



Alabama Department of Environmental Management  
adem.alabama.gov

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August 26, 2019

William Morris  
Vice-President of Operations  
Riverside Refractories, Inc.  
201 Truss Ferry Road  
Pell City, AL 35128

RE: Draft Permit  
Wadsworth Pit  
NPDES Permit No. AL0078727  
St Clair County (115)

Dear Mr. Morris:

Transmitted herein is a draft of the above referenced permit. Please review the enclosed draft permit carefully. If previously permitted, the draft may contain additions/revisions to the language in your current permit. Please submit any comments on the draft permit to the Department within 30 days from the date of receipt of this letter.

Since the Department has made a tentative decision to reissue the above referenced permit, ADEM Admin. Code r. 335-6-6-.21 requires a public notice of the draft permit followed by a period of at least 30 days for public comment before the permit can be issued. The United States Environmental Protection Agency will also receive the draft permit for review during the 30-day public comment period.

Any mining, processing, construction, land disturbance, or other regulated activity proposed to be authorized by this draft permit is prohibited prior to the effective date of the formal permit. Any mining or processing activity within the drainage basin associated with each permitted outfall which is conducted prior to Departmental receipt of certification from a professional engineer licensed to practice in the State of Alabama, that the Pollution Abatement/Prevention Plan was implemented according to the design plan, or notification from the Alabama Surface Mining Commission that the sediment control structures have been certified, is prohibited.

The Department utilizes a web-based electronic environmental (E2) reporting system for electronic DMR submittal. Please read Part I.D of the permit carefully and visit <https://e2.adem.alabama.gov/npdes>.

Should you have any questions concerning this matter, please contact Ange Boatwright by email at [maboatwright@adem.alabama.gov](mailto:maboatwright@adem.alabama.gov) or by phone at (334) 274-4208.

Sincerely,

Catherine A. McNeill, Chief  
Mining and Natural Resource Section  
Stormwater Management Branch  
Water Division

CAM/mab File: DPER/33332

Enclosure

cc: Ange Boatwright, ADEM  
Environmental Protection Agency Region IV  
Alabama Department of Conservation and Natural Resources  
U.S. Fish and Wildlife Service  
Alabama Historical Commission  
Advisory Council on Historic Preservation  
Alabama Department of Labor





# NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM INDIVIDUAL PERMIT

PERMITTEE: Riverside Refractories, Inc.  
201 Truss Ferry Road  
Pell City, AL 35128

FACILITY LOCATION: Wadsworth Pit  
Easonville Road  
Cropwell, AL 35054  
St Clair County  
T17S, R3E, S27

PERMIT NUMBER: AL0078727

DSN & RECEIVING STREAM: 001-1 Unnamed Tributary to Coosa River

*In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1388 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-17, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.*

ISSUANCE DATE:

EFFECTIVE DATE:

EXPIRATION DATE:

**\*\* DRAFT \*\***

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Alabama Department of Environmental Management

**MINING AND NATURAL RESOURCE SECTION  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT**

**TABLE OF CONTENTS**

<b>PART I</b>	<b>DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS</b>	
A.	DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS.....	4
B.	REQUIREMENTS TO ACTIVATE A PROPOSED MINING OUTFALL.....	4
C.	DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS .....	4
	1. Sampling Schedule and Frequency.....	4
	2. Measurement Frequency .....	5
	3. Monitoring Schedule.....	5
	4. Sampling Location.....	6
	5. Representative Sampling .....	6
	6. Test Procedures .....	6
	7. Recording of Results .....	7
	8. Routine Inspection by Permittee.....	7
	9. Records Retention and Production.....	8
	10. Monitoring Equipment and Instrumentation.....	8
D.	DISCHARGE REPORTING REQUIREMENTS.....	8
	1. Requirements for Reporting of Monitoring.....	8
	2. Noncompliance Notification .....	10
	1. Reduction, Suspension, or Termination of Monitoring and/or Reporting.....	11
E.	OTHER REPORTING AND NOTIFICATION REQUIREMENTS.....	12
	1. Anticipated Noncompliance.....	12
	2. Termination of Discharge.....	12
	3. Updating Information .....	12
	4. Duty to Provide Information.....	13
F.	SCHEDULE OF COMPLIANCE.....	13
<b>PART II</b>	<b>OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES</b>	
A.	OPERATIONAL AND MANAGEMENT REQUIREMENTS.....	14
	1. Facilities Operation and Management .....	14
	2. Pollution Abatement and/or Prevention Plan .....	14
	3. Best Management Practices (BMPs).....	14
	4. Biocide Additives.....	15
	5. Facility Identification.....	16
	6. Removed Substances .....	16
	7. Loss or Failure of Treatment Facilities .....	16
	8. Duty to Mitigate.....	16
B.	BYPASS AND UPSET.....	16
	1. Bypass.....	16
	2. Upset.....	17
C.	PERMIT CONDITIONS AND RESTRICTIONS.....	18
	1. Prohibition against Discharge from Facilities Not Certified .....	18
	2. Permit Modification, Suspension, Termination, and Revocation .....	19
	3. Automatic Expiration of Permits for New or Increased Discharges.....	19
	4. Transfer of Permit.....	20
	5. Groundwater .....	20

6. Property and Other Rights.....	20
D. RESPONSIBILITIES .....	20
1. Duty to Comply .....	20
2. Change in Discharge .....	21
3. Compliance with Toxic or Other Pollutant Effluent Standard or Prohibition.....	21
4. Compliance with Water Quality Standards and Other Provisions.....	22
5. Compliance with Statutes and Rules .....	22
6. Right of Entry and Inspection.....	22
7. Duty to Reapply or Notify of Intent to Cease Discharge.....	23

**PART III ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS**

A. CIVIL AND CRIMINAL LIABILITY.....	24
1. Tampering.....	24
2. False Statements .....	24
3. Permit Enforcement.....	24
4. Relief From Liability.....	24
B. OIL AND HAZARDOUS SUBSTANCE LIABILITY.....	24
C. AVAILABILITY OF REPORTS.....	24
D. DEFINITIONS .....	24
E. SEVERABILITY.....	29
F. PROHIBITIONS AND ACTIVITIES NOT AUTHORIZED.....	29
G. DISCHARGES TO IMPAIRED WATERS.....	29

## PART I DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS

### A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this Permit and lasting through the expiration date of this Permit, the Permittee is authorized to discharge from each point source identified on Page 1 of this Permit and described more fully in the Permittee's application, if the outfalls have been constructed and certified. Discharges of alkaline<sup>1</sup> mine drainage shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations			Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Sample Type	Measurement Frequency <sup>2</sup>
pH 00400	6.0 s.u.	-----	8.5 s.u.	Grab	2/Month
Solids, Total Suspended 00530	-----	-----	35.0 mg/L	Grab	2/Month
Flow, In Conduit or Thru Treatment Plant <sup>3</sup> 50050	-----	Report MGD	Report MGD	Instantaneous	2/Month

### B. REQUIREMENTS TO ACTIVATE A PROPOSED MINING OUTFALL

1. Discharge from any point source identified on Page 1 of this Permit which is a proposed outfall is not authorized by this Permit until the outfall has been constructed and certification received by the Department from a professional engineer, registered in the State of Alabama, certifying that such facility has been constructed according to good engineering practices and in accordance with the Pollution Abatement and/or Prevention (PAP) Plan.
2. Certification required by Part I.B.1. shall be submitted on a completed ADEM Form 432. The certification shall include the latitude and longitude of the constructed and certified outfall.
3. Discharge monitoring and Discharge Monitoring Report (DMR) reporting requirements described in Part I.C. of this Permit do not apply to point sources that have not been constructed and certified.
4. Upon submittal of the certification required by Part I.B.1. to the Department, all monitoring and DMR submittal requirements shall apply to the constructed and certified outfall.

### C. DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS

#### 1. Sampling Schedule and Frequency

- a. The Permittee shall collect at least one grab sample of the discharge to surface waters from each constructed and certified point source identified on Page 1 of this Permit and described more fully in the Permittee's application twice per month at a rate of at least every other week if a discharge occurs at any time during the two week period, but need

<sup>1</sup> See Part III.D for the definition of alkaline mine drainage.

<sup>2</sup> See Part I.C.2. for further measurement frequency requirements.

<sup>3</sup> Flow must be determined at the time of sample collection by direct measurement, calculation, or other method acceptable to the Department.

not collect more than two samples per calendar month. Each sample collected shall be analyzed for each parameter specified in Part I.A. of this Permit.

- b. If the final effluent is pumped in order to discharge (e.g. from incised ponds, old highwall cuts, old pit areas or depressions, etc.), the Permittee shall collect at least one grab sample of the discharge from each point source identified on Page 1 of this Permit and described more fully in the Permittee's application each quarterly (three month) monitoring period if a discharge occurs at any time during the quarterly monitoring period which results from direct pumped drainage. Each sample collected shall be analyzed for each parameter specified in Part I.A. of this Permit.
- c. The Permittee may increase the frequency of sampling listed in Parts I.C.1.a and I.C.1.b; however, all sampling results must be reported to the Department and included in any calculated results submitted to the Department in accordance with this Permit.

## **2. Measurement Frequency**

Measurement frequency requirements found in Part I.A. shall mean:

- a. A measurement frequency of one day per week shall mean sample collection on any day of discharge which occurs every calendar week.
- b. A measurement frequency of two days per month shall mean sample collection on any day of discharge which occurs every other week, but need not exceed two sample days per month.
- c. A measurement frequency of one day per month shall mean sample collection on any day of discharge which occurs during each calendar month.
- d. A measurement frequency of one day per quarter shall mean sample collection on any day of discharge which occurs during each calendar quarter.
- e. A measurement frequency of one day per six months shall mean sample collection on any day of discharge which occurs during the period of January through June and during the period of July through December.
- f. A measurement frequency of one day per year shall mean sample collection on any day of discharge which occurs during each calendar year.

## **3. Monitoring Schedule**

The Permittee shall conduct the monitoring required by Part I.A. in accordance with the following schedule:

- a. **MONITORING REQUIRED MORE FREQUENTLY THAN MONTHLY AND MONTHLY** shall be conducted during the first full month following the effective date of coverage under this Permit and every month thereafter. More frequently than monthly and monthly monitoring may be done anytime during the month, unless restricted elsewhere in this Permit, but the results should be reported on the last Discharge Monitoring Report (DMR) due for the quarter (i.e., with the March, June, September, and December DMRs).
- b. **QUARTERLY MONITORING** shall be conducted at least once during each calendar quarter. Calendar quarters are the periods of January through March, April through June, July through September, and October through December. The Permittee shall conduct the quarterly monitoring during the first complete calendar quarter following the effective

date of this Permit and is then required to monitor once during each quarter thereafter. Quarterly monitoring may be done anytime during the quarter, unless restricted elsewhere in this Permit, but the results should be reported on the last DMR due for the quarter (i.e., with the March, June, September, and December DMRs).

- c. SEMIANNUAL MONITORING shall be conducted at least once during the period of January through June and at least once during the period of July through December. The Permittee shall conduct the semiannual monitoring during the first complete semiannual calendar period following the effective date of this Permit and is then required to monitor once during each semiannual period thereafter. Semiannual monitoring may be done anytime during the semiannual period, unless restricted elsewhere in this Permit, but it should be reported on the last DMR due for the month of the semiannual period (i.e., with the June and December DMRs).
- d. ANNUAL MONITORING shall be conducted at least once during the period of January through December. The Permittee shall conduct the annual monitoring during the first complete calendar annual period following the effective date of this Permit and is then required to monitor once during each annual period thereafter. Annual monitoring may be done anytime during the year, unless restricted elsewhere in this Permit, but it should be reported on the December DMR.

**4. Sampling Location**

Unless restricted elsewhere in this Permit, samples collected to comply with the monitoring requirements specified in Part I.A. shall be collected at the nearest accessible location just prior to discharge and after final treatment, or at an alternate location approved in writing by the Department.

**5. Representative Sampling**

Sample collection and measurement actions taken as required herein shall be representative of the volume and nature of the monitored discharge and shall be in accordance with the provisions of this Permit.

**6. Test Procedures**

For the purpose of reporting and compliance, Permittees shall use one of the following procedures:

- a. For parameters with an EPA established Minimum Level (ML), report the measured value if the analytical result is at or above the ML and report "0" for values below the ML. Test procedures for the analysis of pollutants shall conform to 40 CFR Part 136, guidelines published pursuant to Section 304(h) of the FWPCA, 33 U.S.C. Section 1314(h), and ADEM Standard Operating Procedures. If more than one method for analysis of a substance is approved for use, a method having a minimum level lower than the permit limit shall be used. If the minimum level of all methods is higher than the permit limit, the method having the lowest minimum level shall be used and a report of less than the minimum level shall be reported as zero and will constitute compliance, however should EPA approve a method with a lower minimum level during the term of this Permit the Permittee shall use the newly approved method.
- b. For pollutant parameters without an established ML, an interim ML may be utilized. The interim ML shall be calculated as 3.18 times the Method Detection Level (MDL) calculated pursuant to 40 CFR Part 136, Appendix B.

Permittees may develop an effluent matrix-specific ML, where an effluent matrix prevents attainment of the established ML. However, a matrix specific ML shall be based

upon proper laboratory method and technique. Matrix-specific MLs must be approved by the Department, and may be developed by the Permittee during permit issuance, reissuance, modification, or during compliance schedule.

In either case the measured value should be reported if the analytical result is at or above the ML and "0" reported for values below the ML.

- c. For parameters without an EPA established ML, interim ML, or matrix-specific ML, a report of less than the detection limit shall constitute compliance if the detection limit of all analytical methods is higher than the permit limit using the most sensitive EPA approved method. For the purpose of calculating a monthly average, "0" shall be used for values reported less than the detection limit.

The Minimum Level utilized for procedures identified in Parts I.C.6.a. and b. shall be reported on the Permittee's DMR. When an EPA approved test procedure for analysis of a pollutant does not exist, the Director shall approve the procedure to be used.

#### **7. Recording of Results**

For each measurement or sample taken pursuant to the requirements of this Permit, the Permittee shall record the following information:

- a. The facility name and location, point source number, date, time, and exact place of sampling or measurements;
- b. The name(s) of person(s) who obtained the samples or measurements;
- c. The dates and times the analyses were performed;
- d. The name(s) of the person(s) who performed the analyses;
- e. The analytical techniques or methods used including source of method and method number; and
- f. The results of all required analyses.

#### **8. Routine Inspection by Permittee**

- a. The Permittee shall inspect all point sources identified on Page 1 of this Permit and described more fully in the Permittee's application and all treatment or control facilities or systems used by the Permittee to achieve compliance with the terms and conditions of this Permit at least as often as the applicable sampling frequency specified in Part I.C.1 of this Permit.
- b. If required by the Director, the Permittee shall maintain a written log for each point source identified on Page 1 of this Permit and described more fully in the Permittee's application in which the Permittee shall record the following information:
  - (1) The date and time the point source and any associated treatment or control facilities or systems were inspected by the Permittee;
  - (2) Whether there was a discharge from the point source at the time of inspection by the Permittee;
  - (3) Whether a sample of the discharge from the point source was collected at the time of inspection by the Permittee;



- (4) Whether all associated treatment or control facilities or systems appeared to be in good working order and operating as efficiently as possible, and if not, a description of the problems or deficiencies; and
- (5) The name and signature of the person performing the inspection of the point source and associated treatment or control facilities or systems.

**9. Records Retention and Production**

- a. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Permit, and records of all data used to complete the above reports or the application for this Permit, for a period of at least three (3) years from the date of the sample collection, measurement, report, or application. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA, AEMA, and/or the FWPCA, is ongoing which involves any of the above records, the records shall be kept until the litigation is resolved. Upon the written request of the Director, the Permittee shall provide the Director with a copy of any record required to be retained by this paragraph. Copies of these records should not be submitted unless requested.
- b. All records required to be kept for a period of three (3) years shall be kept at the permitted facility or an alternate location approved by the Department in writing and shall be available for inspection.

**10. Monitoring Equipment and Instrumentation**

All equipment and instrumentation used to determine compliance with the requirements of this Permit shall be installed, maintained, and calibrated in accordance with the manufacturer's instructions or, in the absence of manufacturer's instructions, in accordance with accepted practices. The Permittee shall develop and maintain quality assurance procedures to ensure proper operation and maintenance of all equipment and instrumentation. The quality assurance procedures shall include the proper use, maintenance, and installation, when appropriate, of monitoring equipment at the plant site.

**D. DISCHARGE REPORTING REQUIREMENTS**

**1. Requirements for Reporting of Monitoring**

- a. Monitoring results obtained during the previous three (3) months shall be summarized for each month on a Discharge Monitoring Report (DMR) Form approved by the Department, and submitted to the Department so that it is received by the Director no later than the 28<sup>th</sup> day of the month following the quarterly reporting period (i.e., on the 28<sup>th</sup> day of January, April, July, and October of each year).
- b. The Department utilizes a web-based electronic environmental (E2) reporting system for submittal of DMRs. Except as allowed by Part I.D.1.c. or d., the Permittee shall submit all DMRs required by Part I.D.1.a. by utilizing the E2 reporting system. The E2 reporting system Permittee Participation Package may be downloaded online at <https://e2.adem.alabama.gov/npdes>.

- c. If the electronic environmental (E2) reporting system is down (i.e. electronic submittal of DMR data is unable to be completed due to technical problems originating with the Department's system; this could include entry/submittal issues with an entire set of DMRs or individual parameters), permittees are not relieved of their obligation to submit DMR data to the Department by the required submittal date. However, if the E2 system is down on the 28th day of the month or is down for an extended period of time as determined by the Department when a DMR is required to be submitted, the facility may submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting date. Within five calendar days of the E2 system resuming operation, the Permittee shall enter the data into the E2 reporting system unless an alternate timeframe is approved by the Department. An attachment should be included with the E2 DMR submittal verifying the original submittal date (date of the fax, copy of dated e-mail, or hand-delivery stamped date).
- d. The permittee may submit a request to the Department for a temporary electronic reporting waiver for DMR submittals. The waiver request should include the permit number; permittee name; facility/site name; facility address; name, address, and contact information for the responsible official or duly authorized representative; a detailed statement regarding the basis for requesting such a waiver; and the duration for which the waiver is requested. Approved electronic reporting waivers are not transferrable. Permittees with an approved electronic reporting waiver for DMRs may submit hard copy DMRs for the period that the approved electronic reporting waiver request is effective. The Permittee shall submit the Department-approved DMR forms to the address listed in Part I.D.1.j.
- e. If the Permittee, using approved analytical methods as specified in Part I.C.6., monitors any discharge from a point source identified on Page 1 of this Permit and describe more fully in the Permittee's application more frequently than required by this Permit; the results of such monitoring shall be included in the calculation and reporting of values on the DMR Form, and the increased frequency shall be indicated on the DMR Form.
- f. In the event no discharge from a point source identified on Page 1 of this Permit and described more fully in the Permittee's application occurs during a monitoring period, the Permittee shall report "No Discharge" for such period on the appropriate DMR Form.
- g. The Permittee shall report "No Discharge During Quarterly Monitoring Period" on the appropriate DMR Form for each point source receiving pumped discharges pursuant to Part I.C.1.b. provided that no discharge has occurred at any time during the entire quarterly (three month) monitoring period.
- h. Each DMR Form submitted by the Permittee to the Department in accordance with Part I.D.1. must be legible and bear an original signature or electronic signature. Photo and electronic copies of the signature are not acceptable and shall not satisfy the reporting requirements of this Permit.
- i. All reports and forms required to be submitted by this Permit, the AWPCA, and the Department's rules and regulations, shall be signed by a "responsible official" of the Permittee as defined in ADEM Admin. Code r. 335-6-6-.09 or a "duly authorized representative" of such official as defined in ADEM Admin. Code r. 335-6-6-.09 and shall bear the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who

manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- j. All DMRs, reports, and forms required to be submitted by this Permit, the AWPCA and the Department's rules and regulations, shall be addressed to:

Alabama Department of Environmental Management  
Water Division, Mining and Natural Resource Section  
Post Office Box 301463  
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management  
Water Division, Mining and Natural Resource Section  
1400 Coliseum Boulevard  
Montgomery, Alabama 36110-2059

- k. Unless authorized in writing by the Department, approved reporting forms required by this Permit or the Department are not to be altered, and if copied or reproduced, must be consistent in format and identical in content to the ADEM approved form. Unauthorized alteration, falsification, or use of incorrectly reproduced forms constitutes noncompliance with the requirements of this Permit and may significantly delay processing of any request, result in denial of the request, result in permit termination, revocation, suspension, modification, or denial of a permit renewal application, or result in other enforcement action.
- l. If this Permit is a reissuance, then the Permittee shall continue to submit DMRs in accordance with the requirements of their previous permit until such time as DMRs are due as discussed in Part I.D.1.

## 2. Noncompliance Notification

- a. The Permittee must notify the Department if, for any reason, the Permittee's discharge:
- (1) Potentially threatens human health or welfare;
  - (2) Potentially threatens fish or aquatic life;
  - (3) Causes an in-stream water quality criterion to be exceeded;
  - (4) Does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. §1317(a);
  - (5) Contains a quantity of a hazardous substance which has been determined may be harmful to the public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. §1321(b)(4); or
  - (6) Exceeds any discharge limitation for an effluent parameter as a result of an unanticipated bypass or upset.

The Permittee shall orally or electronically report any of the above occurrences, describing the circumstances and potential effects of such discharge to the Director within 24-hours after the Permittee becomes aware of the occurrence of such discharge. In addition to the oral or electronic report, the Permittee shall submit to the Director a written report as provided in Part I.D.2.c., no later than five (5) days after becoming aware of the occurrence of such discharge.

