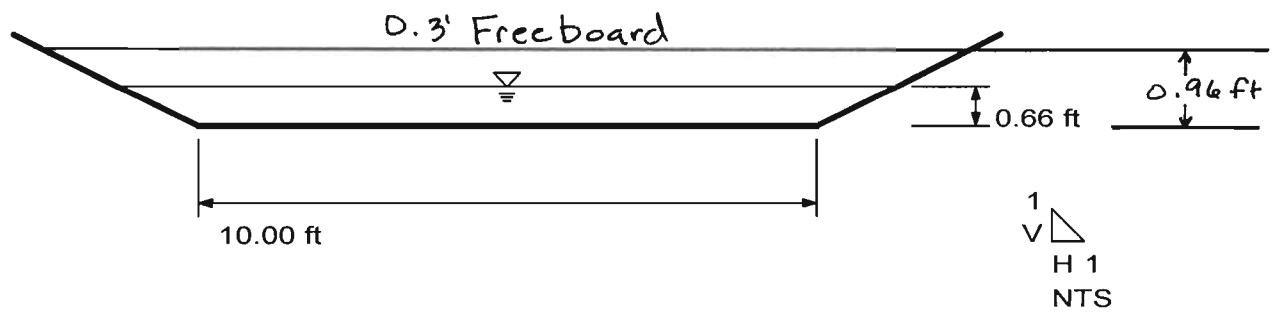
Results		
Depth	0.66	ft
Flow Area	7.41	ft ²
Wetted Perimeter	12.93	ft
Top Width	12.62	ft
Critical Depth	1.59	ft
Critical Slope	0.022795	ft/ft
Velocity	18.13	ft/s
Velocity Head	5.11	ft
Specific Energy	5.76	ft
Froude Number	4.17	
Flow is supercritical.		



Appolo Fuels 807-0365 Diversion DD3-HF1
 Cross Section for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

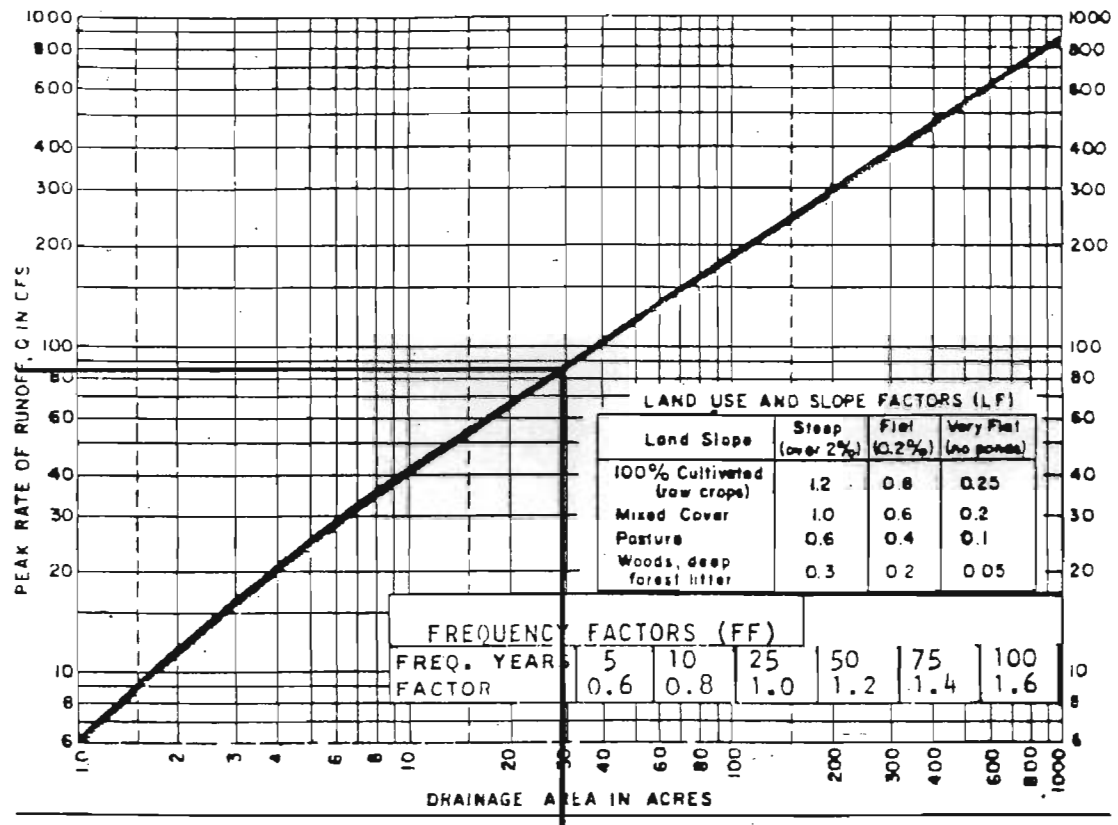
Section Data	
Mannings Coefficient	0.040
Channel Slope	50.00 %
Depth	0.66 ft
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	134.40 cfs



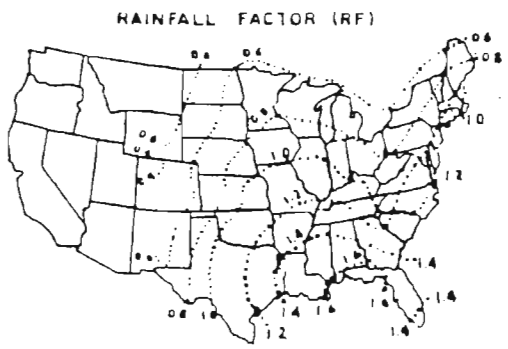
**Howard Engineering
& Geology, Inc.**
P.O. Box 271
2550 W. Hwy. 72, Suite 1
Harlan, KY 40831

Company Name: Appollo Fuels, Inc.
Project: #807-0365
Diversion Ditch
DD3 - HF1

84



29.46 ac

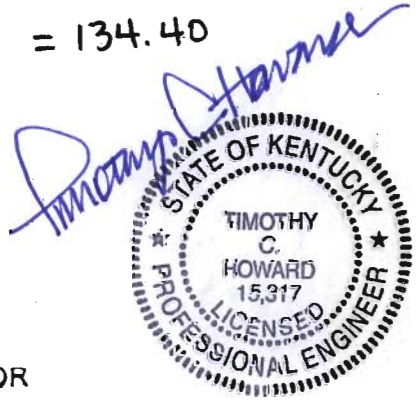


FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 1.0 \times 1.6 \times 84$$

$$= 134.40$$



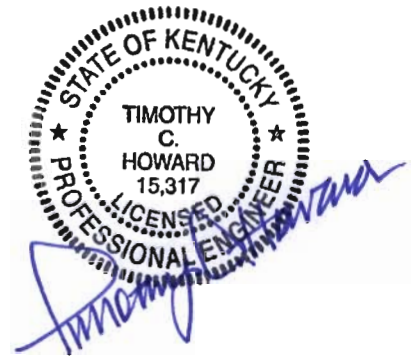
PEAK RUNOFF METHOD FOR
WATERSHEDS UNDER 1,000 ACRES

Appolo Fuels 807-0365 Diversion DD4-HF1
Worksheet for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.040
Channel Slope	50.00 %
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	116.80 cfs

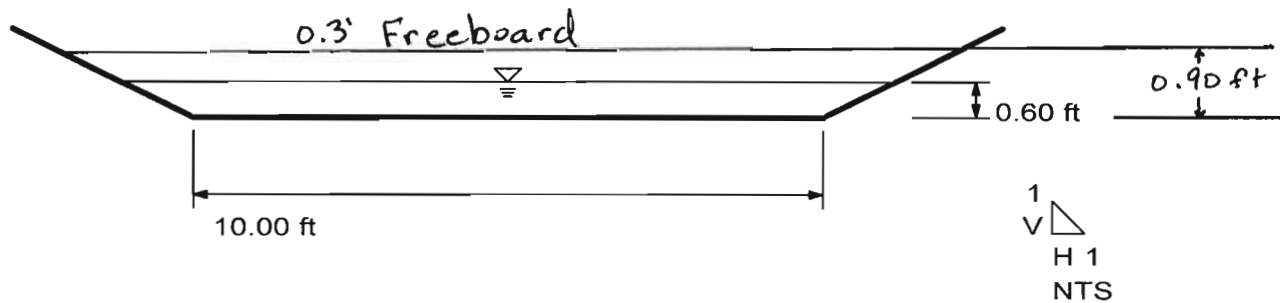
Results		
Depth	0.60	ft
Flow Area	6.77	ft ²
Wetted Perimeter	12.70	ft
Top Width	12.41	ft
Critical Depth	1.46	ft
Critical Slope	0.023280	ft/ft
Velocity	17.26	ft/s
Velocity Head	4.63	ft
Specific Energy	5.23	ft
Froude Number	4.12	
Flow is supercritical.		



Appolo Fuels 807-0365 Diversion DD4-HF1
 Cross Section for Trapezoidal Channel

Project Description	
Project File	c:\program files\flow master - haestead\fmw\0365ditc.fm2
Worksheet	Appolo Fuels 807-0365 HF #1 Diversions
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Channel Slope	50.00 %
Depth	0.60 ft
Left Side Slope	2.00 H : V
Right Side Slope	2.00 H : V
Bottom Width	10.00 ft
Discharge	116.80 cfs



Howard Engineering & Geology, Inc.