- b. If for any reason, the Permittee's discharge does not comply with any limitation of this Permit, the Permittee shall submit a written report to the Director as provided in Part I.D.2.c. This report must be submitted with the next Discharge Monitoring Report required to be submitted by Part I.D.1. of this Permit after becoming aware of the occurrence of such noncompliance.
- c. Any written report required to be submitted to the Director in accordance with Parts I.D.2.a. and b. shall be submitted using a Noncompliance Notification Form (ADEM Form 421) available on the Department's website (<http://adem.alabama.gov/DeptForms/Form421.pdf>) and include the following information:
  - (1) A description of the discharge and cause of noncompliance;
  - (2) The period of noncompliance, including exact dates and times, or if not corrected, the anticipated time the noncompliance is expected to continue; and
  - (3) A description of the steps taken and/or being taken to reduce or eliminate the noncomplying discharge and to prevent its recurrence.

#### **1. Reduction, Suspension, or Termination of Monitoring and/or Reporting**

- a. The Director may, with respect to any point source identified on Page 1 of this Permit and described more fully in the Permittee's application, authorize the Permittee to reduce, suspend, or terminate the monitoring and/or reporting required by this Permit upon the submission of a written request for such reduction, suspension, or termination by the Permittee provided:
  - (1) All mining, processing, or disturbance in the drainage basin(s) associated with the discharge has ceased and site access is adequately restricted or controlled to preclude unpermitted and unauthorized mining, processing, transportation, or associated operations/activity;
  - (2) Permanent, perennial vegetation has been re-established on all areas mined or disturbed for at least one year since mining has ceased in the drainage basin(s) associated with the surface discharge, or all areas have been permanently graded such that all drainage is directed back into the mined pit to preclude all surface discharges;
  - (3) Unless waived in writing by the Department, the Permittee has been granted, in writing, a 100% Bond Release, if applicable, by the Alabama Department of Industrial Relations and, if applicable, by the Surface Mining Commission for all areas mined or disturbed in the drainage basin(s) associated with the discharge;
  - (4) Unless waived in writing by the Department, the Permittee has submitted inspection reports prepared and certified by a Professional Engineer (PE) registered in the State of Alabama or a qualified professional under the PE's direction which certify that the facility has been fully reclaimed or that water

quality remediation has been achieved. The first inspection must be conducted approximately one year prior to and the second inspection must be conducted within thirty days of the Permittee's request for termination of monitoring and reporting requirements;

- (5) All surface effects of the mining activity such as fuel or chemical tanks, preparation plants or equipment, old tools or equipment, junk or debris, etc., must be removed and disposed of according to applicable state and federal regulations;
  - (6) The Permittee's request for termination of monitoring and reporting requirements contained in this Permit has been supported by monitoring data covering a period of at least six consecutive months or such longer period as is necessary to assure that the data reflect discharges occurring during varying seasonal climatological conditions;
  - (7) The Permittee has stated in its request that the samples collected and reported in the monitoring data submitted in support of the Permittee's request for monitoring termination or suspension are representative of the discharge and were collected in accordance with all Permit terms and conditions respecting sampling times (e.g., rainfall events) and methods and were analyzed in accordance with all Permit terms and conditions respecting analytical methods and procedures;
  - (8) The Permittee has certified that during the entire period covered by the monitoring data submitted, no chemical treatment of the discharge was provided;
  - (9) The Permittee's request has included the certification required by Part I.D.1.e. of this Permit; and
  - (10) The Permittee has certified to the Director in writing as part of the request, its compliance with (1) through (9) above.
- b. It remains the responsibility of the Permittee to comply with the monitoring and reporting requirements of this Permit until written authorization to reduce, suspend, or terminate such monitoring and/or reporting is received by the Permittee from the Director.

## **E. OTHER REPORTING AND NOTIFICATION REQUIREMENTS**

### **1. Anticipated Noncompliance**

The Permittee shall give the Director written advance notice of any planned changes or other circumstances regarding a facility which may result in noncompliance with permit requirements.

### **2. Termination of Discharge**

The Permittee shall notify the Director, in writing, when all discharges from any point source(s) identified on Page 1 of this Permit and described more fully in the Permittee's application have permanently ceased.

### **3. Updating Information**

- a. The Permittee shall inform the Director of any change in the Permittee's mailing address or telephone number or in the Permittee's designation of a facility contact or officer(s)

having the authority and responsibility to prevent and abate violations of the AWPCA, the AEMA, the Department's rules and regulations, and the terms and conditions of this Permit, in writing, no later than ten (10) days after such change. Upon request of the Director, the Permittee shall furnish the Director with an update of any information provided in the permit application.

- b. If the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

**4. Duty to Provide Information**

- a. The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, suspending, terminating, or revoking and reissuing this Permit, in whole or in part, or to determine compliance with this Permit. The Permittee shall also furnish to the Director upon request, copies of records required to be maintained by this Permit.
- b. The Permittee shall furnish to the Director upon request, within a reasonable time, available information (name, phone number, address, and site location) which identifies offsite sources of material or natural resources (mineral, ore, or other material such as iron, coal, coke, dirt, chert, shale, clay, sand, gravel, bauxite, rock, stone, etc.) used in its operation or stored at the facility.

**F. SCHEDULE OF COMPLIANCE**

The Permittee shall achieve compliance with the discharge limitations specified in Part I.A. of this Permit in accordance with the following schedule:

**Compliance must be achieved by the effective date of this Permit.**

## **PART II OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES**

### **A. OPERATIONAL AND MANAGEMENT REQUIREMENTS**

#### **1. Facilities Operation and Management**

The Permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of this Permit.

#### **2. Pollution Abatement and/or Prevention Plan**

The Pollution Abatement and/or Prevention (PAP) Plan shall be prepared and certified by a registered Professional Engineer (PE), licensed to practice in the State of Alabama, and shall include at a minimum, the information indicated in ADEM Admin. Code r. 335-6-9-.03 and ADEM Admin. Code ch. 335-6-9 Appendices A and B. The PAP Plan shall become a part of this Permit and all requirements of the PAP Plan shall become requirements of this Permit pursuant to ADEM Admin. Code r. 335-6-9-.05(2).

#### **3. Best Management Practices (BMPs)**

a. Unless otherwise authorized in writing by the Director, the Permittee shall provide a means of subsurface withdrawal for any discharge from each point source identified on Page 1 of this Permit and described more fully in the Permittee's application. Notwithstanding the above provision, a means of subsurface withdrawal need not be provided for any discharge caused by a 24-hour precipitation event greater than a 10-year, 24-hour precipitation event.

b. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director has granted prior written authorization for dilution to meet water quality requirements.

c. The Permittee shall minimize the contact of water with overburden, including but not limited to stabilizing disturbed areas through grading, diverting runoff, achieving quick growing stands of temporary vegetation, sealing acid-forming and toxic-forming materials, and maximizing placement of waste materials in back-fill areas.

d. The Permittee shall prepare, submit to the Department for approval, and implement a Best Management Practices (BMPs) Plan for containment of any or all process liquids or solids, in a manner such that these materials do not present a potential for discharge, if so required by the Director. When submitted and approved, the BMP Plan shall become a part of this Permit and all requirements of the BMP Plan shall become requirements of this Permit.

#### **e. Spill Prevention, Control, and Management**

The Permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan acceptable to the Department that is prepared and certified by a Professional Engineer (PE), registered in the State of Alabama, for all onsite petroleum product or other pollutant storage tanks or containers as required by applicable state (ADEM Admin. Code r. 335-6-6-.12(r)) and federal (40 C.F.R. §§112.1-.7)

regulations. The Permittee shall implement appropriate structural and/or non-structural spill prevention, control, and/or management sufficient to prevent any spills of pollutants from entering a ground or surface water of the State or a publicly or privately owned treatment works. Careful consideration should be applied for tanks or containers located near treatment ponds, water bodies, or high traffic areas. In most situations this would require construction of a containment system if the cumulative storage capacity of petroleum products or other pollutants at the facility is greater than 1320 gallons. Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and shall prevent the contamination of groundwater. Such containment systems shall be capable of retaining a volume equal to 110 percent of the capacity of the largest tank for which containment is provided. The applicant shall maintain onsite or have readily available flotation booms to contain, and sufficient material to absorb, fuel and chemical spills and leaks. Soil contaminated by chemical spills, oil spills, etc., must be immediately cleaned up or be removed and disposed of in an approved manner.

- f. All surface drainage and storm water runoff which originate within or enters the Permittee's premises and which contains any pollutants or other wastes shall be discharged, if at all, from a point source identified on Page 1 of this Permit and described more fully in the Permittee's application.
- g. The Permittee shall take all reasonable precautions to prevent any surface drainage or storm water runoff which originates outside the Permittee's premises and which contains any pollutants or other wastes from entering the Permittee's premises. At no time shall the Permittee discharge any such surface drainage or storm water runoff which enters the Permittee's premises if, either alone or in combination with the Permittee's effluent, the discharge would exceed any applicable discharge limitation specified in Part I.A. of this Permit.

**4. Biocide Additives**

- a. The Permittee shall notify the Director in writing not later than sixty (60) days prior to instituting the use of any biocide corrosion inhibitor or chemical additive in any cooling or boiler system(s) regulated by this Permit. Notification is not required for additives that should not reasonably be expected to cause the cooling water or boiler water to exhibit toxicity as determined by analysis of manufacturer's data or testing by the Permittee. Such notification shall include:
  - (a) Name and general composition of biocide or chemical;
  - (b) 96-hour median tolerance limit data for organisms representative of the biota of the water(s) which the discharge(s) enter(s);
  - (c) Quantities to be used;
  - (d) Frequencies of use;
  - (e) Proposed discharge concentrations; and
  - (f) EPA registration number, if applicable.
- b. The use of any biocide or chemical additive containing tributyl tin, tributyl tin oxide, zinc, chromium, or related compounds in any cooling or boiler system(s) regulated by the Permit is prohibited except as exempted below. The use of a biocide or additive containing zinc, chromium or related compounds may be used in special circumstances if (1) the permit contains limits for these substances, or (2) the applicant demonstrates



during the application process that the use of zinc, chromium or related compounds as a biocide or additive will not pose a reasonable potential to violate the applicable State water quality standards for these substances. The use of any additive, not identified in this Permit or in the application for this Permit or not exempted from notification under this Permit is prohibited, prior to a determination by the Department that permit modification to control discharge of the additive is not required or prior to issuance of a permit modification controlling discharge of the additive.

**5. Facility Identification**

The Permittee shall clearly display prior to commencement of any regulated activity and until permit coverage is properly terminated, the name of the Permittee, entire NPDES permit number, facility or site name, and other descriptive information deemed appropriate by the Permittee at an easily accessible location(s) to adequately identify the site, unless approved otherwise in writing by the Department. The Permittee shall repair or replace the sign(s) as necessary upon becoming aware that the identification is missing or is unreadable due to age, vandalism, theft, weather, or other reason.

**6. Removed Substances**

Solids, sludges, filter backwash, or any other pollutants or other wastes removed in the course of treatment or control of wastewaters shall be disposed of in a manner that complies with all applicable Department rules and regulations.

**7. Loss or Failure of Treatment Facilities**

Upon the loss or failure of any treatment facility, including but not limited to the loss or failure of the primary source of power of the treatment facility, the Permittee shall, where necessary to maintain compliance with the discharge limitations specified in Part I.A. of this Permit or any other terms or conditions of this Permit, cease, reduce, or otherwise control production and/or discharges until treatment is restored.

**8. Duty to Mitigate**

The Permittee shall promptly take all reasonable steps to minimize or prevent any violation of this Permit or to mitigate and minimize any adverse impact to waters resulting from noncompliance with any discharge limitation specified in Part I.A. of this Permit, including such accelerated or additional monitoring of the discharge and/or the receiving waterbody as is necessary to determine the nature and impact of the noncomplying discharge.

**B. BYPASS AND UPSET**

**1. Bypass**

- a. Any bypass is prohibited except as provided in Parts II.B.1.b. and c.
- b. A bypass is not prohibited if:
  - (1) It does not cause any applicable discharge limitation specified in Part I.A. of this Permit to be exceeded;
  - (2) The discharge resulting from such bypass enters the same receiving water as the discharge from the permitted outfall;

- (3) It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system; and
  - (4) The Permittee monitors the discharge resulting from such bypass at a frequency, at least daily, sufficient to prove compliance with the discharge limitations specified in Part I.A. of this Permit.
- c. A bypass is not prohibited and need not meet the discharge limitations specified in Part I.A. of this Permit if:
- (1) It is unavoidable to prevent loss of life, personal injury, or severe property damage;
  - (2) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the Permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
  - (3) The Permittee submits a written request for authorization to bypass to the Director at least ten (10) days, if possible, prior to the anticipated bypass or within 24 hours of an unanticipated bypass, the Permittee is granted such authorization, and Permittee complies with any conditions imposed by the Director to minimize any adverse impact to waters resulting from the bypass.
- d. The Permittee has the burden of establishing that each of the conditions of Parts II.B.1.b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in Part II.B.1.a. and an exemption, where applicable, from the discharge limitations specified in Part I.A. of this Permit.

## 2. Upset

- a. Except as provided in Parts II.B.2.b. and c., a discharge which results from an upset need not meet the applicable discharge limitations specified in Part I.A. of this Permit if:
- (1) No later than 24-hours after becoming aware of the occurrence of the upset, the Permittee orally reports the occurrence and circumstances of the upset to the Director; and
  - (2) No later than five (5) days after becoming aware of the occurrence of the upset, the Permittee furnishes the Director with evidence, including properly signed, contemporaneous operating logs, design drawings, construction certification, maintenance records, weir flow measurements, dated photographs, rain gauge measurements, or other relevant evidence, demonstrating that:
    - (i) An upset occurred;
    - (ii) The Permittee can identify the specific cause(s) of the upset;
    - (iii) The Permittee's treatment facility was being properly operated at the time of the upset; and
    - (iv) The Permittee promptly took all reasonable steps to minimize any adverse impact to waters resulting from the upset.

- b. Notwithstanding the provisions of Part II.B.2.a., a discharge which is an overflow from a treatment facility or system, or an excess discharge from a point source associated with a treatment facility or system and which results from a 24-hour precipitation event larger than a 10-year, 24-hour precipitation event is not exempted from the discharge limitations specified in Part I.A. of this Permit unless:
- (1) The treatment facility or system is designed, constructed, and maintained to contain the maximum volume of wastewater which would be generated by the facility during a 24-hour period without an increase in volume from precipitation and the maximum volume of wastewater resulting from a 10-year, 24-hour precipitation event or to treat the maximum flow associated with these volumes.  
  
In computing the maximum volume of wastewater which would result from a 10-year, 24-hour precipitation event, the volume which would result from all areas contributing runoff to the individual treatment facility must be included (i.e., all runoff that is not diverted from the mining area and runoff which is not diverted from the preparation plant area); and
  - (2) The Permittee takes all reasonable steps to maintain treatment of the wastewater and minimize the amount of overflow or excess discharge.
- c. The Permittee has the burden of establishing that each of the conditions of Parts II.B.2.a. and b. have been met to qualify for an exemption from the discharge limitations specified in Part I.A. of this Permit.

## **C. PERMIT CONDITIONS AND RESTRICTIONS**

### **1. Prohibition against Discharge from Facilities Not Certified**

- a. Notwithstanding any other provisions of this Permit, if the permitted facility has not obtained or is not required to obtain a permit from the Alabama Surface Mining Commission, any discharge(s) from any point or nonpoint source(s) from the permitted facility which was not certified to the Department on a form approved by the Department by a professional engineer, registered in the State of Alabama, as being designed, constructed, and in accordance with plans and specifications reviewed by the Department is prohibited; or
- b. Notwithstanding any other provisions of this Permit, if the permitted facility has obtained or is required to obtain a permit from the Alabama Surface Mining Commission, any discharge(s) from any point or nonpoint source(s) from the permitted facility which is associated with a treatment facility which was not constructed and certified to the Alabama Surface Mining Commission pursuant to applicable provisions of said Commission's regulations, is prohibited until the Permittee submits to the Alabama Surface Mining Commission, certification by a professional engineer, registered in the State of Alabama, certifying that such facility has been constructed in accordance with plans and specifications approved by the Alabama Surface Mining Commission. This requirement shall not apply to pumped discharges from the underground works of underground coal mines where no surface structure is required by the Alabama Surface Mining Commission, provided the Department is notified in writing of the completion or installation of such facilities, and the pumped discharges will meet permit effluent limits without treatment.

**2. Permit Modification, Suspension, Termination, and Revocation**

- a. This Permit may be modified, suspended, terminated, or revoked and reissued, in whole or in part, during its term for cause, including but not limited to, the following:
- (1) The violation of any term or condition of this Permit;
  - (2) The obtaining of this Permit by misrepresentation or the failure to disclose fully all relevant facts;
  - (3) The submission of materially false or inaccurate statements or information in the permit application or reports required by the Permit;
  - (4) The need for a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;
  - (5) The existence of any typographical or clerical errors or of any errors in the calculation of discharge limitations;
  - (6) The existence of material and substantial alterations or additions to the facility or activity generating wastewater which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit;
  - (7) The threat of the Permittee's discharge on human health or welfare; or
  - (8) Any other cause allowed by ADEM Admin. Code ch. 335-6-6.
- b. The filing of a request by the Permittee for modification, suspension, termination, or revocation and reissuance of this Permit, in whole or in part, does not stay any Permit term or condition of this Permit.

**3. Automatic Expiration of Permits for New or Increased Discharges**

- a. Except as provided by ADEM Admin. Code r. 335-6-6-.02(h) and 335-6-6-.05, if this Permit was issued for a new discharger or new source, it shall expire eighteen months after the issuance date if construction has not begun during that eighteen month period.
- b. Except as provided by ADEM Admin. Code r. 335-6-6-.02(h) and 335-6-6-.05, if any portion of this Permit was issued or modified to authorize the discharge of increased quantities of pollutants to accommodate the modification of an existing facility, that portion of this Permit shall expire eighteen months after this Permit's issuance if construction of the modification has not begun within eighteen month period.
- c. Construction has begun when the owner or operator has:
- (1) Begun, or caused to begin as part of a continuous on-site construction program:
    - (i) Any placement, assembly, or installation of facilities or equipment; or
    - (ii) Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

- (2) Entered into a binding contractual obligation for the purpose of placement, assembly, or installation of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under the paragraph. The entering into a lease with the State of Alabama for exploration and production of hydrocarbons shall also be considered beginning construction.
- d. The automatic expiration of this Permit for new or increased discharges if construction has not begun within the eighteen month period after the issuance of this Permit may be tolled by administrative or judicial stay.

#### **4. Transfer of Permit**

This Permit may not be transferred or the name of the Permittee changed without notice to the Director and subsequent modification or revocation and reissuance of this Permit to identify the new Permittee and to incorporate any other changes as may be required under the FWPCA or AWPCA. In the case of a change in name, ownership, or control of the Permittee's premises only, a request for permit modification in a format acceptable to the Director is required at least 30 days prior to the change. In the case of a change in name, ownership, or control of the Permittee's premises accompanied by a change or proposed change in effluent characteristics, a complete permit application is required to be submitted to the Director at least 180 days prior to the change. Whenever the Director is notified of a change in name, ownership, or control, he may decide not to modify the existing Permit and require the submission of a new permit application.

#### **5. Groundwater**

Unless authorized on page 1 of this Permit, this Permit does not authorize any discharge to groundwater. Should a threat of groundwater contamination occur, the Director may require groundwater monitoring to properly assess the degree of the problem, and the Director may require that the Permittee undertake measures to abate any such discharge and/or contamination.

#### **6. Property and Other Rights**

This Permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, trespass, or any infringement of Federal, State, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the State or of the United States.

### **D. RESPONSIBILITIES**

#### **1. Duty to Comply**

- a. The Permittee must comply with all terms and conditions of this Permit. Any permit noncompliance constitutes a violation of the AWPCA, AEMA, and the FWPCA and is grounds for enforcement action, for permit termination, revocation and reissuance, suspension, modification, or denial of a permit renewal application.
- b. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the FWPCA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Permit has not yet been modified to incorporate the effluent standard, prohibition or requirement.

- c. For any violation(s) of this Permit, the Permittee is subject to a civil penalty as authorized by the AWPCA, the AEMA, the FWPCA, and Code of Alabama 1975, §§22-22A-1 et. seq., as amended, and/or a criminal penalty as authorized by Code of Alabama 1975, §22-22-1 et. seq., as amended.
- d. The necessity to halt or reduce production or other activities in order to maintain compliance with the conditions of this Permit shall not be a defense for a Permittee in an enforcement action.
- e. Nothing in this Permit shall be construed to preclude or negate the Permittee's responsibility or liability to apply for, obtain, or comply with other ADEM, federal, state, or local government permits, certifications, licenses, or other approvals.
- f. The discharge of a pollutant from a source not specifically identified in the permit application for this Permit and not specifically included in the description of an outfall in this Permit is not authorized and shall constitute noncompliance with this Permit.
- g. The Permittee shall take all reasonable steps, including cessation of production or other activities, to minimize or prevent any violation of this Permit or to minimize or prevent any adverse impact of any permit violation.

## **2. Change in Discharge**

- a. The Permittee shall apply for a permit modification at least 180 days in advance of any facility expansion, production increase, process change, or other action that could result in the discharge of additional pollutants, increase the quantity of a discharged pollutant, or that could result in an additional discharge point. This requirement also applies to pollutants that are not subject to discharge limitations in this Permit. No new or increased discharge may begin until the Director has authorized it by issuance of a permit modification or a reissued permit.
- b. The Permittee shall notify the Director as soon as it knows or has reason to believe that it has begun or expects to begin to discharge any pollutant listed as a toxic pollutant pursuant to Section 307(a) of the FWPCA, 33 U.S.C. §1317(a), any substance designated as a hazardous substance pursuant to Section 311(b)(2) of the FWPCA, 33 U.S.C. §1321(b)(2), any waste listed as a hazardous waste pursuant to Code of Alabama 1975, §22-30-10, or any other pollutants or other wastes which is not subject to any discharge limitations specified in Part I.A. of this Permit and was not reported in the Permittee's application, was reported in the Permittee's application in concentrations or mass rates lower than that which the Permittee expects to begin to be discharged, or has reason to believe has begun to be discharged.