P.O. Box 271
2550 W. Hwy. 72, Suite 1
Harlan, KY 40831

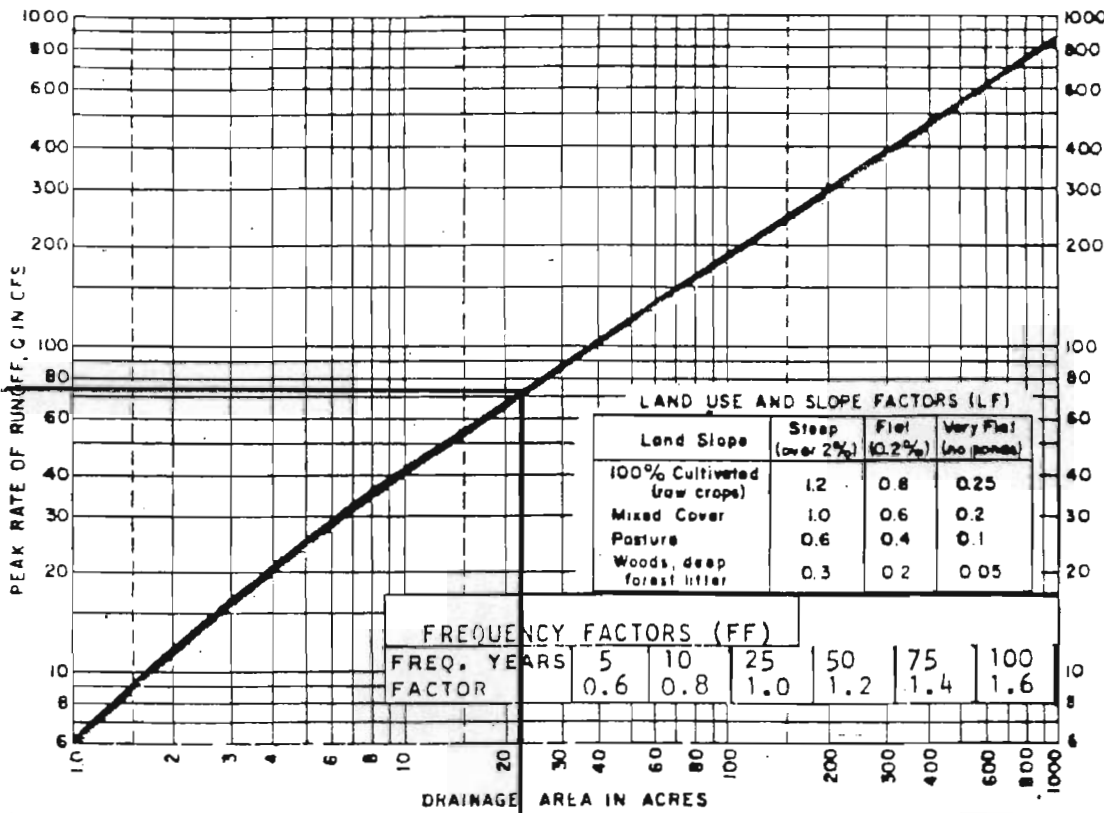
Company Name: Appolo Fuels, Inc.

Project: #807-0365

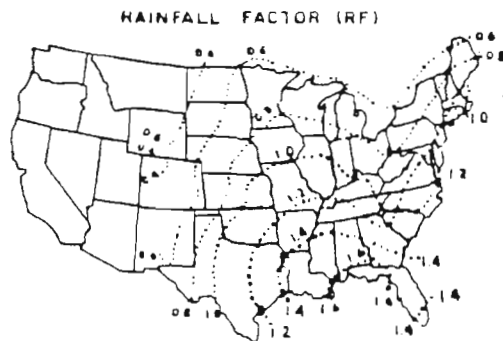
Diversion Ditch

DD4 - HF1

73



22.17 ac.

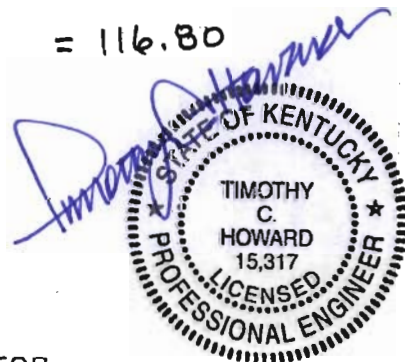


FORMULA:

$$Q_{\text{design}} = RF \times LF \times FF \times Q$$

$$= 1.0 \times 1.0 \times 1.6 \times 73$$

$$= 116.80$$



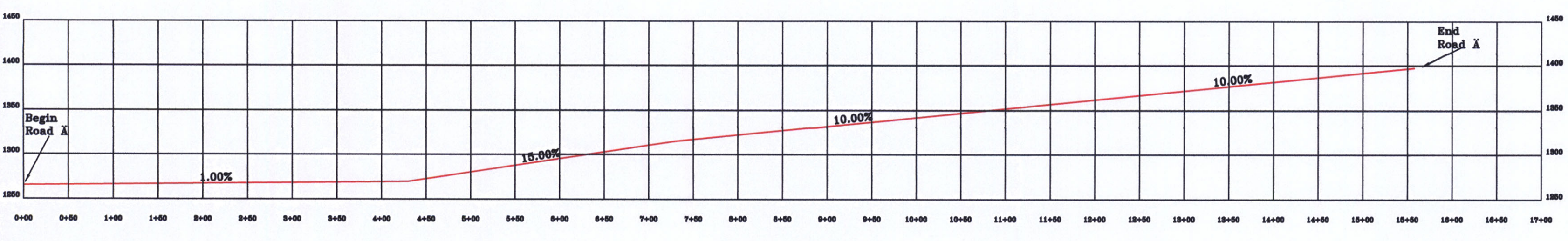
PEAK RUNOFF METHOD FOR
WATERSHEDS UNDER 1,000 ACRES

ATTACHMENT 33.1.A

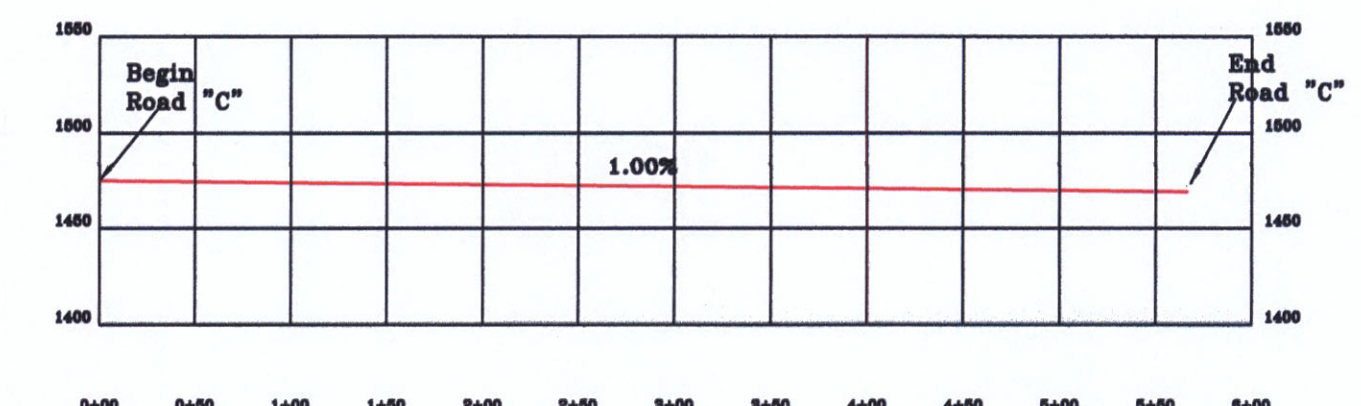
TRANSPORTATION PLAN

Access to and coal haulage from the proposed mining areas will be provided by nine (9) roads. The roads are designated as Roads "A", "B", "C", "D", "E", "F", "G", "H" and "I". Roads "A", "B", "C", "D", "E", "F", "G", "H" and "I" will be used to transport coal from the mining areas. Roads "A", "B", "C", "D", "G", "H" and "I" are existing with additional lengthening of Roads "A", "C", "D", "G", "H", and "I". The remaining roads are proposed and will be constructed per the designs included in this attachment.

The haul roads will be maintained by grading, surfacing with durable material, revegetating side slopes, cut and fill slopes, watering for dust control, and minor reconstruction if necessary. The roads are proposed to be permanent structures, used for the support and achievement of the post-mining landuse. Cross-sections and profiles included on the following pages.



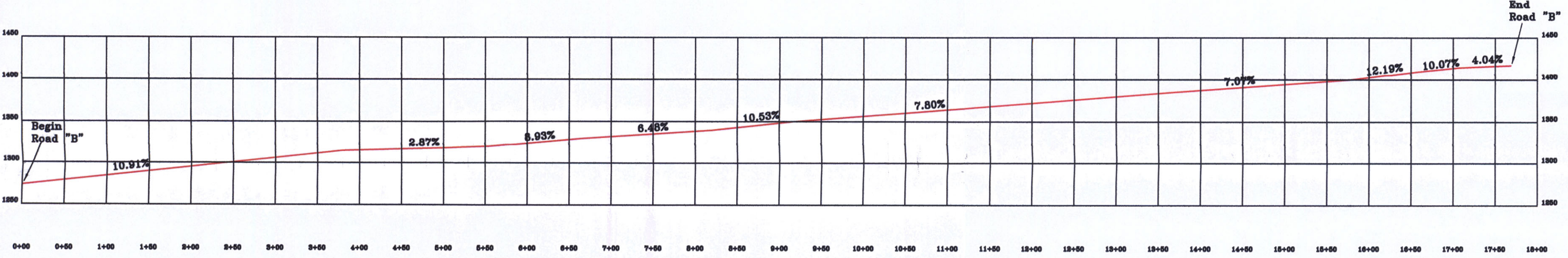
ROAD "A"



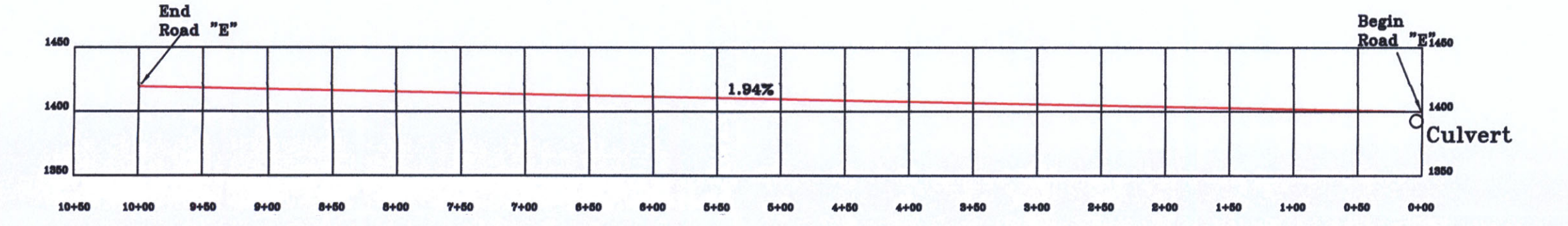
ROAD "C"



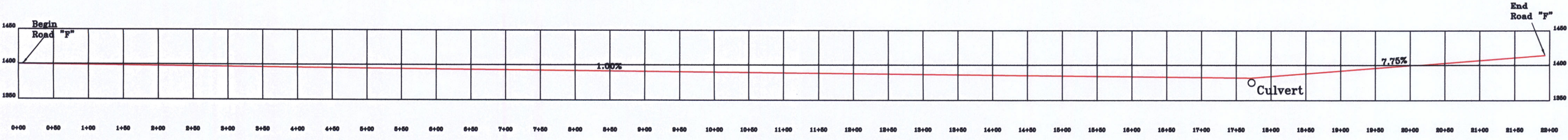
ROAD "D"