## **3. Compliance with Toxic or Other Pollutant Effluent Standard or Prohibition**

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Sections 301(b)(2)(C),(D),(E) and (F) of the FWPCA, 33 U.S.C. §1311(b)(2)(C),(D),(E), and (F); 304(b)(2) of the FWPCA, 33 U.S.C. §1314(b)(2); or 307(a) of the FWPCA, 33 U.S.C. §1317(a), for a toxic or other pollutant discharged by the Permittee, and such standard or prohibition is more stringent than any discharge limitation on the pollutant specified in Part I.A. of this Permit or controls a pollutant not limited in Part I.A. of this Permit, this Permit shall be modified to conform to the toxic or other pollutant effluent standard or prohibition and the Permittee shall be notified of such modification. If this Permit has not been modified to conform to the toxic or other pollutant effluent standard or prohibition before the effective date of such standard or prohibition, the authorization to discharge in this Permit shall be void to the extent that any discharge limitation on such pollutant in Part I.A.

of this Permit exceeds or is inconsistent with the established toxic or other pollutant effluent standard or prohibition.

**4. Compliance with Water Quality Standards and Other Provisions**

- a. On the basis of the Permittee's application, plans, or other available information, the Department has determined that compliance with the terms and conditions of this Permit will assure compliance with applicable water quality standards. However, this Permit does not relieve the Permittee from compliance with applicable State water quality standards established in ADEM Admin. Code ch. 335-6-10, and does not preclude the Department from taking action as appropriate to address the potential for contravention of applicable State water quality standards which could result from discharges of pollutants from the permitted facility.
- b. Compliance with Permit terms and conditions notwithstanding, if the Permittee's discharge(s) from point source(s) identified on Page 1 of this Permit cause(s) or contribute(s) to a condition in contravention of State water quality standards, the Department may require abatement action to be taken by the Permittee, modify the Permit pursuant to the Department's rules and regulations, or both.
- c. If the Department determines, on the basis of a notice provided pursuant to Part II.C.2. of this Permit or any investigation, inspection, or sampling, that a modification of this Permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification and, in cases of emergency, the Director may prohibit the noticed act until the Permit has been modified.

**5. Compliance with Statutes and Rules**

- a. This Permit has been issued under ADEM Admin. Code div. 335-6. All provisions of this division, that are applicable to this Permit, are hereby made a part of this Permit. A copy of this division may be obtained for a small charge from the Office of General Counsel, Alabama Department of Environmental Management, 1400 Coliseum Blvd., Montgomery, AL 36110-2059.
- b. This Permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

**6. Right of Entry and Inspection**

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the Permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by the AWPCA, any substances or parameters at any location.

**7. Duty to Reapply or Notify of Intent to Cease Discharge**

- a. If the Permittee intends to continue to discharge beyond the expiration date of this Permit, the Permittee shall file with the Department a complete permit application for reissuance of this Permit at least 180 days prior to its expiration.
- b. If the Permittee does not desire to continue the discharge(s) allowed by this Permit, the Permittee shall notify the Department at least 180 days prior to expiration of this Permit of the Permittee's intention not to request reissuance of this Permit. This notification must include the information required in Part I.D.4.a. and be signed by an individual meeting the signatory requirements for a permit application as set forth in ADEM Admin. Code r. 335-6-6-.09.
- c. Failure of the Permittee to submit to the Department a complete application for reissuance of this Permit at least 180 days prior to the expiration date of this Permit will void the automatic continuation of this Permit provided by ADEM Admin. Code r. 335-6-6-.06; and should this Permit not be reissued for any reason, any discharge after the expiration of this Permit will be an unpermitted discharge.



## **PART III ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS**

### **A. CIVIL AND CRIMINAL LIABILITY**

#### **1. Tampering**

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under this Permit shall, upon conviction, be subject to penalties and/or imprisonment as provided by the AWPCA and/or the AEMA.

#### **2. False Statements**

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished as provided by applicable State and Federal law.

#### **3. Permit Enforcement**

This NPDES Permit is a Permit for the purpose of the AWPCA, the AEMA, and the FWPCA, and as such all terms, conditions, or limitations of this Permit are enforceable under State and Federal law.

#### **4. Relief From Liability**

Except as provided in Part II.B.1. (Bypass) and Part II.B.2. (Upset), nothing in this Permit shall be construed to relieve the Permittee of civil or criminal liability under the AWPCA, AEMA, or FWPCA for noncompliance with any term or condition of this Permit.

### **B. OIL AND HAZARDOUS SUBSTANCE LIABILITY**

Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject to under Section 311 of the FWPCA, 33 U.S.C. §1321.

### **C. AVAILABILITY OF REPORTS**

Except for data determined to be confidential under Code of Alabama 1975, §22-22-9(c), all reports prepared in accordance with the terms of this Permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential. Knowingly making any false statement in any such report may result in the imposition of criminal penalties as provided for in Section 309 of the FWPCA, 33 U.S.C. §1319, and Code of Alabama 1975, §22-22-14.

### **D. DEFINITIONS**

1. Acid or ferruginous mine drainage – means mine drainage which, before any treatment, either has a pH of less than 6 or a total iron concentration equal to or greater than 10 mg/L.
2. Alabama Environmental Management Act (AEMA) - means Code of Alabama 1975, §§22-22A-1 et. seq., as amended.
3. Alabama Water Pollution Control Act (AWPCA) - means Code of Alabama 1975, §§22-22-1 et. seq., as amended.

4. Alkaline mine drainage – means mine drainage which, before any treatment, has pH equal to or greater than 6.0 and total iron concentration of less than 10mg/L.
5. Average monthly discharge limitation - means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).
6. Arithmetic Mean - means the summation of the individual values of any set of values divided by the number of individual values.
7. BOD - means the five-day measure of the pollutant parameter biochemical oxygen demand
8. Bypass - means the intentional diversion of waste streams from any portion of a treatment facility.
9. CBOD - means the five-day measure of the pollutant parameter carbonaceous biochemical oxygen demand.
10. Controlled Surface Mine Drainage – means any surface mine drainage that is pumped or siphoned from the active mining area.
11. Crushed stone mine - means an area on or beneath land which is mined, quarried, or otherwise disturbed in activity related to the extraction, removal, or recovery of stone from natural or artificial deposits, including active mining, reclamation, and mineral storage areas, for production of crushed stone.
12. Daily discharge - means the discharge of a pollutant measured during any consecutive 24-hour period in accordance with the sample type and analytical methodology specified by the discharge permit.
13. Daily maximum - means the highest value of any individual sample result obtained during a day.
14. Daily minimum - means the lowest value of any individual sample result obtained during a day.
15. Day - means any consecutive 24-hour period.
16. Department - means the Alabama Department of Environmental Management.
17. Director - means the Director of the Department or his authorized representative or designee.
18. Discharge - means "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other waste into waters of the state." Code of Alabama 1975, §22-22-1(b)(8).
19. Discharge monitoring report (DMR) - means the form approved by the Director to accomplish monitoring report requirements of an NPDES Permit.
20. DO - means dissolved oxygen.
21. E. coli – means the pollutant parameter Escherichia coli.
22. 8HC - means 8-hour composite sample, including any of the following:

- a. The mixing of at least 5 equal volume samples collected at constant time intervals of not more than 2 hours over a period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.
  - b. A sample continuously collected at a constant rate over period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.
23. EPA - means the United States Environmental Protection Agency.
  24. Federal Water Pollution Control Act (FWPCA) - means 33 U.S.C. §§1251 *et. seq.*, as amended.
  25. Flow – means the total volume of discharge in a 24-hour period.
  26. Geometric Mean - means the Nth root of the product of the individual values of any set of values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered one (1).
  27. Grab Sample - means a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the discharge.
  28. Indirect Discharger - means a nondomestic discharger who discharges pollutants to a publicly owned treatment works or a privately owned treatment facility operated by another person.
  29. Industrial User - means those industries identified in the Standard Industrial Classification manual, Bureau of the Budget 1967, as amended and supplemented, under the category “Division D – Manufacturing” and such other classes of significant waste producers as, by regulation, the Director deems appropriate.
  30. mg/L - means milligrams per liter of discharge.
  31. MGD - means million gallons per day.
  32. Monthly Average - means, other than for E. coli bacteria, the arithmetic mean of all the composite or grab samples taken for the daily discharges collected in one month period. The monthly average for E. coli bacteria is the geometric mean of daily discharge samples collected in a one month period. The monthly average for flow is the arithmetic mean of all flow measurements taken in a one month period. (Zero discharges shall not be included in the calculation of monthly averages.)
  33. New Discharger - means a person owning or operating any building, structure, facility or installation:
    - a. From which there is or may be a discharge of pollutants;
    - b. From which the discharge of pollutants did not commence prior to August 13, 1979, and which is not a new source; and
    - c. Which has never received a final effective NPDES Permit for dischargers at that site.
  34. New Source - means:
    - a. A new source as defined for coal mines by 40 CFR Part 434.11 (1994); and

- b. Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:
  - (1) After promulgation of standards of performance under Section 306 of FWPCA which are applicable to such source; or
  - (2) After proposal of standards of performance in accordance with Section 306 of the FWPCA which are applicable to such source, but only if the standards are promulgated in accordance with Section 206 within 120 days of their proposal.
- 35. NH<sub>3</sub>-N - means the pollutant parameter ammonia, measured as nitrogen.
- 36. 1-year, 24-hour precipitation event - means the maximum 24-hour precipitation event with a probable recurrence interval of once in one year as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.
- 37. Permit application - means forms and additional information that are required by ADEM Admin. Code r. 335-6-6-.08 and applicable permit fees.
- 38. Point Source - means "any discernible, confined and discrete conveyance, including but not limited to any pipe, channel, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged." Section 502(14) of the FWPCA, 33 U.S.C. §1362(14).
- 39. Pollutant - includes for purposes of this Permit, but is not limited to, those pollutants specified in Code of Alabama 1975, §22-22-1(b)(3) and those effluent characteristics, excluding flow, specified in Part I.A. of this Permit.
- 40. Pollutant of Concern - means those pollutants for which a water body is listed as impaired or which contribute to the listed impairment.
- 41. Pollution Abatement and/or Prevention Plan (PAP Plan) – mining operations plan developed to minimize impacts on water quality to avoid a contravention of the applicable water quality standards as defined in ADEM Admin. Code r. 335-6-9-.03
- 42. Preparation, Dry - means a dry preparation facility within which the mineral/material is cleaned, separated, or otherwise processed without use of water or chemical additives before it is shipped to the customer or otherwise utilized. A dry preparation plant includes all ancillary operations and structures necessary to clean, separate, or otherwise process the mineral/material, such as storage areas and loading facilities. Dry preparation also includes minor water spray(s) used solely for dust suppression on equipment and roads to minimize dust emissions.
- 43. Preparation, Wet - means a wet preparation facility within which the mineral/material is cleaned, separated, or otherwise processed using water or chemical additives before it is shipped to the customer or otherwise utilized. A wet preparation plant includes all ancillary operations and structures necessary to clean, separate, or otherwise process the mineral/material, such as storage areas and loading facilities. Wet preparation also includes mineral extraction/processing by dredging, slurry pumping, etc.
- 44. Privately Owned Treatment Works - means any devices or system which is used to treat wastes from any facility whose operator is not the operator of the treatment works, and which is not a "POTW".
- 45. Publicly Owned Treatment Works (POTW) - means a wastewater collection and treatment facility owned by the State, municipality, regional entity composed of two or more municipalities, or

another entity created by the State or local authority for the purpose of collecting and treating municipal wastewater.

46. Receiving Stream - means the "waters" receiving a "discharge" from a "point source".
47. Severe property damage - means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
48. 10-year, 24-hour precipitation event - means that amount of precipitation which occurs during the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.
49. TKN - means the pollutant parameter Total Kjeldahl Nitrogen.
50. TON - means the pollutant parameter Total Organic Nitrogen.
51. TRC - means Total Residual Chlorine.
52. TSS – means the pollutant parameter Total Suspended Solids
53. Treatment facility and treatment system - means all structures which contain, convey, and as necessary, chemically or physically treat mine and/or associated preparation plant drainage, which remove pollutants limited by this Permit from such drainage or wastewater. This includes all pipes, channels, ponds, tanks, and all other equipment serving such structures.
54. 24HC - means 24-hour composite sample, including any of the following:
  - a. The mixing of at least 12 equal volume samples collected at constant time intervals of not more than 2 hours over a period of 24 hours;
  - b. A sample collected over a consecutive 24-hour period using an automatic sampler composite to one sample. As a minimum, samples shall be collected hourly and each shall be no more than one twenty-fourth (1/24) of the total sample volume collected; or
  - c. A sample collected over a consecutive 24-hour period using an automatic composite sampler composited proportional to flow.
55. 24-hour precipitation event - means that amount of precipitation which occurs within any 24-hour period.
56. 2-year, 24-hour precipitation event - means the maximum 24-hour precipitation event with a probable recurrence interval of once in two years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.
57. Upset - means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate facilities, lack of preventive maintenance, or careless or improper operation.

58. Waters - means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the State, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership, or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, §22-22-1(b)(2). "Waters" include all "navigable waters" as defined in §502(7) of the FWPCA, 33 U.S.C. §1362(7), which are within the State of Alabama.
59. Week - means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.
60. Weekly (7-day and calendar week) Average – is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week is defined as beginning on Sunday and ending on Saturday. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for the calendar week shall be included in the data for the month that contains the Saturday.

#### **E. SEVERABILITY**

The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

#### **F. PROHIBITIONS AND ACTIVITIES NOT AUTHORIZED**

1. Discharges from disposal or landfill activities as described in ADEM Admin. Code div. 335-13 are not authorized by this Permit unless specifically approved by the Department.
2. Relocation, diversion, or other alteration of a water of the State is not authorized by this Permit unless specifically approved by the Department.
3. Lime or cement manufacturing or production and discharge of process waters from such manufacturing or production is not authorized by this Permit unless specifically approved by the Department.
4. Concrete or asphalt manufacturing or production and discharge of process waters from such manufacturing or production is not authorized by this Permit unless specifically approved by the Department.
5. The discharge of wastewater, generated by any process, facility, or by any other means not under the operational control of the Permittee or not identified in the application for this Permit or not identified specifically in the description of an outfall in this Permit is not authorized by this Permit.

#### **G. DISCHARGES TO IMPAIRED WATERS**

1. This Permit does not authorize new sources or new discharges of pollutants of concern to impaired waters unless consistent with an EPA-approved or EPA-established Total Maximum Daily Load (TMDL) and applicable State law, or unless compliance with the limitations and requirements of the Permit ensure that the discharge will not contribute to further degradation of the receiving stream. Impaired waters are those that do not meet applicable water quality standards and are identified on the State of Alabama's §303(d) list or on an EPA-approved or EPA-established

TMDL. Pollutants of concern are those pollutants for which the receiving water is listed as impaired or contribute to the listed impairment.

2. Facilities that discharge into a receiving stream which is listed on the State of Alabama's §303(d) list of impaired waters, and with discharges that contain the pollutant(s) for which the waters are impaired, must within six (6) months of the Final §303(d) list approval, document in its BMP plan how the BMPs will control the discharge of the pollutant(s) of concern, and must ensure that there will be no increase of the pollutants of concern. A monitoring plan to assess the effectiveness of the BMPs in achieving the allocations must also be included in the BMP plan.
3. If the facility discharges to impaired waters as described above, it must determine whether a TMDL has been developed and approved or established by EPA for the listed waters. If a TMDL is approved or established during this Permit cycle by EPA for any waters into which the facility discharges, the facility must review the applicable TMDL to see if it includes requirements for control of any water discharged by the Permittee. Within six (6) months of the date of TMDL approval or establishment, the facility must notify the Department on how it will modify its BMP plan to include best management practices specifically targeted to achieve the allocations prescribed by the TMDL, if necessary. Any revised BMP plans must be submitted to the Department for review. The facility must include in the BMP plan a monitoring component to assess the effectiveness of the BMPs in achieving the allocations.

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
WATER DIVISION

NPDES INDIVIDUAL PERMIT RATIONALE

**Company Name:** Riverside Refractories  
**Facility Name:** Wadsworth Pit  
**County:** St Clair  
**Permit Number:** AL0078727  
**Prepared by:** Ange Boatwright  
**Date:** June 21, 2019  
**Receiving Waters:** Unnamed Tributary to Coosa River (Logan Martin Lake)  
**Permit Coverage:** Fire Clay mine, Transportation and storage, and Associated Areas  
**SIC Code:** 1459

The Department has made a tentative determination that the available information is adequate to support reissuance of this permit.

This proposed permit covers a fire clay mine, transportation and storage, and associated areas which discharge to surface waters of the state.

This proposed permit authorizes treated discharges into a stream segment, other State water, or local watershed that currently has a water quality classification of Fish and Wildlife (F&W) (ADEM Admin. Code ch. 335-6-11). The facility discharges are also located within a 24-hour travel time to the Coosa River (Logan Martin Lake) which currently has a water quality classification of Swimming and Other Whole Body Water-Contact Sports and Fish and Wildlife (S/F&W). If the requirements of the proposed permit are fully implemented, the facility will not discharge pollutants at levels that will cause or contribute to a violation of the S/F&W and F&W classifications.

Full compliance with the proposed permit terms and conditions is expected to be protective of instream water quality and ensure consistency with applicable instream State water quality standards (WQS) for the receiving stream.

Technology Based Effluent Limits (TBELs) for fire clay have not yet been developed by the EPA. Therefore, effluent limitations for TSS are established by Best Professional Judgement (BPJ) with consideration given to those proposed by the EPA for alkaline mine drainage from fire clay mines in the *Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Mineral Mining and Processing Point Source Category* (July 1979). The previous version of this permit included limitations for acid and alkaline mine drainage. Data submitted by the Permittee showed that drainage from the site to be alkaline in nature and therefore, the limitations for acid mine drainage which included limitations for total iron are no longer needed. The TSS limit proposed in this document is a daily maximum of 35 mg/l.

The instream water quality standards for pH, for streams classified as Fish and Wildlife, are 6.0 - 8.5 s.u per ADEM Admin Code r. 335-6-10-.09. However, a daily maximum pH limit of 9.0 s.u., as was previously permitted, is allowed by the Department for discharges that occur as a result of rain events due to the low discharge/stream flow ratio. Information in the Permittee's application shows that the discharges could occur during low flow conditions. Therefore, a daily maximum pH of 8.5 s.u. is used in this permit. Under no circumstances may the discharge from any outfall cause the in-stream pH to deviate more than 1.0 s.u. from the normal or natural pH, nor be less than 6.0 s.u. nor greater than 8.5 s.u.

The applicant has, in accordance with 40 CFR Part 122.21(G), submitted EPA Form 2F which includes representative data relative to metals, cyanide, and total phenols as part of the application.



The Department completed a reasonable potential analysis (RPA) of the discharges based on laboratory data provided in the Permittee's application from Outfall 001-1 and historical low flows. The RPA indicates whether or not pollutants in treated effluent have the potential to contribute to excursions of Alabama's in-stream water quality standard. Based on the laboratory data, the RPA indicates that there is no reasonable potential for in-stream water quality standards to be exceeded.

The Pollution Abatement/Prevention (PAP) plan for this facility has been prepared by a professional engineer (PE) registered in the State of Alabama and is designed to ensure reduction of pollutants in the waste stream to a level that, if operated properly, the discharge will not contribute to or cause a violation of applicable State WQS. The proposed permit terms and conditions are predicated on the basis of ensuring a reduction of pollutants in the discharge to a level that reduces the potential of contributing to or causing a violation of applicable State WQS.

In accordance with ADEM Admin. Code r. 335-6-3-.07 the design PE, as evidenced by their seal and/or signature on the application, has accepted full responsibility for the effectiveness of the waste treatment facility to treat the Permittee's effluent to meet NPDES permit limitations and requirements, and to fully comply with Alabama's WQS, when such treatment facilities are properly operated.

If there is a reasonable potential that a pollutant present in the treated discharges from a facility could cause or contribute to a contravention of applicable State WQS above numeric or narrative criteria, 40 CFR Part 122 requires the Department to establish effluent limits using calculated water quality criterion, establish effluent limits on a case-by-case basis using criteria established by EPA, or establish effluent limits based on an indicator parameter. Based on available information, potential pollutants discharged from this facility, if discharged within the concentrations allowed by this permit, would not have a reasonable potential to cause or contribute to a contravention of applicable State WQS.

Pursuant to ADEM Admin. Code r. 335-6-6-.12(r) this permit requires the Permittee to design and implement a Spill Prevention Control and Countermeasures (SPCC) plan for all stored chemicals, fuels and/or stored pollutants that have the potential to discharge to a water of the State. This plan must meet the minimum engineering requirements as defined in 40 CFR Part 112 and must provide for secondary containment adequate to control a potential spill.

The applicant is proposing discharges of pollutants to the Coosa River (Logan Martin Lake) Watershed, a water of the State with approved Total Maximum Daily Loads (TMDLs). The segment of the Coosa River (Logan Martin Lake) that would be potentially affected by the proposed discharges has approved TMDLs for Nutrients and Dissolved Oxygen / Organic Enrichment. Discharges of Nutrients and oxygen demanding constituents are not expected in significant concentrations from this type of facility. If the requirements of the proposed permit and pollution abatement plan are fully implemented, there is reasonable assurance that the facility will not discharge pollutants at levels that will cause or contribute to a violation of the approved TMDLs set forth by the Alabama Department of Environmental Management.