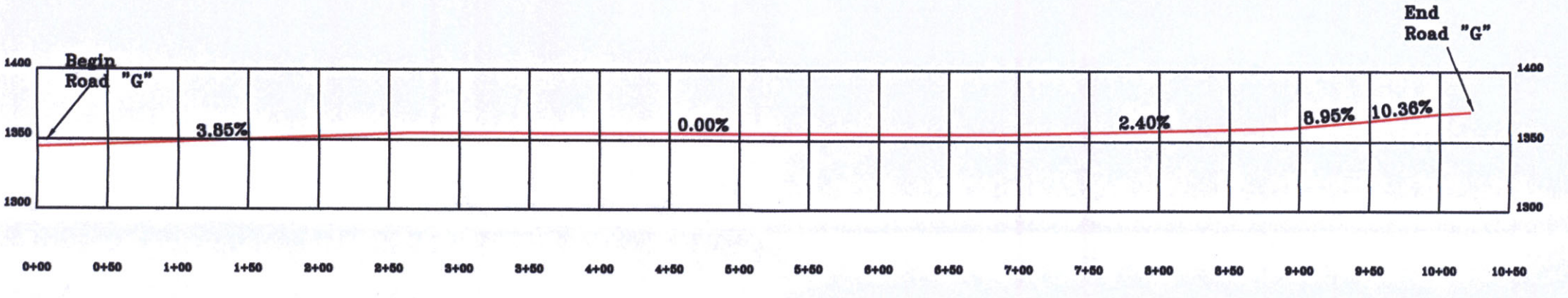
ROAD "B"



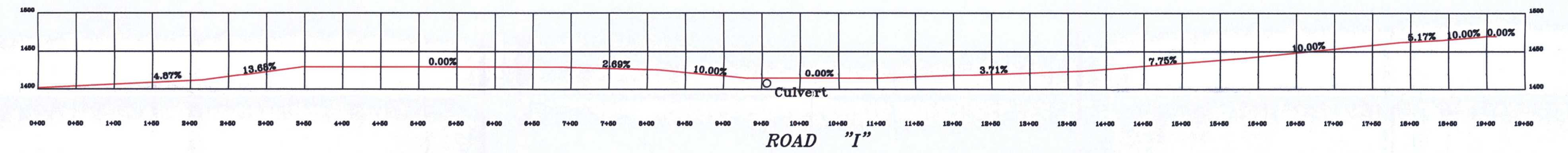
ROAD "E"



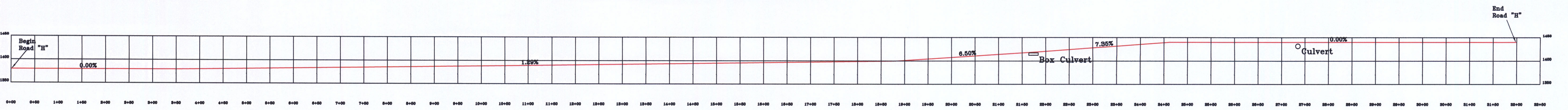
ROAD "F"



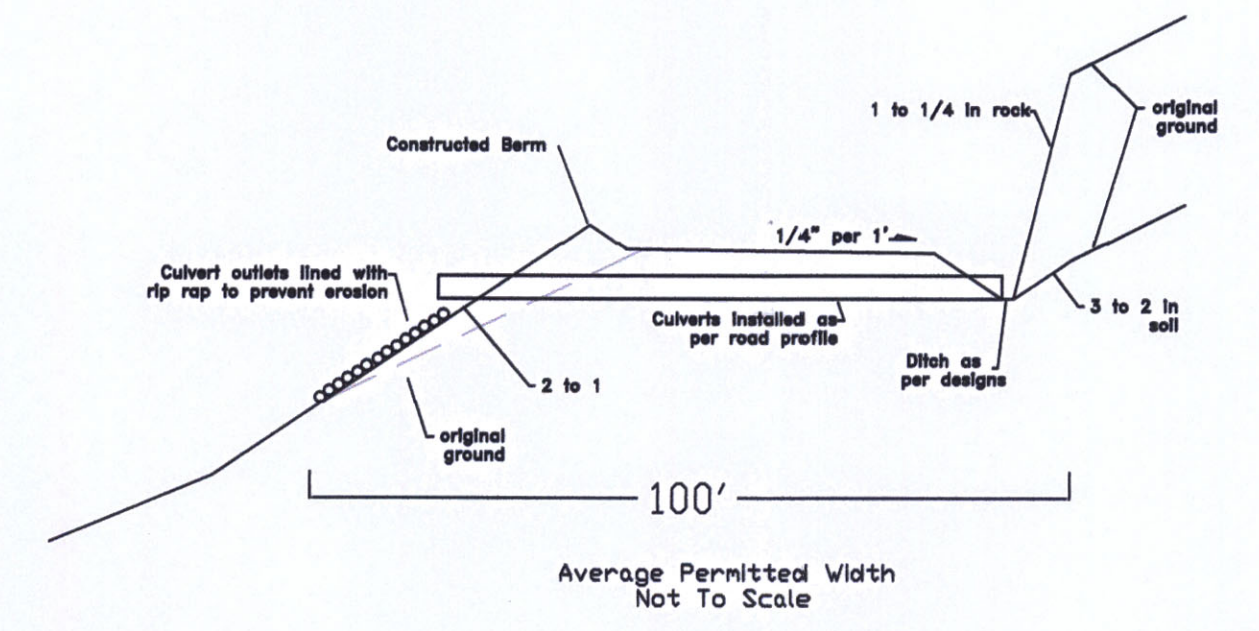
ROAD "G"