The applicant is not proposing discharges into a stream segment or other State water that is included on Alabama's current CWA §303(d) list. However, the discharges are upstream of the Coosa River (Logan Martin Lake) which is on the current CWA §303(d) list for priority organics (PCBs). PCBs are not expected in significant concentrations from this type of facility. If the requirements of the proposed permit and pollution abatement plan are fully implemented, there is reasonable assurance that the facility will not discharge pollutants at levels that will cause further impairment of the Coosa River (Logan Martin Lake).

The applicant is not proposing new discharges of pollutant(s) to an ADEM identified Tier I water.

The proposed permit does not authorize new or increased discharges of pollutants to a Tier II water. Therefore, the Antidegradation Policy (ADEM Admin. Code 335-6-10-.04) does not apply to this permit.

Facility Name: Riverside Refractories, Inc. - Wadsworth Pit

NPDES No.: AL0078727

Outfall 001<sup>123</sup>

Human Health Consumption Fish only (µg/l)																			
Freshwater F&W classification.				Freshwater Acute (µg/l) Q <sub>a</sub> = 1Q10					Freshwater Chronic (µg/l) Q <sub>a</sub> = 7Q10					Carcinogen Q <sub>a</sub> = Annual Average Non-Carcinogen Q <sub>a</sub> = 7Q10					
ID	Pollutant	RP?	Carcinogen yes	Background Instream (Cs) Daily Max	Max Daily Discharge as reported by Applicant <sup>4</sup> (C <sub>max</sub> )	Water Quality Criteria (C <sub>i</sub> )	Draft Permit Limit (C <sub>draft</sub> )	20% of Draft Permit Limit	RP?	Background Instream (Cs) Monthly Ave	Avg Daily Discharge as reported by Applicant (C <sub>avg</sub> )	Water Quality Criteria (C <sub>i</sub> )	Draft Permit Limit (C <sub>draft</sub> )	20% of Draft Permit Limit	RP?	Water Quality Criteria (C <sub>i</sub> )	Draft Permit Limit (C <sub>draft</sub> )	20% of Draft Permit Limit	RP?
1	Antimony			0	0	-	-	-	-	0	0	-	-	-	-	3.73E+02	3.73E+02	7.47E+01	No
2	Arsenic		YES	0	0	340.000	340.000	68.000	No	0	0	293.542	293.542	58.708	No	3.03E-01	3.03E-01	6.06E-02	No
3	Beryllium			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
4	Cadmium			0	0	2.014	2.014	0.403	No	0	0	0.246	0.246	0.049	No	-	-	-	-
5	Chromium/ Chromium III			0	0	569.763	569.763	113.953	No	0	0	74.115	74.115	14.823	No	-	-	-	-
6	Chromium/ Chromium VI			0	0	16.000	16.000	3.200	No	0	0	11.000	11.000	2.200	No	-	-	-	-
7	Copper			0	0	13.439	13.439	2.688	No	0	0	8.956	8.956	1.791	No	1.30E+03	1.30E+03	2.60E+02	No
8	Lead			0	0	64.581	64.581	12.916	No	0	0	2.517	2.517	0.503	No	-	-	-	-
9	Mercury			0	0	2.400	2.400	0.480	No	0	0	0.012	0.012	0.002	No	4.24E-02	4.24E-02	8.48E-03	No
10	Nickel			0	0	468.236	468.236	93.647	No	0	0	52.007	52.007	10.401	No	9.93E+02	9.93E+02	1.99E+02	No
11	Selenium			0	0	20.000	20.000	4.000	No	0	0	5.000	5.000	1.000	No	2.43E+03	2.43E+03	4.86E+02	No
12	Silver			0	0	3.217	3.217	0.643	No	0	0	-	-	-	-	-	-	-	-
13	Thallium			0	0	-	-	-	-	0	0	-	-	-	-	2.74E-01	2.74E-01	5.47E-02	No
14	Zinc			0	17	117.180	117.180	23.436	No	0	17	118.139	118.139	23.628	No	1.49E+04	1.49E+04	2.99E+03	No
15	Cyanide			0	0	22.000	22.000	4.400	No	0	0	5.200	5.200	1.040	No	9.33E+03	9.33E+03	1.87E+03	No
16	Total Phenolic Compounds			0	94	-	-	-	-	0	94	-	-	-	-	-	-	-	-
17	Hardness (As CaCO3)			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-

<sup>1</sup>Outfall 001 discharges to an unnamed tributary to Coosa River (Logan Martin Lake). The 7Q10 for the receiving stream is 0 cfs. This is the receiving stream flow value used in the calculations.

<sup>2</sup>Outfall 001 is reported to have a discharge flow rate of 0.730 MGD. This is the discharge flow rate used in the calculations.

<sup>3</sup>A hardness of 100 mg/L was used in the calculations based expected stream hardness in this portion of the state.

<sup>4</sup>Discharge data for all parameters are the results of samples obtained from Outfall 001 at Riverside Refractories, Inc.'s Wadsworth Pit.

# 17-43500

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM)
NPDES INDIVIDUAL PERMIT APPLICATION

SURFACE & UNDERGROUND MINERAL & ORE OR MINERAL PRODUCT MINING, QUARRYING, EXCAVATION, BORROWING, HYDRAULIC MINING, STORAGE, PROCESSING, PREPARATION, RECOVERY, HANDLING, LOADING, STORING, OR DISPOSING ACTIVITIES AND ASSOCIATED AREAS INCLUDING PRE-MINING SITE DEVELOPMENT, CONSTRUCTION, EXCAVATION, CLEARING, DISTURBANCE, RECLAMATION, AND ASSOCIATED AREAS

\$ 5820.00

INSTRUCTIONS: COMPLETE ALL QUESTIONS. RESPOND WITH "N/A" AS APPROPRIATE. INCOMPLETE OR INCORRECT ANSWERS OR MISSING SIGNATURES WILL DELAY PROCESSING. ATTACH ADDITIONAL COMMENTS OR INFORMATION AS NEEDED. IF SPACE IS INSUFFICIENT, CONTINUE ON AN ATTACHED SHEET(S) AS NECESSARY. COMMENCEMENT OF ACTIVITIES APPLIED FOR AS DETAILED IN THIS APPLICATION ARE NOT AUTHORIZED UNTIL PERMIT COVERAGE HAS BEEN ISSUED BY THE DEPARTMENT.

PLEASE TYPE OR PRINT IN INK ONLY.



PURPOSE OF THIS APPLICATION

- Initial Permit Application for New Facility
Modification of Existing Permit
Reissuance & Transfer of Existing Permit
Initial Permit Application for Existing Facility (e.g. facility previously permitted less than 5 acres)
Reissuance of Existing Permit
Reissuance & Modification Existing Permit
Revocation and Reissuance of Existing Permit
Other

I. GENERAL INFORMATION

NPDES Permit Number (Not applicable if initial permit application): AL 0078727
County(s) in which Facility is Located: St. Clair

Company/Permittee Name: Riverside Refractories, Inc.
Facility Name (e.g., Mine Name, Pit Name, etc.): Wadsworth Pit
Mailing Address of Company/Permittee: 201 Truss Ferry Road
Physical Address of Facility (as near as possible to entrance): 201 Truss Ferry Road
City: Pell City, AL 35128
Permittee Phone Number: (205) 338-3366
Permittee Fax Number: (205) 386-5390
Latitude and Longitude of entrance: 33.53280° N ; 86.30705° W

Responsible Official (as described on page 13 of this application): William Morris
Responsible Official Title: Vice-President of Operations
Mailing Address of Responsible Official: 201 Truss Ferry Road
Physical Address of Responsible Official: 201 Truss Ferry Road
City: Pell City, AL 35128
Phone Number of Responsible Official: (205) 338-3366
Fax Number of Responsible Official: (205) 386-5390
Email Address of Responsible Official: billymorris@riversiderefractories.com

Facility Contact: Parker Morris
Facility Contact Title: Assistant Plant Manager
Physical Address of Facility Contact: 201 Truss Ferry Road
Phone Number of Facility Contact: (205) 338-3366
Fax Number of Facility Contact: (205) 386-5390
City: Pell City, AL 35128
Email Address of Facility Contact: pmorris@riversiderefractories.com

**II. MEMBER INFORMATION**

A. Identify the name, title/position, and unless waived in writing by the Department, the residence address of every officer, general partner, LLP partner, LLC member, investor, director, or person performing a function similar to a director, of the applicant, and each person who is the record or beneficial owner of 10 percent or more of any class of voting stock of the applicant, or any other responsible official(s) of the applicant with legal or decision making responsibility or authority for the facility:

Name:	Title/Position:	Physical Address of Residence (P.O. Box is Not Acceptable)
<u>John C. Morris</u>	<u>President</u>	<u>1030 Image Square, Cropwell, AL 35054</u>
<u>William C. Morris</u>	<u>VP Operations</u>	<u>3629 Brookwood Rd., Birmingham, AL 35223</u>
_____	_____	_____

B. Other than the "Company/Permittee" listed in Part I., identify the name of each corporation, partnership, association, and single proprietorship for which any individual identified in Part II.A. is or was an officer, general partner, LLP partner, LLC member, investor, director, or individual performing a function similar to a director, or principal (10% or more) stockholder, that had an Alabama NPDES permit at any time during the five year (60 month) period immediately preceding the date on which this form is signed:

Name of Corporation, Partnership, Association, or Single Proprietorship:	Name of Individual from Part II.A.:	Title/Position in Corporation, Partnership, Association, or Single Proprietorship:
<u>None</u>	_____	_____
_____	_____	_____
_____	_____	_____

**III. LEGAL STRUCTURE OF APPLICANT**

- A. Indicate the legal structure of the "Company/Permittee" listed in Part I:
- Corporation     Association     Individual     Single Proprietorship     Partnership     LLP     LLC
- Government Agency: \_\_\_\_\_     Other: \_\_\_\_\_
- B. If not an individual or single proprietorship, is the "Company/Permittee" listed in Part I. properly registered and in good standing with the Alabama Secretary of State's Office? (If the answer is "No," attach a letter of explanation.)     Yes     No
- C. Parent Corporation and Subsidiary Corporations of Applicant, if any: NA
- D. Land Owner(s): Wadsworth, Edward M. & Jeanette
- E. Mining Sub-contractor(s)/Operator(s), if known: Unknown

**IV. COMPLIANCE HISTORY**

- A. Has the applicant ever had any of the following:
- |  | Yes                      | No                                  |
|--|--------------------------|-------------------------------------|
| (1) An Alabama NPDES, SID, or UIC permit suspended or terminated?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (2) An Alabama license to mine suspended or revoked?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (3) An Alabama or federal mining permit suspended or terminated?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (4) A reclamation bond, or similar security deposited in lieu of a bond, or portion thereof, forfeited?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (5) A bond or similar security deposited in lieu of a bond, or portion thereof, the purpose of which was to secure compliance with any requirement of the Alabama Water Improvement Commission or Alabama Department of Environmental Management, forfeited? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- (If the response to any item of Part IV.A. is "Yes," attach a letter of explanation.)
- B. Identify every Warning Letter, Notice of Violation (NOV), Administrative Action, or litigation issued to the applicant, parent corporation, subsidiary, general partner, LLP partner, or LLC member and filed by ADEM or EPA during the three year (36 months) period preceding the date on which this form is signed. Indicate the date of issuance, briefly describe alleged violations, list actions (if any) to abate alleged violations, and indicate date of final resolution:
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

V. OTHER PERMITS/AUTHORIZATIONS

A. List any other NPDES or other environmental permits (including permit numbers), authorizations, or certifications that have been applied for or issued within the State by ADEM, EPA, Alabama Surface Mining Commission (ASMC), Alabama Department of Industrial Relations (ADIR), or other agency, to the applicant, parent corporation, subsidiary, or LLC member for this facility whether presently effective, expired, suspended, revoked, or terminated:

ADIR

B. List any other NPDES or other ADEM permits (including permit numbers), authorizations, or certifications that have been applied for or issued within the State by ADEM, EPA, ASMC, or ADIR, to the applicant, parent corporation, subsidiary, or LLC member for other facilities whether presently effective, expired, suspended, revoked, or terminated:

NPDES ALG230037

VI. PROPOSED SCHEDULE

Anticipated Activity Commencement Date: 2004 Anticipated Activity Completion Date: 2022

VII. ACTIVITY DESCRIPTION & INFORMATION

A. Proposed Total Area of the Permitted Site: 83 acres Proposed Total Disturbed Area of the Permitted Site: 80 acres

B. Township(s), Range(s), Section(s): T 17S, R 3E, S 27

C. Detailed Directions to Site: From I-20 5.9 mi S on US 211 then 1.0 mi west on Easonville Rd

D. Is/ will this facility:

- |   | Yes                                 | No                                  |
|---|-------------------------------------|-------------------------------------|
| (1) an existing facility which currently results in discharges to State waters?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| (2) a proposed facility which will result in a discharge to State waters?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (3) be located within any 100-year flood plain?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (4) discharge to Municipal Separate Storm Sewer?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (5) discharge to waters of or be located in the Coastal Zone?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (6) need/have ADEM UIC permit coverage?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (7) be located on Indian/ historically significant lands?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (8) need/have ADEM SID permit coverage?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (9) need/have ASMC permit coverage?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (10) need/have ADIR permit coverage?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| (11) generate, treat, store, or dispose of hazardous or toxic waste ? (If "Yes," attach a detailed explanation.)        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| (12) be located in or discharge to a Public Water Supply (PWS) watershed or be located within 1/2 mile of any PWS well? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

VIII. MATERIAL TO BE REMOVED, PROCESSED, OR TRANSLOADED

List relative percentages of the mineral(s) or mineral product(s) that are proposed to be and/or are currently mined, quarried, recovered, prepared, processed, handled, transloaded, or disposed at the facility. **If more than one mineral is to be mined, list the relative percentages of each mineral by tonnage for the life of the mine.**

Dirt &/or Chert     Sand &/or Gravel     Chalk     Talc     Crushed rock (other)  
 Bentonite     Industrial Sand     Marble     Shale &/or Common Clay     Sandstone  
 Coal     Kaolin     Coal fines/refuse recovery     Coal product, coke     Slag, Red Rock  
 100% Fire clay     Iron ore     Dimension stone     Phosphate rock     Granite  
 Bauxitic Clay     Bauxite Ore     Limestone, crushed limestone and dolomite  
 Gold, other trace minerals: \_\_\_\_\_     Other: \_\_\_\_\_  
 Other: \_\_\_\_\_     Other: \_\_\_\_\_  
 Other: \_\_\_\_\_     Other: \_\_\_\_\_

**IX. PROPOSED ACTIVITY TO BE CONDUCTED**

A. Type(s) of activity presently conducted at applicant's existing facility or proposed to be conducted at facility (check all that apply):

<input checked="" type="checkbox"/> Surface mining	<input type="checkbox"/> Underground mining	<input checked="" type="checkbox"/> Quarrying	<input type="checkbox"/> Auger mining	<input type="checkbox"/> Hydraulic mining
<input type="checkbox"/> Within-bank mining	<input type="checkbox"/> Solution mining	<input checked="" type="checkbox"/> Mineral storing	<input type="checkbox"/> Lime production	<input type="checkbox"/> Cement production
<input type="checkbox"/> Synthetic fuel production	<input type="checkbox"/> Alternative fuels operation	<input type="checkbox"/> Mineral dry processing (crushing & screening)		<input type="checkbox"/> Mineral wet preparation
<input type="checkbox"/> Other beneficiation & manufacturing operations		<input checked="" type="checkbox"/> Mineral loading	<input type="checkbox"/> Chemical processing or leaching	
<input type="checkbox"/> Construction related temporary borrow pits/areas		<input checked="" type="checkbox"/> Mineral transportation ___rail___ barge <input checked="" type="checkbox"/> truck		
<input type="checkbox"/> Preparation plant waste recovery		<input type="checkbox"/> Hydraulic mining, dredging, instream or between stream-bank mining		
<input checked="" type="checkbox"/> Grading, clearing, grubbing, etc.	<input type="checkbox"/> Pre-construction ponded water removal		<input checked="" type="checkbox"/> Excavation	
<input checked="" type="checkbox"/> Pre-mining logging or land clearing	<input type="checkbox"/> Waterbody relocation or other alteration		<input type="checkbox"/> Creek/stream crossings	
<input type="checkbox"/> Onsite construction debris or equipment storage/disposal	<input type="checkbox"/> Onsite mining debris or equipment storage/disposal			
<input checked="" type="checkbox"/> Reclamation of disturbed areas	<input type="checkbox"/> Chemicals used in process or wastewater treatment (coagulant, biocide, etc.)			
<input type="checkbox"/> Adjacent/associated asphalt/concrete plant(s)	<input type="checkbox"/> Low volume sewage treatment package plant			
<input type="checkbox"/> Other: _____				

B. Primary SIC Code: 1459 Description: Mining of clay, ceramic, and refractory minerals, NEC  
 Secondary SIC Code(s): \_\_\_\_\_ Description: \_\_\_\_\_

C. Narrative Description of the Activity: Mining of refractory materials by excavation, loading into trucks, and transporting to separate facility for processing

**X. FUEL – CHEMICAL HANDLING, STORAGE & SPILL PREVENTION CONTROL & COUNTERMEASURES (SPCC) PLAN**

A. Will fuels, chemicals, compounds, or liquid waste be used or stored onsite?  Yes  No

B. If "Yes," identify the fuel, chemicals, compounds, or liquid waste and indicate the volume of each:

<i>Volume</i>	<i>Contents</i>	<i>Volume</i>	<i>Contents</i>	<i>Volume</i>	<i>Contents</i>
_____ gallons	_____	_____ gallons	_____	_____ gallons	_____
_____ gallons	_____	_____ gallons	_____	_____ gallons	_____

C. If "Yes," a detailed SPCC Plan with acceptable format and content, including diagrams, must be attached to application in accordance with ADEM Admin. Code R. 335-6-6-.12(r). Unless waived in writing by the Department on a programmatic, categorical, or individual compound/chemical basis, Material Safety Data Sheets (MSDS) for chemicals/compounds used or proposed to be used at the facility must be included in the SPCC Plan submittal.

**XI. POLLUTION ABATEMENT & PREVENTION (PAP) PLAN**

A. For non-coal mining facilities, a PAP Plan in accordance with ADEM Admin. Code r. 335-6-9-.03 has been completed and is attached as part of this application.  Yes  No

B. For coal mining facilities, a detailed PAP Plan has been submitted to ASMC according to submittal procedures for ASMC regulated facilities.  Yes  No

(1) If "Yes" to Part XI.B., provide the date that the PAP Plan was submitted to ASMC: NA

(2) If "No" to Part XI.B., provide the anticipated date that the PAP Plan will be submitted to ASMC: NA

**XII. ASMC REGULATED ENTITIES**

A. Is this coal mining operation regulated by ASMC?  Yes  No

B. If "Yes", provide copies as part of this application of any pre-mining hydrologic sampling reports and Hydrologic Monitoring Reports which have been submitted to ASMC within the 36 months prior to submittal of this application.







**XVII. DISCHARGE STRUCTURE DESCRIPTION & POLLUTANT SOURCE**

The applicant is required to supply outfall number(s) as it appears on the map(s) required by this application [if this application is for a modification to an existing permit do not change the numbering sequence of the permitted outfalls], describe each, (e.g., pipe, spillway, channel, tunnel, conduit, well, discrete fissure, or container), and identify the origin of pollutants. The response must be precise for each outfall. If the discharge of pollutants from any outfall is the result of commingling of waste streams from different origins, each origin must be completely described.

Outfall	Discharge structure Description	Description of Origin Of pollutants	Surface Discharge	Groundwater Discharge	Wet Prep -Other Production Plant	Pumped or Controlled Discharge	Low Volume STP	Other
001E	Pipe, spillway	8,9,10	Yes	No	No	Yes	No	NA

Origin of Pollutants – typical examples: (1) Discharge of drainage from the underground workings of an underground coal mine, (2) Discharge of drainage from a coal surface mine, (3) Discharge of drainage from a coal preparation plant and associated areas, (4) Discharge of process wastewater from a gravel-washing plant, (5) Discharge of wastewater from an existing source coal preparation plant, (6) Discharge of drainage from a sand and gravel pit, (7) Pumped discharge from a limestone quarry, (8) Controlled surface mine drainage (pumped or siphoned), (9) Discharge of drainage from mine reclamation, (10) Other: Discharge from a fire clay pit

XVIII. PROPOSED NEW OR INCREASED DISCHARGES

A. Pursuant to ADEM Admin. Code Chapter 335-6-10-.12(9), responses to the following questions must be provided by the applicant requesting NPDES permit coverage for new or expanded discharges of pollutant(s) to Tier 2 waters (except discharges eligible for coverage under general permits). As part of the permit application review process, the Department is required to consider, based on the applicant's demonstration, whether the proposed new or increased discharge to Tier 2 waters is necessary for important economic or social development in the area in which the waters are located.

- Yes. New/increased discharges of pollutant(s) or discharge locations to Tier 2 waters are proposed.
- No. New/increased discharges of pollutants(s) or discharge locations to Tier 2 waters are not proposed.

B. If "Yes," complete Items 1 through 6 of this Part (XVII.B.), ADEM Form 311-Alternative Analysis, and either ADEM Form 312 or ADEM Form 313-Calculation of Total Annualized Project Costs (Public-Sector or Private-Sector, whichever is applicable). ADEM Form 312 or ADEM Form 313, whichever, is applicable, should be completed for each technically feasible alternative evaluated on ADEM Form 311. ADEM Forms can be found on the Department's website at [www.adem.alabama.gov/DentForms](http://www.adem.alabama.gov/DentForms). **Attach additional sheets/documentation and supporting information as needed.**

(1) What environmental or public health problem will the discharge be correcting?

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(2) How much will the discharger be increasing employment (at its existing facility or as a result of locating a new facility)?

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(3) How much reduction in employment will the discharger be avoiding?

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(4) How much additional state or local taxes will the discharger be paying?

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(5) What public service to the community will the discharger be providing?

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(6) What economic or social benefit will the discharger be providing to the community?

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XIX. POLLUTION ABATEMENT PLAN (PAP) SUMMARY

Outfall(s): 001E

Y	N	N/A	
✓			Runoff from all areas of disturbance is controlled
✓			Drainage from pit area, stockpiles, and spoil areas directed to a sedimentation pond
✓			Sedimentation basin at least 0.25 acre/feet for every acre of disturbed drainage
✓			Sedimentation basin cleaned out when sediment accumulation is 60% of design capacity
✓			Trees, boulders, and other obstructions removed from pond during initial construction
✓			Width of top of dam greater than 12'
✓			Side slopes of dam no steeper than 3:1
✓			Cutoff trench at least 8' wide
✓			Side slopes of cutoff trench no less than 1:1
✓			Cutoff trench located along the centerline of the dam
✓			Cutoff trench extends at least 2' into bedrock or impervious soil
✓			Cutoff trench filled with impervious material
✓			Embankments and cutoff trench 95% compaction standard proctor ASTM
✓			Embankment free of roots, tree debris, stones >6" diameter, etc.
✓			Embankment constructed in lifts no greater than 12"
✓			Spillpipe sized to carry peak flow from a one year storm event
✓			Spillpipe will not chemically react with effluent
✓			Subsurface withdrawal
✓			Anti-seep collars extend radially at least 2' from each joint in spillpipe
✓			Splashpad at the end of the spillpipe
✓			Emergency Spillway sized for peak flow from 25-yr 24-hr event if discharge not into PWS classified stream
		✓	Emergency spillway sized for peak flow from 50-yr 24-hr event if discharge is into PWS classified stream
✓			Emergency overflow at least 20' long
✓			Side slopes of emergency spillway no steeper than 2:1
✓			Emergency spillway lined with riprap or concrete
✓			Minimum of 1.5' of freeboard between normal overflow and emergency overflow
✓			Minimum of 1.5' of freeboard between max. design flow of emergency spillway and top of dam
✓			All emergency overflows are sized to handle entire drainage area for ponds in series
✓			Dam stabilized with permanent vegetation
✓			Sustained grade of haul road <10%
✓			Maximum grade of haul road <15% for no more than 300'
✓			Outer slopes of haul road no steeper than 2:1
✓			Outer slopes of haul road vegetated or otherwise stabilized
		✓	Detail drawings supplied for all stream crossings
✓			Short-Term Stabilization/Grading And Temporary Vegetative Cover Plans
			Long-Term Stabilization/Grading And Permanent Reclamation or Water Quality Remediation Plans

The applicant has completed the surface water discharge alternatives analysis and has supporting documentation, including annualized costs for each technically feasible alternative available for review upon request

**IDENTIFY AND PROVIDE DETAILED EXPLANATION FOR ANY "N" OR "N/A" RESPONSE(S):**

Discharge is not to a PWS classified stream so the 50-yr/24-hr event requirement is not applicable.
No stream crossings.

**XX. POLLUTION ABATEMENT PLAN (PAP) REVIEW CHECKLIST**

Y	N	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PE Seal with License #  
 Name and Address of Operator  
 Legal Description of Facility

**General Information:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name of Company  
 Number of Employees  
 Products to be Mined  
 Hours of Operation  
 Water Supply and Disposition

**Topographic Map:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mine Location  
 Location of Prep Plant  
 Location of Treatment Basins  
 Location of Discharge Points  
 Location of Adjacent Streams

**1" - 500' or Equivalent Facility Map:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drainage Patterns  
 Mining Details  
 All Roads, Structures Detailed  
 All Treatment Structures Detailed

**Detailed Design Diagrams:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plan Views  
 Cross-section Views  
 Method of Diverting Runoff to Treatment Basins

**Narrative of Operations:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Raw Materials Defined  
 Processes Defined  
 Products Defined

**Schematic Diagram:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Points of Waste Origin  
 Collection System  
 Disposal System

**Post Treatment Quantity and Quality of Effluent:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Flow  
 Suspended Solids  
 Iron Concentration  
 pH

**Description of Waste Treatment Facility:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pre-Treatment Measures  
 Recovery System  
 Expected Life of Treatment Basin  
 Schedule of Cleaning and/or abandonment

**Other:**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Precipitation/Volume Calculations/Diagram Attached  
 BMP Plan for Haul Roads  
 Measures for Minimizing Impacts to Adjacent Stream i.e., Buffer Strips, Berms, etc.  
 Methods for Minimizing Nonpoint Source Discharges  
 Facility Closure Plans  
 PE Rationale(s) For Alternate Standards, Designs or Plans

**IDENTIFY AND PROVIDE DETAILED EXPLANATION FOR ANY "N" OR "N/A" RESPONSE(S):**

No potable water supply
No prep plant
No alternative designs

XXI. INFORMATION

**Contact the Department prior to submittal with any questions or to request acceptable alternate content/format. Be advised that you are not authorized to commence regulated activity until this application can be processed, publicly noticed, and approval to proceed is received in writing from the Department.**

EPA Form(s) 1 and 2F need not be submitted unless specifically required by the Department. EPA Form(s) 2C and/or 2D are required to be submitted unless the applicant is eligible for a waiver and the Department grants a waiver.

Planned/proposed mining sites that are greater than 5 acres, that mine/process coal or metallic mineral/ore, or that have wet or chemical processing, must apply for and obtain coverage under and Individual NPDES Permit prior to commencement of any land disturbance. Such coverage may be requested via this ADEM Form 315.

The applicant is advised to contact:

- (1) The Alabama Surface Mining Commission (ASMC) if coal, coal fines, coal refuse, or other coal related materials are mined, transloaded, processed, *etc.*;
- (2) The Alabama Department of Industrial Relations (ADIR) if conducting non-coal mining operations;
- (3) The Alabama Historical Commission for requirements related to any potential historic or culturally significant sites;
- (4) The Alabama Department of Conservation and Natural Resources (ADCNR) for requirements related to potential presence of threatened/endangered species; and
- (5) The US Army Corps of Engineers, Mobile or Nashville Districts, if this project could cause fill to be placed in federal waters or could interfere with navigation.

The Department must be in receipt of a completed version of this form, including any supporting documentation, and the appropriate processing fee (including Greenfield Fee and Biomonitoring & Toxicity Limits fee(s), if applicable), prior to development of a draft NPDES permit. Send the completed form, supporting documentation, and the appropriate fees to:

Water Division  
Alabama Department of Environmental Management  
Post Office Box 301463  
Montgomery, Alabama 36130-1463  
Phone: (334) 271-7823  
Fax: (334) 279-3051  
h2omail@adem.state.al.us  
www.adem.alabama.gov

XXII. PROFESSIONAL ENGINEER (PE) CERTIFICATION

A detailed, comprehensive Pollution Abatement/Prevention Plan (PAP) must be prepared, signed, and certified by a professional engineer (PE), registered in the State of Alabama as follows:

"I certify on behalf of the applicant, that I have completed an evaluation of discharge alternatives (Item XVIII) for any proposed new or increased discharges of pollutant(s) to Tier 2 waters and reached the conclusions indicated. I certify under penalty of law that technical information and data contained in this application, and a comprehensive PAP Plan including any attached SPCC plan, maps, engineering designs, etc. acceptable to ADEM, for the prevention and minimization of all sources of pollution in stormwater and authorized related process wastewater runoff has been prepared under my supervision for this facility utilizing effective, good engineering and pollution control practices and in accordance with the provisions of ADEM Admin. Code Division 335-6, including Chapter 335-6-9 and Appendices A & B. If the PAP plan is properly implemented and maintained by the Permittee, discharges of pollutants can reasonably be expected to be effectively minimized to the maximum extent practicable and according to permit discharge limitations and other permit requirements. The applicant has been advised that appropriate pollution abatement/prevention facilities and structural & nonstructural management practices or Department approved equivalent management practices as detailed in the PAP plan must be fully implemented and regularly maintained as needed at the facility in accordance with good sediment, erosion, and other pollution control practices, permit requirements, and other ADEM requirements to ensure protection of groundwater and surface water quality."

Address Poly Inc.; 2135 University Blvd., Ste. A; Tuscaloosa, AL

PE Registration # 16938

Name and Title (type or print) R. A. (Rick) Deerman, PE

Phone Number (205) 752-4037

Signature 

Date Signed 08/25/2017

XXIII. RESPONSIBLE OFFICIAL SIGNATURE\*

This application must be signed by a Responsible Official of the applicant pursuant to ADEM Admin. Code Rule 335-6-6-.09 who has overall responsibility for the operation of the facility.

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


A comprehensive PAP Plan to prevent and minimize discharges of pollution to the maximum extent practicable has been prepared at my direction by a PE for this facility utilizing effective, good engineering and pollution control practices and in accordance with the provisions of ADEM Admin. Code Division 335-6, including Chapter 335-6-9 and Appendices A & B, and information contained in this application, including any attachments. I understand that regular inspections must be performed by, or under the direct supervision of, a PE and all appropriate pollution abatement/prevention facilities and structural & nonstructural management practices or Department approved equivalent management practices identified by the PE must be fully implemented prior to and concurrent with commencement of regulated activities and regularly maintained as needed at the facility in accordance with good sediment, erosion, and other pollution control practices and ADEM requirements. I understand that the PAP plan must be fully implemented and regularly maintained so that discharges of pollutants can reasonably be expected to be effectively minimized to the maximum extent practicable and according to permit discharge limitations and other requirements to ensure protection of groundwater and surface water quality. I understand that failure to fully implement and regularly maintain required management practices for the protection of groundwater and surface water quality may subject the Permittee to appropriate enforcement action.

I certify that this form has not been altered, and if copied or reproduced, is consistent in format and identical in content to the ADEM approved form.

I further certify that the discharges described in this application have been tested or evaluated for the presence of non-stormwater discharges and any non-mining associated beneficiation/process pollutants and wastewaters have been fully identified."

Name (type or print) William C. Morris

Official Title VP Operations

Signature 

Date Signed 8/28/17

\*335-6-6-.09 Signatories to Permit Applications and Reports.

- (1) The application for an NPDES permit shall be signed by a responsible official, as indicated below:
  - (a) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a manager assigned or delegated in accordance with corporate procedures, with such delegation submitted in writing if required by the Department, who is responsible for manufacturing, production, or operating facilities and is authorized to make management decisions which govern the operation of the regulated facility;
  - (b) In the case of a partnership, by a general partner;
  - (c) In the case of a sole proprietorship, by the proprietor; or
  - (d) In the case of a municipal, state, federal, or other public entity by either a principal executive officer, or ranking elected official.

Please print or type in the unshaded areas only.

FORM  
**2F**  
NPDES



U.S. Environmental Protection Agency  
Washington, DC 20460

### Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity

**Paperwork Reduction Act Notice**

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

**I. Outfall Location**

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

A. Outfall Number (/list)	B. Latitude			C. Longitude			D. Receiving Water (name)
001E	33.00	31.00	44.00	86.00	18.00	36.00	UT to Logan Martin Lake

**II. Improvements**


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

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req.	b. proj.
Not Applicable					

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

**III. Site Drainage Map**

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which received storm water discharges from the facility.

IV. Narrative Description of Pollutant Sources					
A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.					
Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
001E	0 acres	365 acres			
B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.					
None					
C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.					
Outfall Number	Treatment				List Codes from Table 2F-1
001E	Sedimentation Ponds				1-UR
V. Nonstormwater Discharges					
A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.					
Name and Official Title (type or print)		Signature		Date Signed	
William C. Morris, VP Operations				8/24/17	
B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.					
Not Applicable					
VI. Significant Leaks or Spills					
Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.					
None					



**VII. Discharge Information**

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.  
 Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

Yes (list all such pollutants below)  No (go to Section IX)

**VIII. Biological Toxicity Testing Data**

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

Yes (list all such pollutants below)  No (go to Section IX)

**IX. Contract Analysis Information**

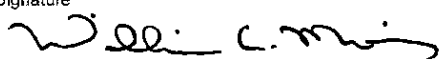
Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

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

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
Laboratory Resources and Solutions, Inc.	163 5th Street Ashville, Alabama 35953	(205) 683-6731	O&G, BOD5, COD, TSS, N, P, pH, Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, Zn, CN, Phenols

**X. Certification**

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

A. Name & Official Title (Type Or Print) William C. Morris, VP Operations	B. Area Code and Phone No. (205) 338-3366
C. Signature 	D. Date Signed 8/28/17

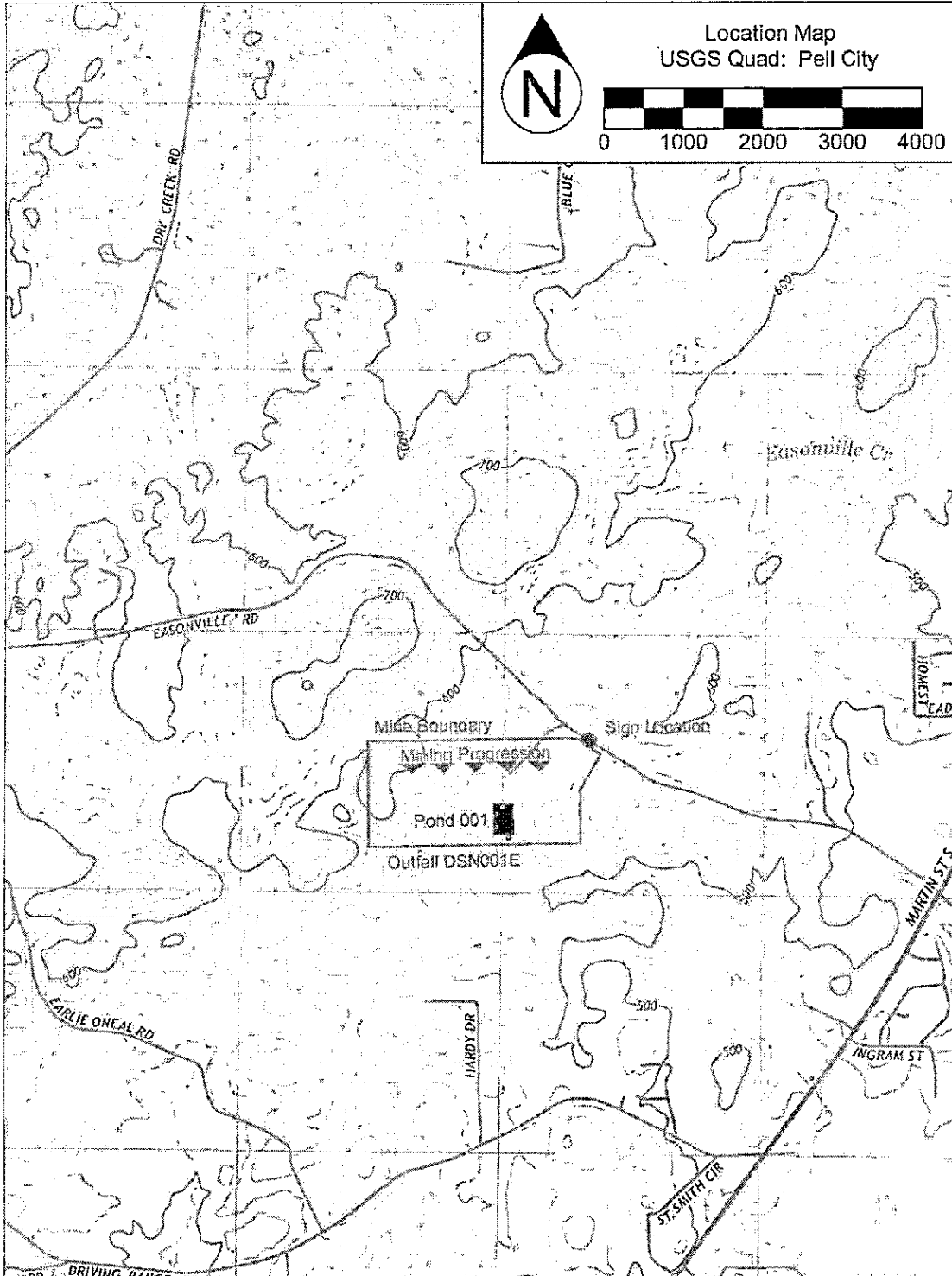




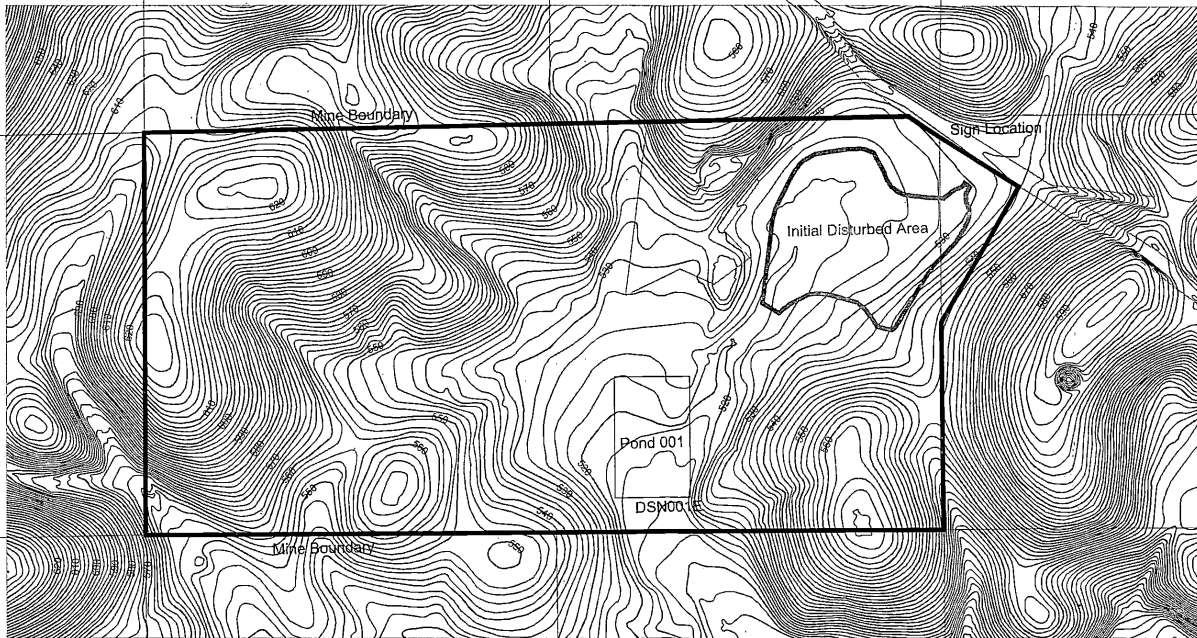
## **8. Drawings**

### **8.1. Introduction**

The drawings of the site are included in this chapter.



Wadsworth Pit Location Map.



SCALE: 1" = 300'

SHEET NO.  
**1**  
PROJECT NO.  
7917106

Riverside Refractories  
Wadsworth Pit Topographic Map

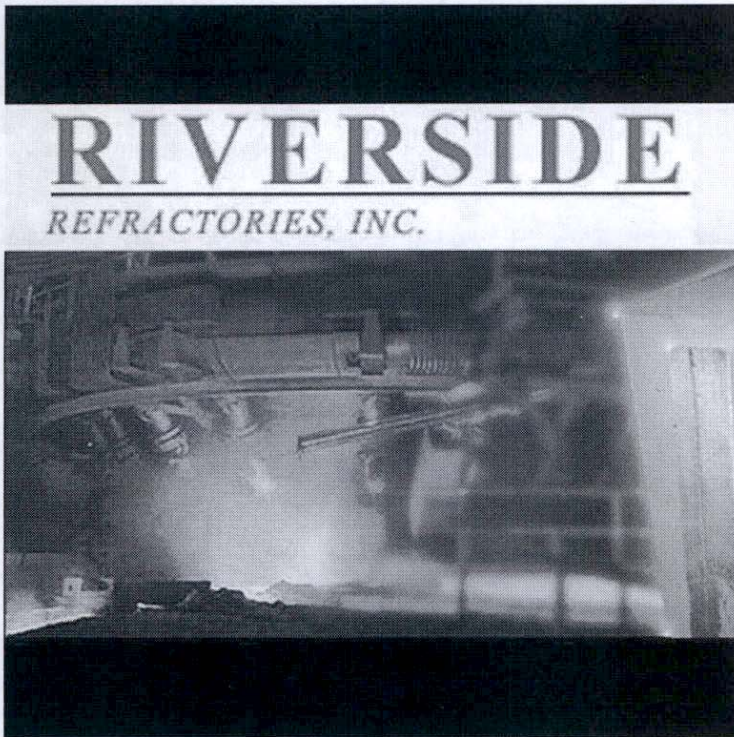
**POLY, INC.**  
1880 Woodloch Avenue  
Mableton, GA 30128  
162 Summit Lane  
Marietta, GA 30067  
800-242-1188  
WWW.POLY-INC.COM

DESIGNED BY: **Survey**  
ENGINEERING / SURVEYING / DESIGN / RECORD DRAWING IN.  
SCALE: 1" = 300' (H. & V.)  
PROJECT NO.: **7917106**  
DATE: **08/20/2007**





# MINING NPDES PERMIT APPLICATION FOR WADSWORTH PIT



Prepared for  
Riverside Refractories, Inc.



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### Engineer's Certification

---

I certify that this report was prepared by me and that I am a Professional Engineer in the State of Alabama.