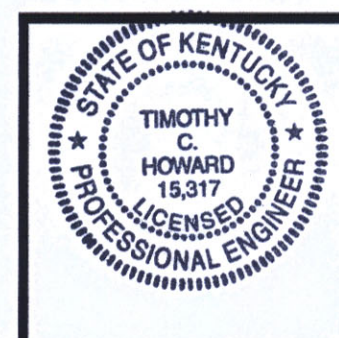
ROAD "I"



ROAD "H"



I, Timothy C. Howard, P.E. No. 15,317
 Date: 7/1/05
 hereby certify in accordance with 405 KAR 7:040, Section 10, that this document is correct as determined by accepted engineering practices and includes all information required of it by Chapter 350 and KAR Title 405.



Appolo Fuels, Inc.
 Permit No. 807-0365
 Profile Drawings of Roads "A", "B", "C", "D", "E", "F", "G", "H" and "I"
 Scale: 1" = 100' Page No. 1 of 1
 Prepared by: **Howard Engineering & Geology, Inc.**

ATTACHMENT 33.2.A

EXISTING ROADS

The several roads included in this application are existing and were constructed and used for coal haulage prior to January 18, 1983. These roads are designated as Roads "A", "B", "C", "D", "G", "H" and "I". Their location is detailed on the MRP map. These roads were used for coal mining and hauling purposes during mining of the coal seams in the area. Given the dates of the mining it is estimated that the road was constructed in the 1970's.

ATTACHMENT 33.4.A

Alternate Road Specifications

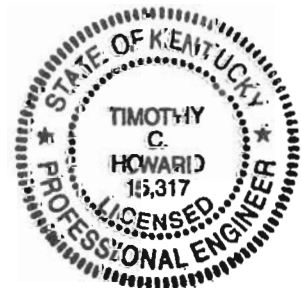
As part of this application we are proposing to use alternate specifications for Roads "A", "B", "C", "D", "E", "F", "G", "H" and "I". Roads "A", "B", "C", "D", "E", "F", "G", "H" and "I" will be utilized for coal haulage on this permit. Sections of Road "A", "C" and "H", all of "B", "D", "G" and "I" are existing and are located as shown on the attached MRP/ERI Map. Roads "E" and "F" will be constructed to their approximate design as included in this application. The culverts to be installed on the proposed construction section will provide adequate drainage as proposed. There is no danger to the public health or safety as a result of the size and number of culverts to be installed and the proposed grades. These roads will be protected from access by unauthorized traffic with the installation of gates and/or a guard patrol during active mining of the permit area.

These roads are safe for use and will not pose any danger to the public health or safety as designed. The extents of the proposed roads are detailed on the MRP/ERI Map provided in this application.

Sincerely,



Timothy C. Howard, P.E.
Howard Engineering & Geology, Inc.



ATTACHMENT 34.1.A

FUGITIVE DUST CONTROL PLAN

Fugitive dust will be controlled during surface mining activities by utilizing the following procedures as they become necessary:

- 1) Periodic watering of access and haul roads.
- 2) Prompt removal of coal, rock, soil and other dust forming debris from roads and frequent scraping and compaction of unpaved roads to stabilize the road surface.
- 3) Revegetating, mulching or otherwise stabilizing the surface or all areas adjoining roads that are sources of fugitive dust.
- 4) Restricting the travel of vehicles on other than established roads.
- 5) Minimizing the area of disturbance.
- 6) Prompt revegetation or other stabilization of disturbed land.

Air Quality Monitoring Stations are not proposed as a part of this application.

35. Subsidence Control

35.1 If this is an application which includes underground or auger mining, provide as "Attachment 35.1.A", the information required to demonstrate compliance with 405 KAR 8:040, Section 26.

See Attachment 35.1.A

35.2 Does the proposed method of operation include standard room and pillar mining? YES NO. If "YES", describe the thickness and engineering properties of clays and soft rock located immediately above and below the coal seam(s) to be mined. If none exists, briefly describe the stratum immediately above and below all coal seams to be mined with this method. Submit description and related information as "Attachment 35.2.A".

35.3 If this application is for a surface mine, indicate if any portion of the proposed permit area have been "undermined". YES NO. If "YES", provide a map showing the extent of the underground workings and describe the potential affects subsidence may have on structures such as dams, coal waste disposal areas, fills and other such structures. Submit this information as "Attachment 35.3.A".

36. Applicant/Authorized Agent Signature

36.1 The undersigned, being first duly sworn, states that he/she has read all the information provided in Form MPA-03, Technical Information for a Mining Permit, of this application and has found it to be true and correct. The undersigned further acknowledges that any information provided or omitted herein for the purpose of defrauding or misleading the Natural Resources and Environmental Protection Cabinet may result in criminal charges being instituted pursuant to applicable state laws.

Applicant Company Name Appolo Fuels, Inc.

Name of Applicant or Agent
Whose Signature Appears Below Gary Asher

Signature of Applicant or Agent* *Gary Asher*

Date of signature 5/23/08

Subscribed and sworn to before me by Gary Asher,

This the 23rd Day of May, 2008.

Notary Public *[Signature]*

My Commission Expires 2-13-10 State in which Commissioned Kentucky

***NOTE:** If signer is other than president or secretary of a corporation, attach a notarized copy of power of attorney, or resolution of board of directors which grants signer the legal authority to represent the applicant in this application. (Does not apply to a single proprietorship or partnership.)

ATTACHMENT 35.1.A

SUBSIDENCE CONTROL PLAN

The surface area overlying the auger mining areas included in this application has been delineated on the Mining and Reclamation Plan Map in this application. A "Subsidence Survey" of this area has been made to determine if there are any structures or renewable resources located on any of these surface areas. The results of this survey are as follows:

- 1) There are no dwellings, commercial or public buildings, nor other facilities such as pipelines, oil or gas wells, etc., located on the surface area overlying the proposed auger/highwall workings.
- 2) A reconnaissance was made of the area above the proposed auger workings. During this survey, it was determined that there were no aquifers located above the proposed the proposed auger workings that could be affected by subsidence
- 3) The reconnaissance did reveal that there are gas wells, gas lines and power transmission line support structures located within the proposed surface disturbance area. The power transmission support structures will be relocated along with the gas lines. No mining protection areas have been designed around the gas wells.

As a result of our survey, there are no structures or renewable resources which could be affected by the mining activities proposed in this application.

**MINING AND RECLAMATION PLAN
ENVIRONMENTAL RESOURCES MAP**

COMPANY: APPOLO FUELS, INC. ADDRESS: P.O. BOX 1727 MIDDLEBORO, KY 40985
APPLICATION NUMBER: 807-0988 TYPE OF APPLICATION: ORIGINAL
LATITUDE: 37°04'44"N LONGITUDE: 83°52'14"W MAP SCALE: 1" = 500'
COUNTY: BELL COUNTY SURFACE MONITORING POINT ELEVATION: 2545.83
NEAREST NAMED STREAM: BACK CREEK OF CLEAR FORK
NEAREST PUBLIC ROAD INTERSECTION: 0.65 MILES NORTHEAST OF KY 74'S JUNCTION WITH KY 605

MAP LEGEND

- OCUPIED DWELLING
- EXISTING STRUCTURE
- NON-EXISTING STRUCTURE
- WELLS (Type Indicated)
- SURFACE WATER MONITORING POINT
- SURFACE WATER MONITORING POINT
- PROPOSED SURFACE PERMIT
- PROPOSED UNDERGROUND PERMIT
- EXISTING SURFACE PERMIT
- EXISTING UNDERGROUND PERMIT
- COAL CROP LINE
- POWER LINE
- EXISTING POWER LINE STRUCTURES

ENVIRONMENTAL RESOURCES LEGEND

- GEOLOGICAL SAMPLE SITE
- GROUNDWATER USER
- SURFACE WATER USER
- SURFACE OR GROUND WATER DISCHARGE
- STRESS MONITORING POINT
- PREVIOUSLY PERMITTED
- ACTIVELY ABANDONED MINE PERMIT
- GROUNDWATER FLOW
- WATERSHED BOUNDARY
- WATERSHED LABEL ACREAGE
- EXISTING DISTURBANCE
- ALT/TOPSOIL STORAGE AREA