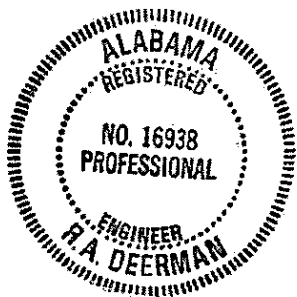
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R. A. Deerman, PE 16938

August 25, 2017

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Date





## Table of Contents

1. Introduction .....	5
1.1. Location .....	5
1.2. Work Description.....	5
1.3. Contents.....	5
1.4. Purpose .....	5
2. Site Description.....	8
2.1. Geologic Setting.....	8
2.2. Soil Types .....	8
2.3. Rainfall.....	8
2.4. Streams .....	8
2.5. Outfall 001 (DSN001E) .....	8
3. Sedimentation Controls.....	9
3.1. Introduction .....	9
3.2. Diversions .....	9
3.3. Sedimentation Ponds.....	9
4. Pollution Abatement and Prevention Plan.....	11
4.1. Introduction .....	11
4.2. Name and Address .....	11
4.3. General Information .....	11
4.4. Topographic Map.....	11
4.5. Diversions .....	11
4.6. Operations .....	12
4.7. Waste Characteristics .....	12
4.8. Waste Treatment Facilities.....	14
4.9. Haul Road Sediment Control .....	14
4.10. Stream Impact Minimization.....	14
4.11. Non-Point Impact Minimization .....	15
4.12. Construction Certification.....	15
4.13. Watershed Classification .....	15
5. Best Management Practices Plan .....	16
5.1. Introduction .....	16
5.2. Excerpts .....	16
5.3. Preservation of Vegetation.....	17
5.4. Dust Control .....	20
5.5. Mulching.....	24
5.6. Permanent Seeding .....	28
5.7. Sediment Trap .....	35
5.8. Sediment Barrier .....	38
5.9. Stormwater Detention Basin .....	45
5.10. Sediment Basin.....	50

5.11. Outlet Protection ..... 57

6. Spill Prevention Control and Countermeasures Plan ..... 60

    6.1. Description ..... 60

7. Forms ..... 61

    7.1. Introduction ..... 61

8. Drawings ..... 79

    8.1. Introduction ..... 79

## **1. Introduction**

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### **1.1. Location**

Riverside Refractories, Inc., located in St. Clair County south of Pell City, operates the Wadsworth Pit. The mine is located in the northern half of the northeastern quarter of Section 27 in Township 17S and Range 3E. Beginning at the intersection of US Highway 231 and Interstate 20, travel 5.9 miles south on US Highway 231, then 1.0 miles west on Easonville Road. The mine is near the intersection of Easonville Road and Max Smith Road. Figure 1-1 is a location map of the mine. Figure 1-2 is an aerial view of the mine vicinity.

### **1.2. Work Description**

Riverside Refractories is a provider of refractory products, both standard and custom. The Wadsworth Pit produces clay that is used in the production of refractory products.

### **1.3. Contents**

This document contains sedimentation control plans, a Pollution Abatement and Prevention (PAP) Plan, a Best Management Practices Plan, and a Spill Prevention Control and Countermeasures (SPCC) Plan.

### **1.4. Purpose**

The purpose of this document is to apply for reissuance of NPDES individual mining permit AL0078727 for Riverside Refractories, Inc. The permit will authorize discharges from mine de-watering activities and stormwater to an unnamed tributary of Logan Martin Lake, Coosa River. The permit will include one outfall, Outfall DSN001E, located between the proposed sedimentation pond and an unnamed tributary of Logan Martin Lake, Coosa River.

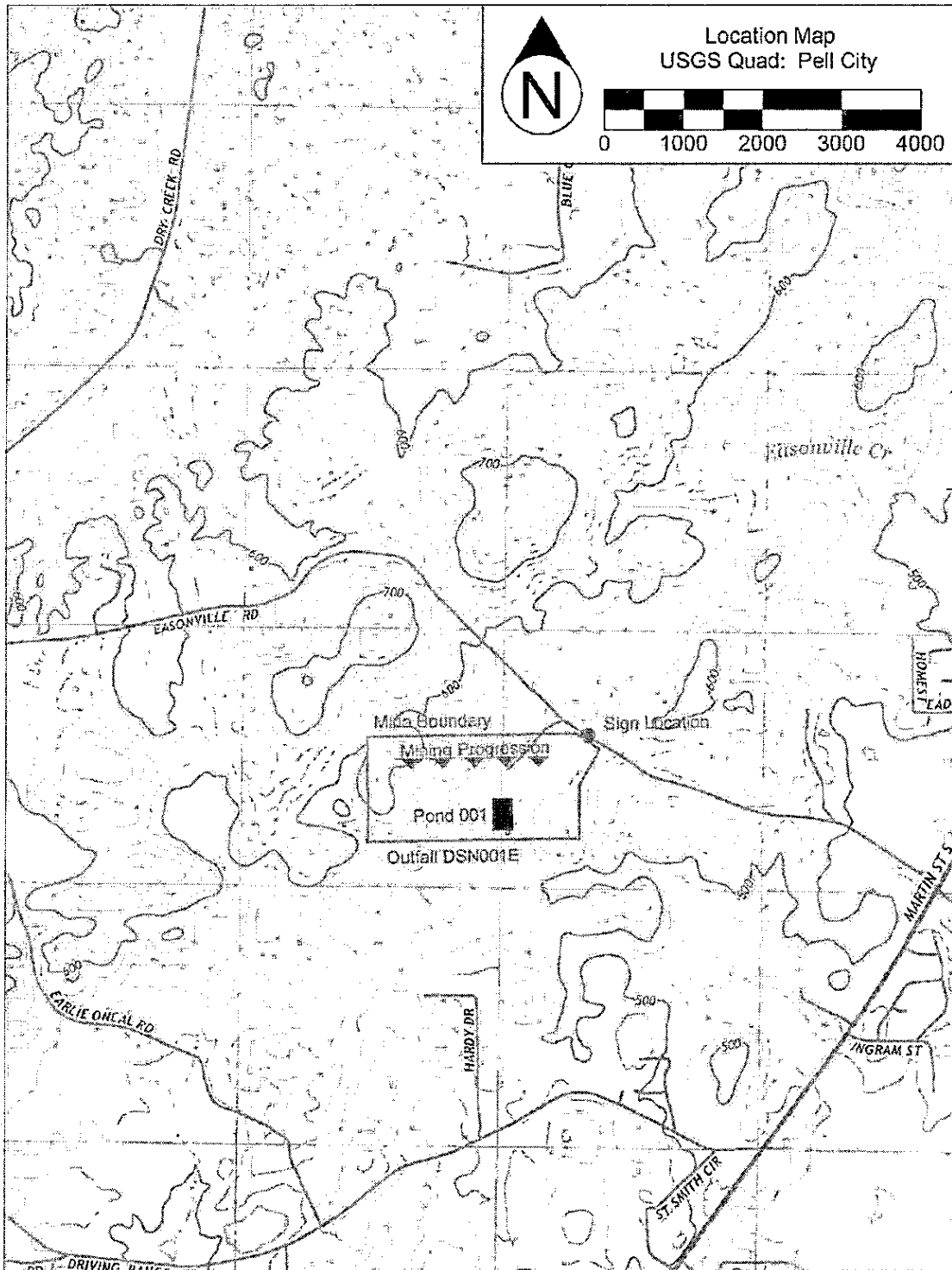


Figure 1-1. Location Map.

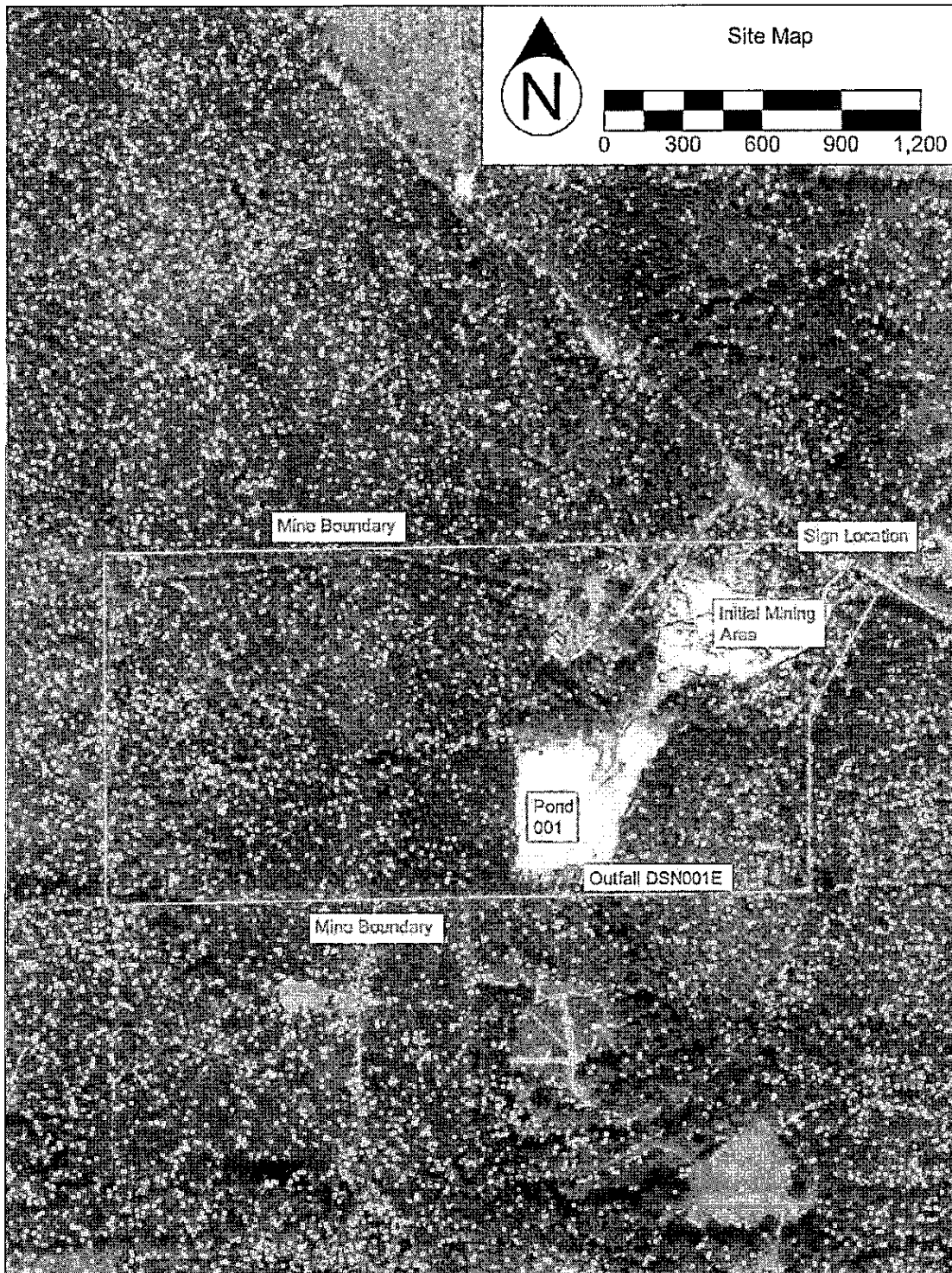


Figure 1-2. Location Map.

## **2. Site Description**

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### **2.1. Geologic Setting**

The mine site is in the Coosa Valley of the Valley and Ridge physiographic province. Under the mine site is the Knox Group consisting of light gray to light brown locally sandy dolomite, dolomitic limestone, and limestone characterized by abundant light colored chert.

### **2.2. Soil Types**

The soil at the mine site consists of loams, silty loam (Wax loam) to gravelly loam (Minvale cherty loam).

### **2.3. Rainfall**

The average rainfall is approximately 54 inches per year in St. Clair County. The rainfall depths of design storm events are from NOAA's Precipitation Frequency Data Server. At the mine site, the 1-yr/24-hr rainfall depth is 3.5 inches, the 2-yr/24-hr rainfall depth is 4.0 inches, and the 25-yr/24-hr rainfall depth is 6.9 inches.

### **2.4. Streams**

Although the USGS topographic map shows a blue line indicating a defined stream, there is no defined stream.

### **2.5. Outfall 001 (DSN001E)**

Outfall DSN001E includes discharges from mine de-watering activities and stormwater. The outfall is located along the southern boundary of the mine, between Pond 001 and an unnamed tributary of Logan Martin Lake (Coosa River). The geographic coordinates of the outfall are 33° 31' 44"N and 86° 18' 36"W. The total watershed area for DSN001E is 365 acres. The maximum disturbed area is 80 acres.

### **3. Sedimentation Controls**

---

#### **3.1. Introduction**

The pollution abatement facilities are designed and constructed to control the quality of discharges from mine de-watering activities and stormwater at Outfall DSN001E. Normal drainage patterns direct the discharges to the outfall.

#### **3.2. Diversions**

No diversions are proposed. The natural terrain tends to drain toward Pond 001.

#### **3.3. Sedimentation Ponds**

One sedimentation pond, Pond 001, is exists at Outfall DSN001E. An engineer previously designed and certified construction of the pond. The total watershed area for Pond 001 is 365 acres and the maximum disturbed area is 80 acres. Figure 3-1 presents plans for Pond 001.

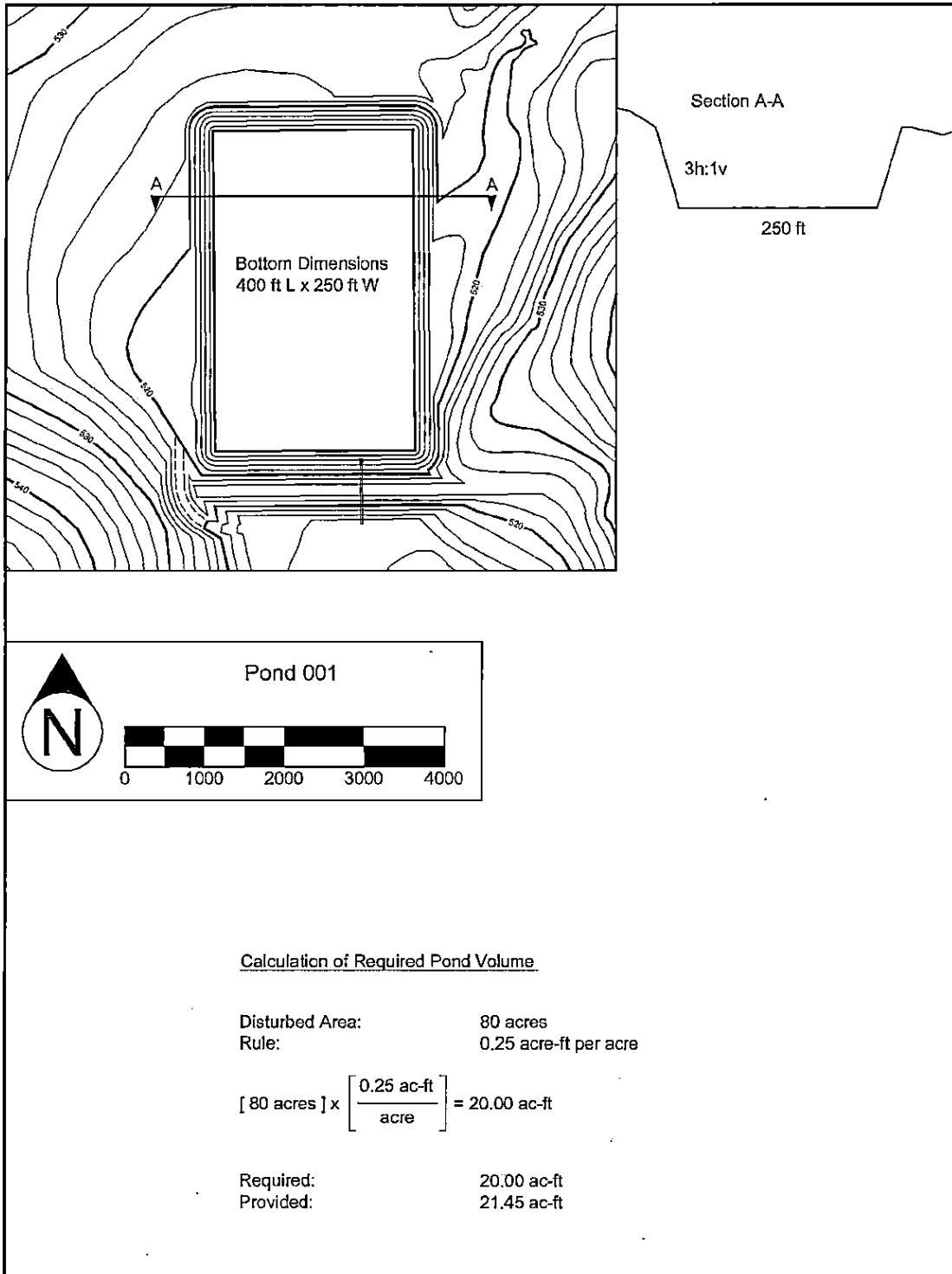


Figure 3-1. Design Information for Pond 001.



---

## 4. Pollution Abatement and Prevention Plan

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### 4.1. Introduction

The plan follows the regulatory outline with each section introduced by the applicable portion of Rule 335 6 9 .03 "Pollution Abatement and/or Prevention Plan".

### 4.2. Name and Address

335-6-9-.03(2)(a) name and address of the operator and a legal description of the area to be mined.

The operator is Riverside Refractories, Inc. and the mailing address is as follows:

Riverside Refractories, Inc.  
201 Truss Ferry Road  
Pell City, AL 35128

The telephone number for Riverside Refractories, Inc. is (205) 338-3366 and the contact person is Parker Morris. The mine is in St. Clair County, Alabama in the northern half of the northeastern quarter of Section 27 in Township 17S and Range 3E.

### 4.3. General Information

335-6-9-.03(2)(b) general information, including name and affiliation of company, number of employees, product(s) to be mined, hours of operation and water supply and disposition.

The operator is Riverside Refractories, Inc. The parent corporation is Riverside Clay Company. There are 4 minesite employees plus 4 others elsewhere. Operation is 8 hours per day, 5 days per week. Riverside Refractories, Inc. mines clay to use in the production of refractory products, both standard and custom. Water from mine dewatering activities and stormwater is treated in Pond 001 and discharged.

### 4.4. Topographic Map

335-6-9-.03(2)(c) topographic map showing location of mine, preparation plant, settling basin and all waste water discharge points.

Figure 1-1 is a topographic map which shows the location of the mine, the settling basin, and the water discharge point. Material taken from the mine will be transported elsewhere for further processing. There is no preparation plant at the Wadsworth Pit.

### 4.5. Diversions

335-6-9-.03(2)(d) method and plan for diverting surface water runoff from operational areas and mineral and refuse storage piles.

No diversions are proposed. The natural terrain tends to drain toward the site of the Pond 001.

#### 4.6. Operations

335-6-9-.03(2)(e) narrative account of operation(s) explaining and/or defining raw materials, processes and products. Blockline or schematic diagrams indicating points of waste origin and its collection and disposal shall be included.

Riverside Refractories, Inc. mines clay from the Wadsworth Pit. Material is removed by heavy equipment. Material taken from the mine is transported elsewhere for further processing. Riverside Refractories, Inc. uses the clay in the production of refractory products, both standard and custom.

Waste products generated as a result of the mining operation include sediments from disturbed areas, transported by rainfall runoff or pumped discharges. The sediments originate in the mine, spoil areas, or other disturbed areas. The sediments are transported by rainfall runoff or by pumping to the sedimentation pond. The sediments are captured by detaining the water in the sedimentation pond. When necessary, the accumulated sediments will be removed from the sedimentation pond. A schematic is given in Figure 4-1.

#### 4.7. Waste Characteristics

335-6-9-.03(2)(f) quantity and characteristics of waste after treatment with respect to flow, suspended solids, total iron, and pH.

Assuming an average annual rainfall of 54 inches and an average runoff coefficient of 50%, runoff should be approximately 2,000 gallons per day per acre of watershed. Using the factor, the average daily flow from DSN001E is 730,000 gallons per day (gpd). The suspended solids are approximately 15 mg/L, the total iron is approximately 0.3 mg/L, and the pH is approximately 7.0.

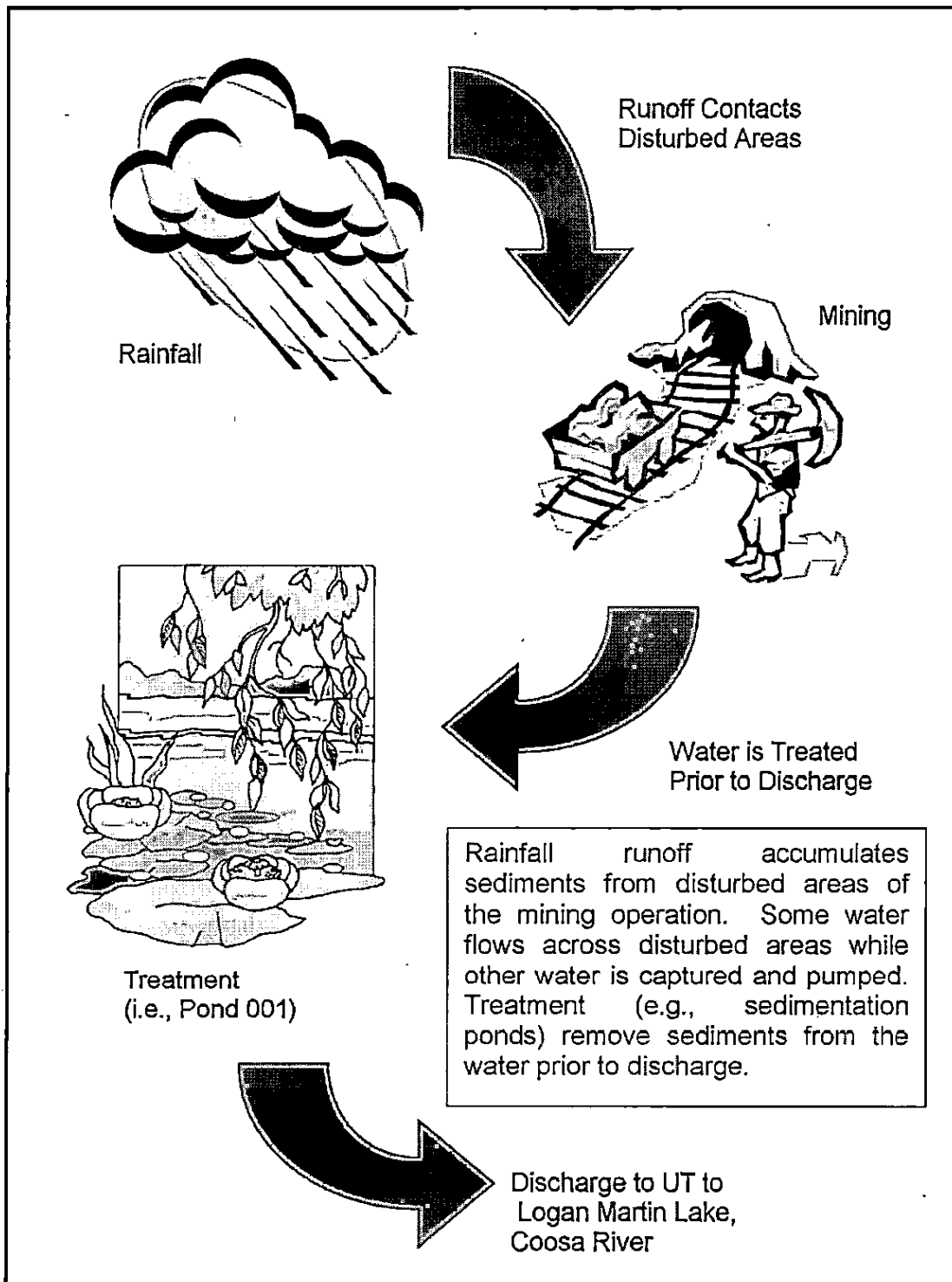


Figure 4-1. Waste Schematic.

#### 4.8. Waste Treatment Facilities

335-6-9-.03(2)(g) description of waste treatment facilities, pretreatment measures and recovery systems including expected life of sedimentation basins and schedules for cleaning or proper abandonment of such basins. If earthen sedimentation basins are a portion of the treatment scheme, plans for the construction of these facilities should meet minimum construction criteria as found in the Guidelines in Appendix A.

The waste treatment facilities consist of the sedimentation controls, especially the sedimentation pond (Pond 001), described in Chapter 3. The plans for these facilities are also included in Chapter 3. The construction of the sedimentation pond meets the minimum construction criteria as found in the ADEM Guidelines. The expected life of the sedimentation basin is the life of the mine and the sedimentation basin is scheduled to be cleaned out when sediment accumulation is 60% of design capacity. The pond will be maintained for the life of the permit.

#### 4.9. Haul Road Sediment Control

335-6-9-.03(2)(h) a plan to eliminate or minimize sediment and other pollutants from haul roads must be included and should meet minimum design criteria as established by the Guidelines in Appendix B.

The haul roads meet the specifications listed below:

- 1) No sustained grade will exceed 10 percent;
- 2) The maximum grade will not exceed 15 percent for 300 feet. There will be no more than 300 feet of 15 percent maximum grade for each 1000 feet of road constructed;
- 3) Haul roads within the mining area will be constructed so that runoff from the road is routed to the sedimentation basin;
- 4) Outer slopes for haul roads out of the permitted area will not be steeper than 2:1 and will be lined with natural vegetation to avoid erosion;
- 5) Roads will be surfaced with either slag, chert, crushed limestone, crushed sandrock, or red rock, other than temporary roads for limited access; and
- 6) There will be no creek crossings.

#### 4.10. Stream Impact Minimization

335-6-9-.03(2)(I) location of all streams in or adjacent to the mining area and those measures which will be taken to minimize the impact on water quality when the mining operation is located in close proximity to such streams. Such measures may include but not be limited to setbacks, buffer strips, or screens.

The mining operation drains to an unnamed tributary of Logan Martin Lake (Coosa River). Downstream, the unnamed tributary enters Logan Martin Lake. The sedimentation controls, especially the sedimentation pond (Pond 001), described in Chapter 3 are intended to minimize any negative stream impacts.

#### **4.11. Non-Point Impact Minimization**

335-6-9-.03(2)(j) those measures to be employed to minimize the effect of any non point source pollution which may be generated as a result of the surface mining operation.

The surface runoff from mined areas will drain to the sedimentation pond. Any negative impacts from non-point discharges will be minimized using best management practices.

#### **4.12. Construction Certification**

335-6-9-.03(2)(k) all pollution abatement facilities must be certified by the design engineer as being constructed in accordance with the approved plans.

The facilities at Outfall DSN001E have been previously certified by an engineer.

#### **4.13. Watershed Classification**

335-6-9-.03(2)(l) the applicant shall specify if the proposed mining operation is to be constructed in the watershed of an impoundment classified as a public water supply or a direct tributary thereon.

The Coosa River from Logan Martin Dam (downstream) to Broken Arrow Creek (upstream) is classified as swimming (S) and fish and wildlife (F&W). Another portion of Logan Martin Lake is classified as a public water supply, but not the unnamed tributary which receives the outfall discharge nor the portion of Logan Martin Lake to which the tributary drains. The unnamed tributary of Logan Martin Lake, Coosa River, which receives the outfall discharge is classified as fish and wildlife (F&W).

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## 5. Best Management Practices Plan

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### 5.1. Introduction

In response to the Water Quality Act of 1987, the Environmental Protection Agency (EPA) expanded the National Pollutant Discharge Elimination System (NPDES). The expanded permit system is for many types of discharges including industrial storm water discharges. The EPA's storm water program emphasizes pollution prevention and reflects a heavy reliance on Best Management Practices (BMP) Plans to reduce pollutant loadings and improve water quality. BMP's are defined as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMP's also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage.

Previous chapters presented sediment control structures along with the Pollution Abatement and Prevention Plan to minimize discharges of sediments and other pollutants. Other control features could also be helpful. For example, upstream sediment traps could decrease the volume of sediment collected in Pond 001, increasing its life. This comprehensive BMP Plan has been prepared for the prevention and minimization of all sources of pollution in discharges from mine de-watering activities and stormwater for this site utilizing effective BMP's from the *Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management On Constructions Sites And Urban Areas*, by the Alabama Soil and Water Conservation Committee.

### 5.2. Excerpts

Several excerpts from the *Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management On Constructions Sites And Urban Areas*, are included in the end of this chapter. The excerpts describe vegetation preservation, dust control (including mulching and permanent seeding), sediment traps (including straw bale traps, sediment barriers, and temporary excavations), and the sedimentation pond (including outlet protection). If other portions of the Handbook prove useful they may be incorporated.

## Preservation of Vegetation (PV)



### Practice Description

Preservation of vegetation is the avoidance of an area during land disturbing and construction activity to prevent mechanical and other injury to desirable plants in the planned landscape. The practice provides erosion and sediment control and is applicable where vegetative cover is desired and the existing plant community is compatible with the planned landscape.

### Typical Components of the Practice

- Mark Plant Area for Retention
- Plant Protection
- Treating Damaged Plants
- Verification of Practice

### Installation

Preservation requirements should be designed by a qualified design professional and plans should be made available to field personnel prior to start of construction

### ***Mark Plant Area for Retention***

Clearly indicate the areas to be avoided by marking with tape (flagging), barricade netting or other appropriate means.

### ***Plant Protection***

Protect plants that are identified for preservation from compaction by equipment, cutting and filling operations, trenching, and tunneling.

### ***Treating Damaged Plants***

Treat damaged trees and shrubs as soon after damage as practical. Treatment may include shaping a wound for proper healing, pruning of jagged roots, pruning of damaged limbs and fertilization to enhance growth.

### ***Verification of Practice***

Check to determine that specifications are met as the areas are identified for retention, as the plants are protected during construction and that damaged plants are treated or replaced.

## **Common Problems**

*Consult with a qualified design professional if any of the following occur:*

- Soil compaction appears to be retarding plant growth or affecting plant health.
- Damage to plants appears to be severe and life threatening.
- Plants appear of poor quality and are undesirable for retention.

*Problems during construction that require remedial actions:*

- Erosion – eroded areas should be vegetated to grass or a suitable ground cover.
- Severely damaged trees, shrubs or vines should be replaced.

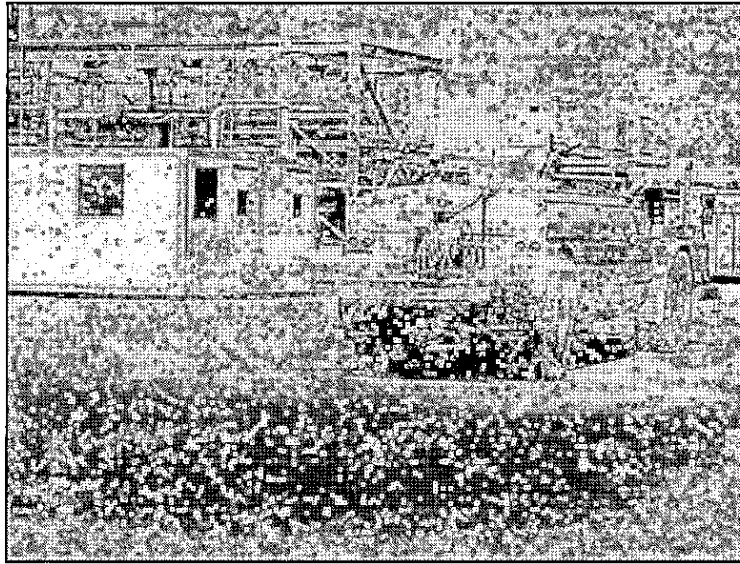
## **Maintenance**

Enhance and maintain plant growth and health according to the maintenance plan. This may involve applying fertilizer, spreading mulch and pruning trees and shrubs.



Replace dead plants as needed to maintain desired landscape cover. Additional information about plantings is found in the following practices: Permanent Seeding: Shrub, Vine and Groundcover Planting: and Tree Planting on Disturbed Areas.

## Dust Control (DC)



### Practice Description

Dust control includes a wide range of techniques that prevent or reduce movement of wind-borne soil particles (dust) during land disturbing activities. This practice applies to construction routes and other disturbed areas where on-site and off-site damage or hazards may occur if dust is not controlled.

### Typical Components of the Practice

- Scheduling
- Erosion Control
- Other Potential Components
  - Sprinkling
  - Barriers
  - Spray-on Adhesives
  - Stone
  - Street Cleaning
- Installation Verification

## **Construction**

Dust control requirements should be designed by a qualified design professional and plans and specifications should be made available to field personnel prior to start of construction. Whenever possible, leave undisturbed vegetated buffer areas between graded areas.

### ***Scheduling***

Schedule construction operations so that the smallest area is disturbed at any one time.

### ***Erosion Control***

Install surface stabilization measures (vegetative cover or mulch) immediately after completing the land grading.

### ***Vegetative Cover***

See Temporary or Permanent Seeding practice for guidance. Vegetation provides the most practical method of dust control for areas not subject to traffic.

### ***Mulching***

See Mulching practice for guidance on applying mulch and tackifiers or binders. Mulching is not recommended for areas with heavy traffic.

### ***Sprinkling***

Sprinkle the site with water until the surface is moist. This practice is effective for dust control on haul roads or other traffic routes, but constant repetition is required for effective control.

### ***Barriers***

Install board fences perpendicular to the prevailing winds at intervals (distance) of 15 times the barrier height.

### ***Calcium Chloride***

Apply with a mechanical spreader at a rate that keeps the surface moist.

*Consult with a qualified design professional to determine if a permit is required.*

### **Spray-on Adhesives**

Spray adhesives according to the design plan.

*Consult with a qualified design professional if spray-on adhesives are specified. A permit may be needed.*

In the absence of a detailed plan, use manufacturers' recommendations. Table DC-1 presents examples of spray-on adhesives that have been used successfully for dust control.

Table DC-1 Application Rates for Spray-on Adhesives Used in Dust Control

Adhesive	Water Dilution (adhesive: water)	Type of Nozzle	Application Rate (gallons/acre)
Anionic Asphalt Emulsion	7:1	Coarse	1200
Latex Emulsion	12.5:1	Fine	235
Resin in Water	4:1	Fine	300
Acrylic Emulsion (Non-traffic)	7:1	Coarse	450
Non-Acrylic Emulsion (Traffic)	3.5:1	Coarse	350

Source: Virginia Erosion and Sediment Control Handbook, 1993

*Consult with a qualified design professional if spray-on adhesives are specified. A permit may be needed.*

### **Stone**

Stone should be placed to the width and thickness specified in the design.

### **Street Cleaning**

Use a street sweeper to remove the source materials.

### **Construction Verification**

Check installation of product(s) to verify use of proper product and quantity.

### **Common Problems**

Drought conditions result in dry soils and increase in dust problems—use greater precautions during these periods.

## Maintenance

Check construction site during vehicular traffic or windy conditions to see if measures are working adequately. Maintain dust control measures continuously throughout dry weather periods, until all disturbed areas have been stabilized.

## Mulching (MU)



### Practice Description

Mulching is the application of plant residues such as straw or other suitable fibrous materials to the soil surface. Mulch protects the soil surface from the erosive force of raindrop impact and reduces the velocity of overland flow. It helps seedlings germinate and grow by conserving moisture, protecting against temperature extremes and controlling weeds. Mulch also maintains the infiltration capacity of the soil. Mulch can be applied to seeded areas to help establish plant cover. It can also be used in unseeded areas to protect against erosion over the winter or until final grading and shaping can be accomplished except in areas of concentrated flow.

### Typical Components of the Practice

- Site Preparation
- Application of Material
- Verification of Installation

### Installation

Mulching should be designed by a qualified design professional and plans and specifications should be made available to field personnel prior to start of construction.

### **Site Preparation**

Divert runoff water from areas above the site that will be mulched.

Remove stumps, roots and other debris from the construction area.

Grade area as needed to permit the use of equipment for seeding, mulching and maintenance. Shape area so that it is relatively smooth.

If the area will be seeded, follow seeding specifications in the design plan and apply mulch immediately after seeding.

### **Application of Material**

Spread straw mulch, preferably cereal grain, uniformly over the area with a power blower, hydroseeder or by hand. Mulch should be uniformly spread and not clumped in piles. In a seeded area, about 25% of the ground surface should be visible after mulching. It is important when mulching a seeded area that an excessive quantity of straw is not applied – too much mulch will retard or reduce the future stand. When mulch is used for erosion control without seeding, 100% of the soil surface should be covered.

Hydraulic Erosion Control Products (HECPs) as defined by the Erosion Control Technology Council (ECTC) are also used for mulch and should be applied with the appropriate equipment and at the recommended or specified rates.

Apply mulches at the rates shown in the plan or in Table MU-1 if there is not a plan.

Anchor straw or wood cellulose mulch by one of the following methods:

- Crimp with a mulch anchoring tool, as near on the contour as practical, to punch the straw into the soil.
- Tack with a liquid tackifier designed to hold mulch in place. Use suitable spray equipment and follow manufacturer's recommendations.
- In more erosive areas, cover with netting, using a degradable natural or synthetic mesh. The netting should be anchored according to manufacturer's specifications (see Erosion Control Blanket practice).
- On steep slopes and other areas needing a higher degree of protection, use heavy natural nets without additional mulch, synthetic netting with additional mulch or erosion control mats/blankets. These areas include grassed waterways, swales and diversion channels.
- Install netting and mats/blankets according to manufacturer's specifications making sure materials are properly anchored (see Erosion Control Blanket).

Table MU-1 Mulching Materials and Application Rates

Material	Rate Per Acre and (Per 1000 ft. <sup>2</sup> )	Notes
Straw (with Seed)	1 ½ - 2 tons (70 lbs - 90 lbs)	Spread by hand or machine; anchor when subject to blowing.
Straw Alone (no seed)	2 ½ - 3 tons (115 lbs - 160 lbs)	Spread by hand or machine; anchor when subject to blowing.
Wood Chips	5-6 tons (225 lbs - 270 lbs)	Treat with 12 lbs. nitrogen/ton.
Bark	35 cubic yards (0.8 cubic yard)	Can apply with mulch blower.
Pine Straw	1-2 tons (45 lbs - 90 lbs)	Spread by hand or machine; will not blow like straw.
Peanut Hulls	10-20 tons (450 lbs - 900 lbs)	Will wash off slopes. Treat with 12 lbs. nitrogen/ton.
HECPs	0.75 – 2.25 tons (35 lbs – 103 lbs)	Refer to ECTC or Manufacturer's Specifications.

### ***Verification of Installation***

Check materials and installation for compliance with specifications.

### **Common Problems**

*Consult with qualified design professional if either of the following occurs:*

- Variations in topography on site indicate the mulching materials will not function as intended; changes in plan may be needed.
- Design specifications for mulching materials or seeding requirements cannot be met; substitution may be required. Unapproved substitutions could result in erosion or seeding failure.

*Problems that require remedial actions:*

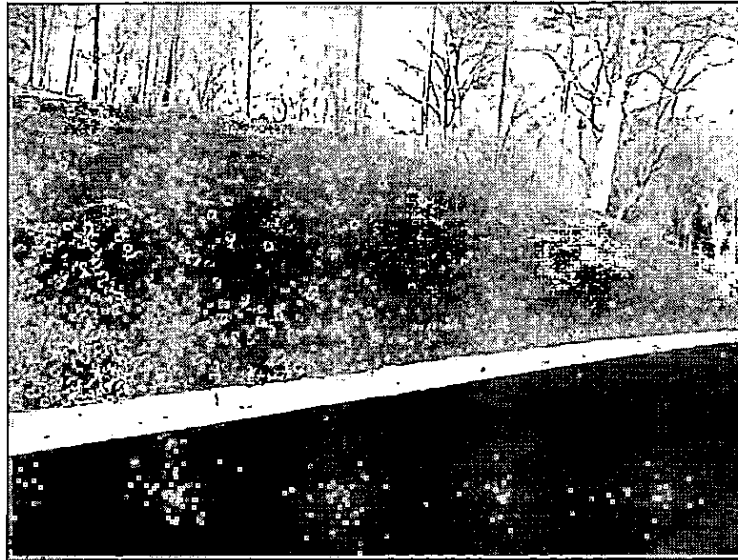
- Erosion, washout and poor plant establishment; repair eroded surface, reseed, remulch and anchor mulch.
- Mulch is lost to wind or stormwater runoff; reapply mulch and anchor appropriately by crimping, netting or tacking.



## Maintenance

Inspect all mulched areas periodically and after rainstorms for erosion and damage to the mulch. Repair promptly and restore to original condition. Continue inspections until vegetation is well established. Keep mower height high if plastic netting is used to prevent netting from wrapping around mower blades or shaft.

## Permanent Seeding (PS)



### Practice Description

Permanent seeding is the establishment of perennial vegetation on disturbed areas from seed. Permanent vegetation provides economical long-term erosion control and helps prevent sediment from leaving the site. This practice is used when vegetation is desired and appropriate to permanently stabilize the soil.

### Typical Components of the Practice

- Scheduling
- Seedbed Preparation
- Applying Soil Amendments (lime and fertilizer)
- Planting
- Mulching or Installation of Erosion Control Blanket
- Inspection

### Installation

Prior to start of construction, plant materials, seeding rates and planting dates should be specified by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the installation process.

Permanent seeding should be made during the specified planting period whenever possible. When sites are only available for planting outside of the recommended planting period, either an out-of-season permanent seeding, a temporary seeding, mulching or chemical stabilization should be applied. If lime and fertilizer application rates are not specified, take soil samples during final grading from the top 6" in each area to be seeded. Submit samples to a soil testing laboratory for lime and fertilizer recommendations.

### ***Scheduling***

The schedule for work at the site should consider the recommended planting period and whenever practical the site work should accommodate seeding during the recommended planting period.

### ***Seedbed Preparation***

Grade and loosen the soil to a smooth firm surface to enhance rooting of seedlings and reduce rill erosion. Break up large clods and loosen compacted, hard or crusted soil surfaces with a disk, ripper, chisel, harrow or other tillage equipment. Avoid preparing the seedbed under excessively wet conditions to minimize compaction. Operate the equipment on the contour.

For either broadcast seeding or drill seeding, the tillage, as a minimum, should adequately loosen the soil to a depth of at least 6", alleviate compaction, and smooth and firm the soil for the proper placement of seed.

For no-till drilling, the soil surface should not be loosened unless the site has surface compaction and if compaction exists, special care with soil loosening will be needed to retain the desired residue on the soil surface.

Incorporate lime and fertilizer to a depth of at least 6" with a disk or rotary tiller on slopes of up to 3:1. On steeper slopes, lime and fertilizer may be applied to the surface without incorporation. Lime and fertilizer may be applied through hydroseeding equipment; however, fertilizer should not be added to the seed mixture during hydroseeding. Liming materials such as liquid lime may be added with the seed mixture.

### ***Liming***

Follow the design plan or soil test recommendation. If a plan or soil test is not available, use 2 tons/acre of ground agricultural lime on clayey soils (approximately 90 lbs/acre) and 1 ton/acre on sandy soils (approximately 45 lbs/acre). Exception to situation without a design or a soil test: If the cover is tall fescue and clover, use 2 tons of agricultural lime (approximately 135 lbs/1000 ft<sup>2</sup>) on both clayey and sandy soils.