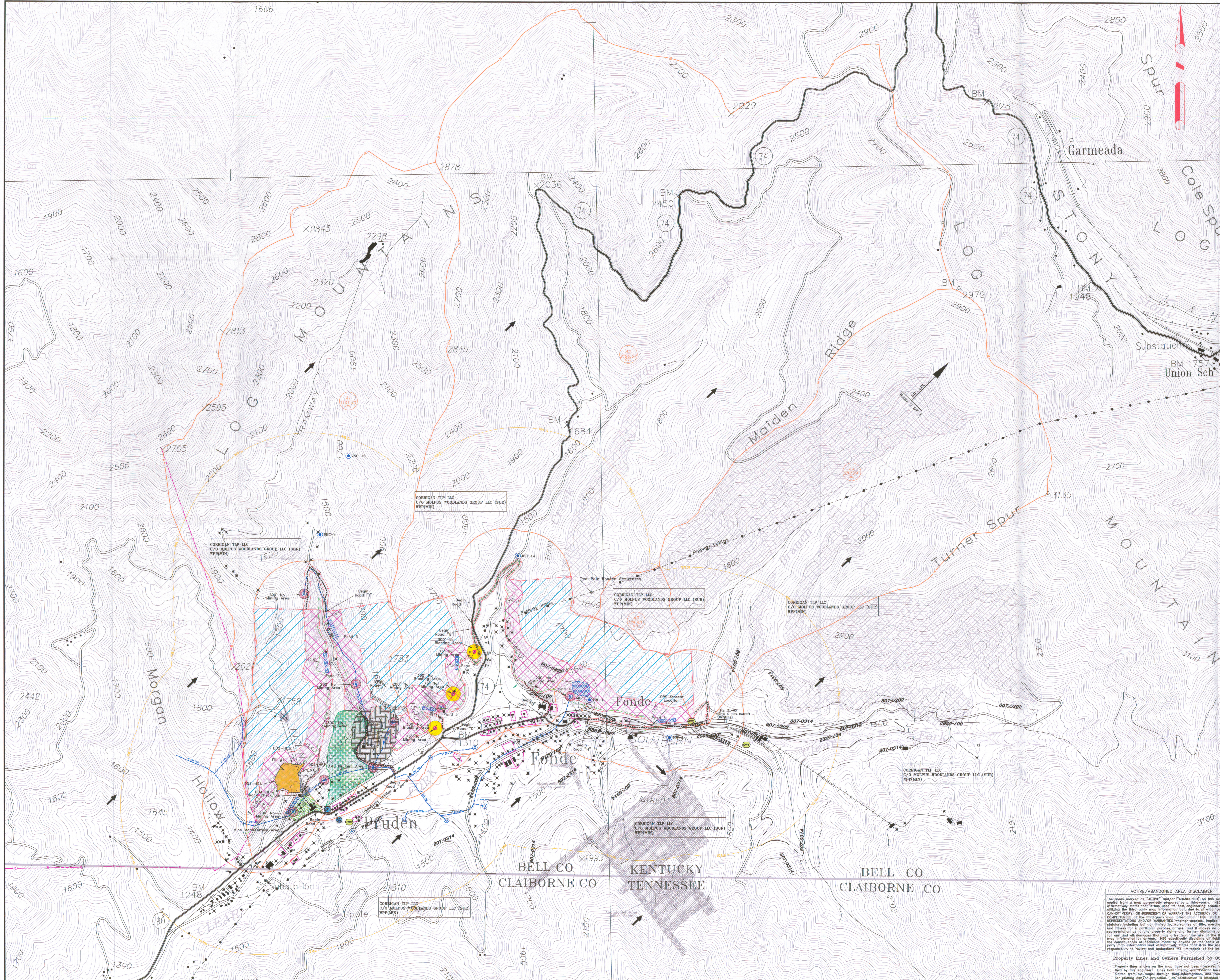
MINING & RECLAMATION PLAN LEGEND

- BERM
- BELT CONVEYOR
- CONTROLLED DRAINAGE
- CULVERTS
- DISSEMINATION DITCH
- EXPANSIVE STORAGE AREA
- BLASTING MAT AREAS
- MINERAL LEASE LINE
- PROPERTY LINE
- ROCK CHECK
- SILT FENCE
- SLOPE IN DEGREES
- MINE ADITS

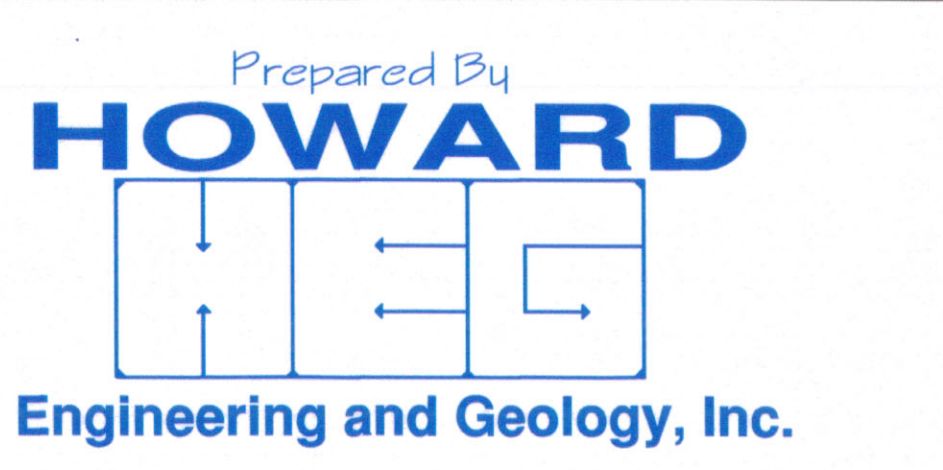
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AREAS AND ACREAGES

MINING AREA	SEAM / ELEV.	EXISTING ACREAGE	PROPOSED ACREAGE	TOTAL
	JELICO 1390/1410'	-	150.45	150.45
	HOLLOW FILL #1	-	6.54	6.54
SILT STRUCTURES				
	BUG-OUT (1)	-	1.31	1.31
	BUG-OUT (2 - 7)	-	0.00*	0.00*
EMBANKMENT				
	A	-	1.73	1.73
	B	-	4.06	4.06
	D	-	0.99	0.99
	G	-	2.36	2.36
	H	-	6.52	6.52
	I	-	4.39	4.39
DITCHES				
	PROCESSING FACILITY	-	-	-
	COAL STOCKPILES/LOADING AREA	-	-	-
	MINE MANAGEMENT AREAS	3.58	3.58	3.58
SURFACE AREA OVERLYING PROPOSED UNDERGROUND WORKINGS				
	A	-	263.50	263.50
TOTAL SURFACE AREA	-	-	193.24	193.24
TOTAL AUGER AREA	-	-	263.50	263.50
GRAND TOTAL	-	-	456.74	456.74
* - ACREAGE INCLUDED IN MINING AREA				



APPOLO FUELS, INC.
11/14/20
Prepared By



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