Spread the specified amount of lime and incorporate into the top 6" of soil after applying fertilizer.

## **Fertilizing**

Apply a complete fertilizer at rates specified in the design plan or as recommended by soil tests. In the absence of soil tests, use the following as a guide:

### **Grass Alone**

Use 8-24-24 or equivalent – apply 400 lbs/acre (approximately 9 lbs/1000 ft<sup>2</sup>) starting. When vegetation has emerged to a stand and is growing, 30 lbs/acre (approximately 0.8 lbs/10000 ft<sup>2</sup>) of additional nitrogen fertilizer should be applied.

### **Grass-Legume Mixture**

Use 5-10-10 or equivalent – apply 800 - 1200 lbs/acre (approximately 18 - 27 lbs/1000 ft<sup>2</sup>).

### **Legume Alone**

Use 0-20-20 or equivalent – apply 400 - 600 lbs/acre (approximately 9 - 14 lbs/1000 ft<sup>2</sup>) at planting.

*Note: Fertilizer can be blended to meet exact fertilizer recommendations. Take soil test recommendations to local fertilizer dealer for bulk fertilizer blends. This may be more economical than bagged fertilizer.*

## **Planting**

Plant the species specified in the plan at the rate and depth specified. In the absence of plans and specifications, plant species and seeding rates may be selected by qualified persons using Figure PS-1 and Table PS-1.

Apply seed uniformly using a cyclone seeder, drop-type spreader, drill, cultipacker seeder or hydroseeder.

When using a drill seeder, plant grasses and legumes ¼" to ½" deep. Calibrate equipment in the field.

When planting by methods other than a drill seeder, cover seed by raking, or dragging a chain, brush or mat. Then firm the soil lightly with a roller. Seed can also be covered with hydro-mulched wood fiber and tackifier. Legumes require inoculation with nitrogen-fixing bacteria to ensure good growth. Purchase inoculum specific for the seed and mix with seed prior to planting.

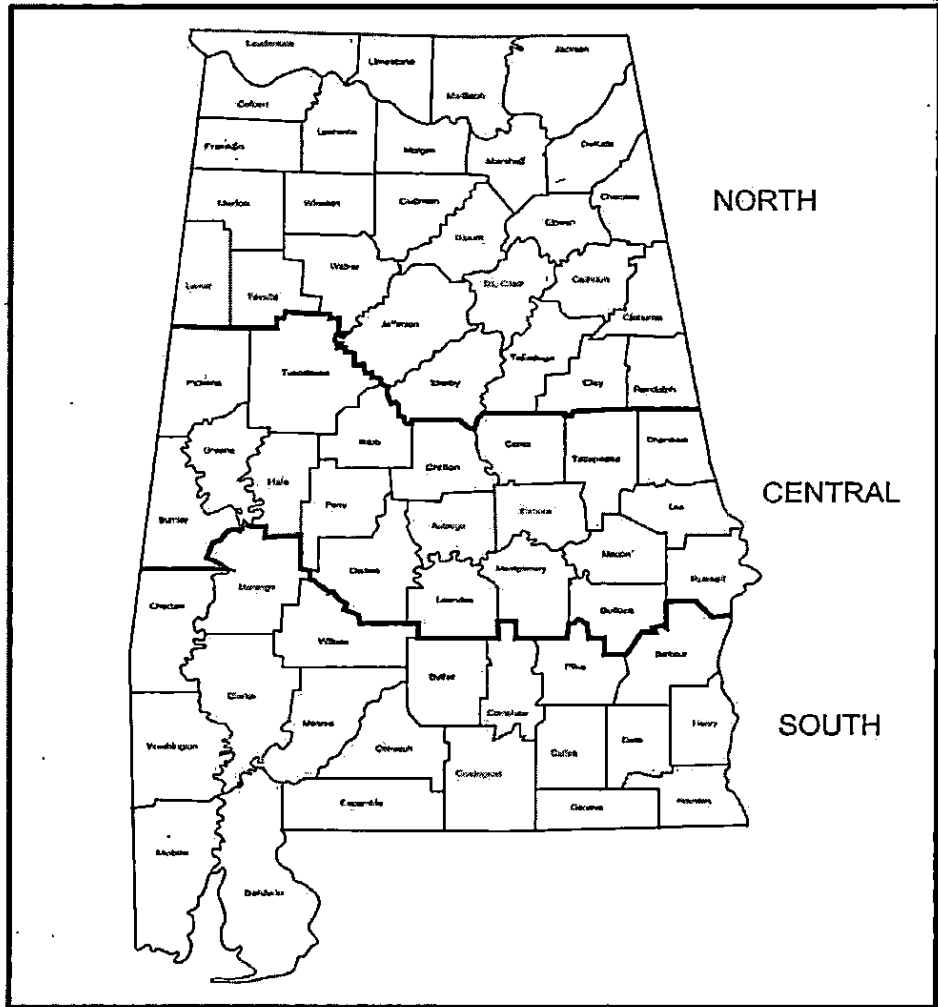


Figure PS-1 Geographical Areas for Species Adaptation

*Note: Site conditions related to soils and aspect in counties adjacent to or close to county boundaries may justify adjustments in adaptable areas by qualified design professionals.*

**Mulching**

Mulching is extremely important for successful seeding. Whether the mulching material is straw or a manufactured product, the material needs to be applied properly. Uniformly spread organic mulches by hand or with a mulch blower at a rate which provides about 75% ground cover. Spread HECs utilizing appropriate equipment and at rates as specified in the plan or by the manufacturer. Caution, an over-application of wheat straw will reduce stand success – do not over-apply wheat straw when mulching a seeding! (See Mulching practice for more details).

Table PS-1 Commonly used Plants for Permanent Cover with Seeding Rates and Dates

Species	Seeding Rates/Ac PLS	North	Central		South
			Seeding Dates		
Bahiagrass, Pensacola	40 lbs	--	Mar 1-Jul y 1	Feb 1-Nov 1	
Bermudagrass, Common	10 lbs	Apr 1-July 1	Mar 15-July 15	Mar 1-July 15	
Bahiagrass, Pensacola Bermudagrass, Common	30 lbs 5 lbs	--	Mar 1-July 1	Mar 1-July 15	
Bermudagrass, Hybrid (Lawn Types)	Solid Sod	Anytime	Anytime	Anytime	
Bermudagrass, Hybrid (Lawn Types)	Sprigs 1/sq ft	Mar 1-Aug 1	Mar 1-Aug 1	Feb 15 - Sep 1	
Fescue, Tall	40-50 lbs	Sep 1-Nov 1	Sep 1-Nov 1	--	
Sericea	40-60 lbs	Mar 15-July 15	Mar 1-July 15	Feb 15 -July 15	
Sericea & Common Bermudagrass	40 lbs 10 lbs	Mar 15 -July 15	Mar 1-July 15	Feb 15-July 15	
Switchgrass, Alamo	4 lbs	Apr 1-Jun 15	Mar 15-Jun 15	Mar 15-June 15	

PLS means pure live seed and is used to adjust seeding rates. For example, to plant 10 lbs PLS of a species with germination of 80% and purity of 90%,  $PLS = 0.8 \times 0.9 = 72\%$ .  $10 \text{ lbs PLS} = 10 / 0.72 = 13.9 \text{ lbs}$  of the species, to be planted.

### Hydroseeding

Surface roughening is particularly important when hydroseeding, as roughened slope will provide some natural coverage for lime, fertilizer, and seed. The surface should not be compacted or smooth. Smooth seedbed preparation is not necessary for hydroseeding operations; large clods, stones, and irregularities provide cavities in which seeds can lodge.

Mix seed, inoculant if required, and a seed carrier with water and apply as a slurry uniformly over the area to be treated. The seed carrier should be a cellulose fiber, natural wood fiber or cane fiber mulch material which is dyed an appropriate color to facilitate uniform application of seed. Use the correct legume inoculant at 4 times the recommended rate when adding inoculant to a hydroseeder slurry. The mixture should be applied within one hour after mixing to reduce damage to seed.

Fertilizer should not be mixed with the seed-inoculant mixture because fertilizer salts may damage seed and reduce germination and seedling vigor.

Fertilizer may be applied with a hydroseeder as a separate operation after seedlings are established.

Agricultural lime is usually applied as a separate operation and spread in dry form. It is not normally applied with a hydraulic seeder because it is abrasive and, also, may clog the system. On the other hand, liquid lime is applied with a hydraulic seeder but because of cost is used primarily to provide quick action for benefit of plants during their seedling stage with the bulk of liming needs to be provided by agricultural lime. Dry lime may be applied with the fertilizer mixture.

### ***Installation Verification***

Check materials and installation for compliance with specifications during installation of products.

## **Common Problems**

*Consult with a qualified design professional if the following occurs:*

- Design specifications for seed variety, seeding dates or mulching cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.
- Seeding at the wrong time of the year results in an inadequate stand. Reseed according to specifications of a qualified design professional (see recommendations under Maintenance)
- Inadequate mulching results in an inadequate stand, bare spots or eroded areas-prepare seedbed, reseed, cover seed evenly and tack or tie down mulch, especially on slopes, ridges and in channels (see recommendations under Maintenance).

## **Maintenance**

Generally, a stand of vegetation cannot be determined to be fully established until vegetative cover has been maintained for 1 year from planting.

### ***Reseeding***

Inspect seedlings monthly for stand survival and vigor. Also, inspect the site for erosion.

If stand is inadequate identify the cause of failure (choice of plant materials, lime and fertilizer quantities, poor seedbed preparation or weather) and take corrective action. If vegetation fails to grow, have the soil tested to determine whether pH is in the correct range or nutrient deficiency is a problem.

Stand conditions, particularly the coverage, will determine the extent of remedial actions such as seedbed preparation and reseeding. A qualified design professional should be consulted to advise on remedial actions. Consider drill seeding where possible.

Eroded areas should be addressed appropriately by filling and/or smoothing, and reapplication of lime, fertilizer, seed and mulch.

### ***Fertilizing***

Satisfactory establishment may require fertilizing the stand in the second growing season. Follow soil test recommendations or the specifications provided to establish and maintain the planting. After the second year, fertilizing is often needed annually or periodically to maintain a healthy stand and cover sufficient for erosion control.

### ***Mowing***

Mow vegetation on structural practices such as embankments and grass-lined channels to prevent woody plants from invading.

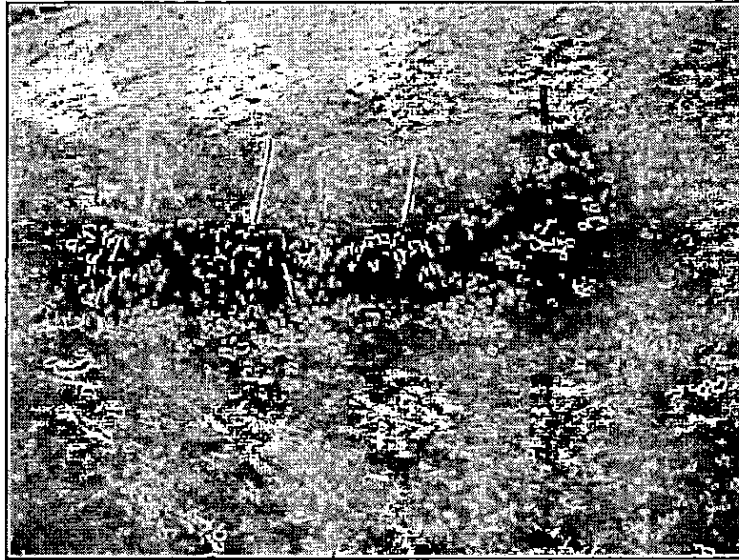
Other areas should be mowed to compliment the use of the site.

Certain species can be weakened by mowing regimes that significantly reduce their food reserves stored for the next growing season: fescue should not be mowed close during the summer; sericea should not be mowed close in late summer.

Bermudagrass and bahiagrass are tolerant of most mowing regimes and can be mowed often and close, if so desired, during their growing season.



## Sediment Trap (ST)



### Practice Description

A sediment trap is a temporary catch basin used for the purpose of intercepting and detaining small amounts of sediment to prevent it from leaving the construction site. This practice applies within disturbed areas with very small drainage basins that are subject to sheet erosion or in minor swales. Various materials may be used for sediment traps and include straw bales, sand bags, wattles, and various man-made materials and devices.

### Typical Components of the Practice

- Site Preparation
- Installation of Straw Bales
- Erosion Control
- Construction Verification

### Construction

Prior to start of construction, sediment traps should be designed by a qualified professional. Plans and specifications should be referred to by field personnel throughout the construction process. The sediment trap should be built according to planned grades and dimensions.

*Note: Straw bales are the only sediment trap material covered in this handbook. Man-made products should be installed according to the design plan or, if it not detailed, installation should follow the recommendations of the manufacturer.*

### **Site Preparation**

Determine exact location of underground utilities so that locations for digging or placement of stakes can be selected where utilities will not be damaged. Smooth the construction zone to provide a broad, nearly level area for the row of bales. The area should be wide enough to provide storage of runoff and sediment behind the straw bales.

To facilitate maintenance, provide good access for cleanout of sediment during maintenance period.

### **Installation of Straw Bale**

Excavate a trench to the dimensions shown on the drawings. The trench should be long enough that the end bales are somewhat upslope of the sediment pool to ensure that excess flows go over the bales and not around the bales.

Place each bale end to end in the trench so the bindings are oriented around the sides rather than top and bottom.

Anchor the bales by driving two 36" long 2" x 2" hardwood stakes through each bale at least 18" into the ground. Drive the first stake toward the previously laid bale to force the bales together.

Wedge loose straw into any gaps between the bales to slow the movement of sediment-laden water.

Anchor the bales in place according to the details shown on the drawings. If specific details are not shown, backfill and compact the excavated soil against the bales to ground level on the downslope side and to 4" above ground level on the upslope side.

### **Erosion Control**

Stabilize disturbed areas in accordance with vegetation plan. If no vegetation plan exists, consider planting and mulching as part of installation and select planting information from either the permanent Seeding or Temporary Seeding practice. Select mulching information from the Mulching practice.

### **Construction Verification**

Check finished grades and dimensions of the straw bale sediment trap. Check materials for compliance with specifications.

## Common Problems

Consult with registered design professional if the following occurs:

- Variations in topography on site indicate sediment trap will not function as intended; changes in plan may be needed.
- Design specifications for materials cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.

## Maintenance

Inspect sediment traps after each storm event and remove sediment deposits promptly after it has accumulated to  $\frac{1}{2}$  of the original capacity, taking care not to undermine the entrenched bales.

Inspect periodically for deterioration or damage from construction activities. Repair damaged barrier immediately.

After the contributing drainage area has been stabilized, remove the sediment trap and sediment, bring the disturbed area to grade and stabilize it with vegetation or other materials shown in the design plan.

Straw bales may be recycled as mulch.

## Sediment Barrier (SB)



### Practice Description

A sediment barrier is a temporary structure used across a landscape mostly on the contour to reduce the quantity of sediment that is moving downslope. The most commonly used barrier is a silt fence (a geotextile fabric which is trenched into the ground and attached to supporting posts and possibly wire fence). Other barrier materials could include sand bags, wattles, and various man-made materials and devices that can be used in a similar manner as a silt fence.

This practice applies where sheet and rill erosion occurs on small disturbed areas. Barriers intercept runoff from upslope to form ponds that temporarily store runoff and allow sediment to settle out of the water and stay on the construction site. Barriers can also prevent sheet erosion by decreasing the velocity of the runoff.

### Typical Components of the Practice

- Site Preparation
- Barrier Installation
- Reinforce Outlet Bypass. (Not always applicable)
- Erosion Control
- Construction Verification

## Construction

Prior to start of construction, sediment barriers should be designed by a qualified professional. Plans and specifications should be referred to by field personnel throughout the construction process.

*Note: Silt fence is the only barrier installation being covered in this handbook.*

### Site Preparation

Determine exact location of underground utilities so that locations for digging or placement of stakes can be selected where utilities will not be damaged.

Smooth the construction zone to provide a broad, nearly level area for the fence. The area should be wide enough throughout the length of the fence to provide storage of runoff and sediment behind the fence.

### Silt Fence Installation

Fence should be installed **on the contour**, so that runoff can be intercepted as sheet flow. Ends should be flared uphill to provide temporary storage of water. Fence should be placed so that runoff from disturbed areas must pass through the fence. Fence should not be placed across concentrated flow areas such as channels or waterways. When placed near the toe of a slope, the fence should be installed far enough from the slope toe to provide a broad flat area for adequate storage capacity for sediment. Dig a trench at least 6" deep along the fence alignment as shown in Figures SB-1 and SB-2 for Types A & B fences. Type C fences require only a 4" deep trench as shown in Figure SB 3. **Please note that installation with a silt fence installation machine may permit different depths if performance is equal.**

Drive posts to the depth specified on the downslope side of the trench. Space posts a maximum of 10 feet if fence is supported by woven wire, or 6 feet if high strength fabric and no support fence is used.

Fasten support wire fence to upslope side of posts, extending 6" into the trench as shown in the appropriate figure for the type fence, see Figure SB-1, SB-2 or SB-3.

Attach continuous length of fabric to upslope side of fence posts. Minimize the number of joints and when necessary to join rolls, they should be joined by rolling the ends together using the "roll joint" method illustrated in Figure SB-4 or as detailed in the specifications. Avoid joints at low points in the fence line.

For Type A & B silt fence, place the bottom 12" of fabric in the 6" deep (minimum) trench, lapping toward the upslope side. For Type C fabric place the bottom 6" in the 4" deep (minimum) trench lapping toward the upslope side.

Install tie backs as specified on the ends of the silt fence.

Backfill the trench with compacted earth or gravel as shown in Figures SB-1, 2 and 3.

Provide good access in areas of heavy sedimentation for clean out and maintenance.

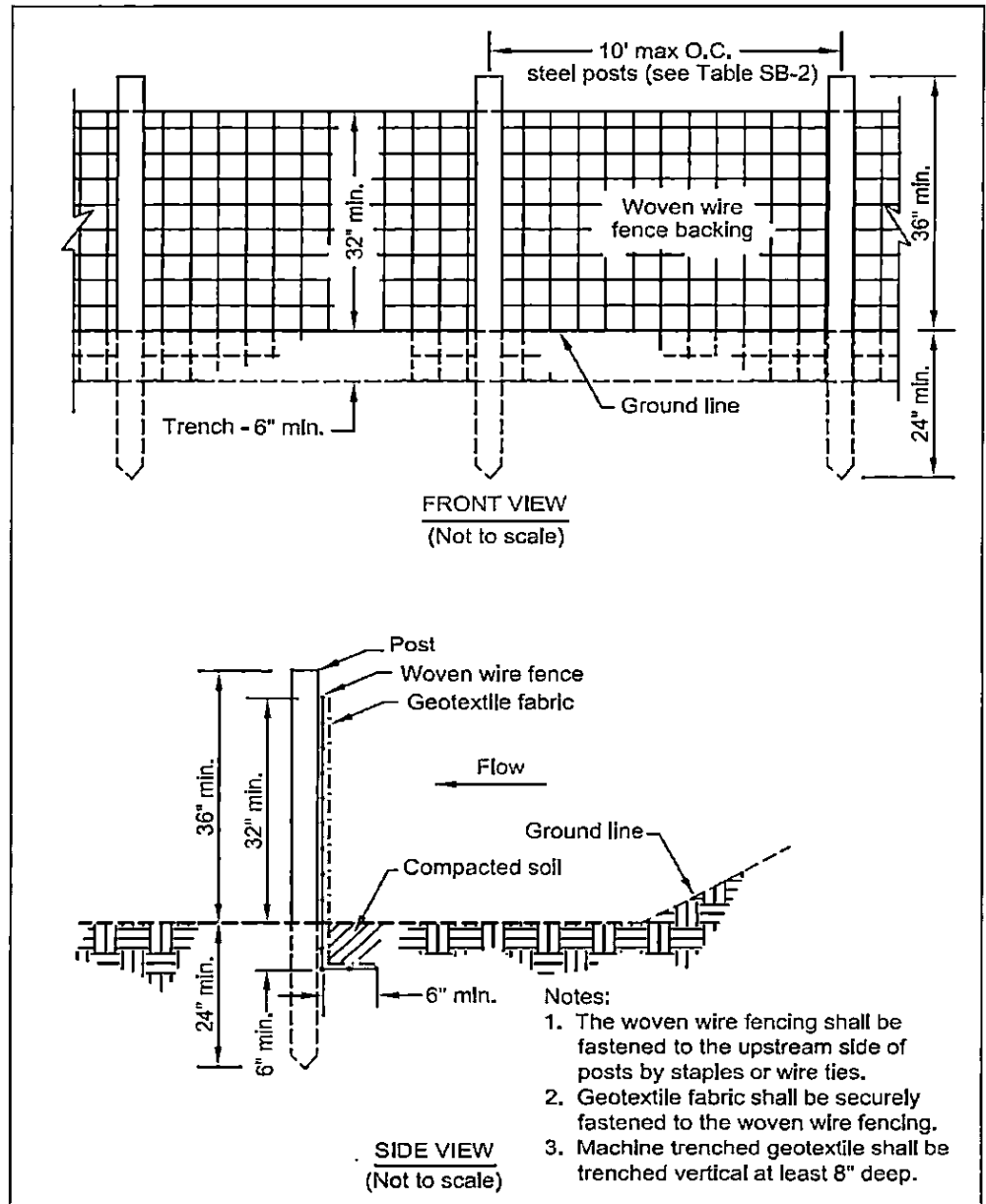


Figure SB-1 Silt Fence - Type A

(1) For post material requirements see Tables SB-2 and SB-3 (Volume I of Handbook)

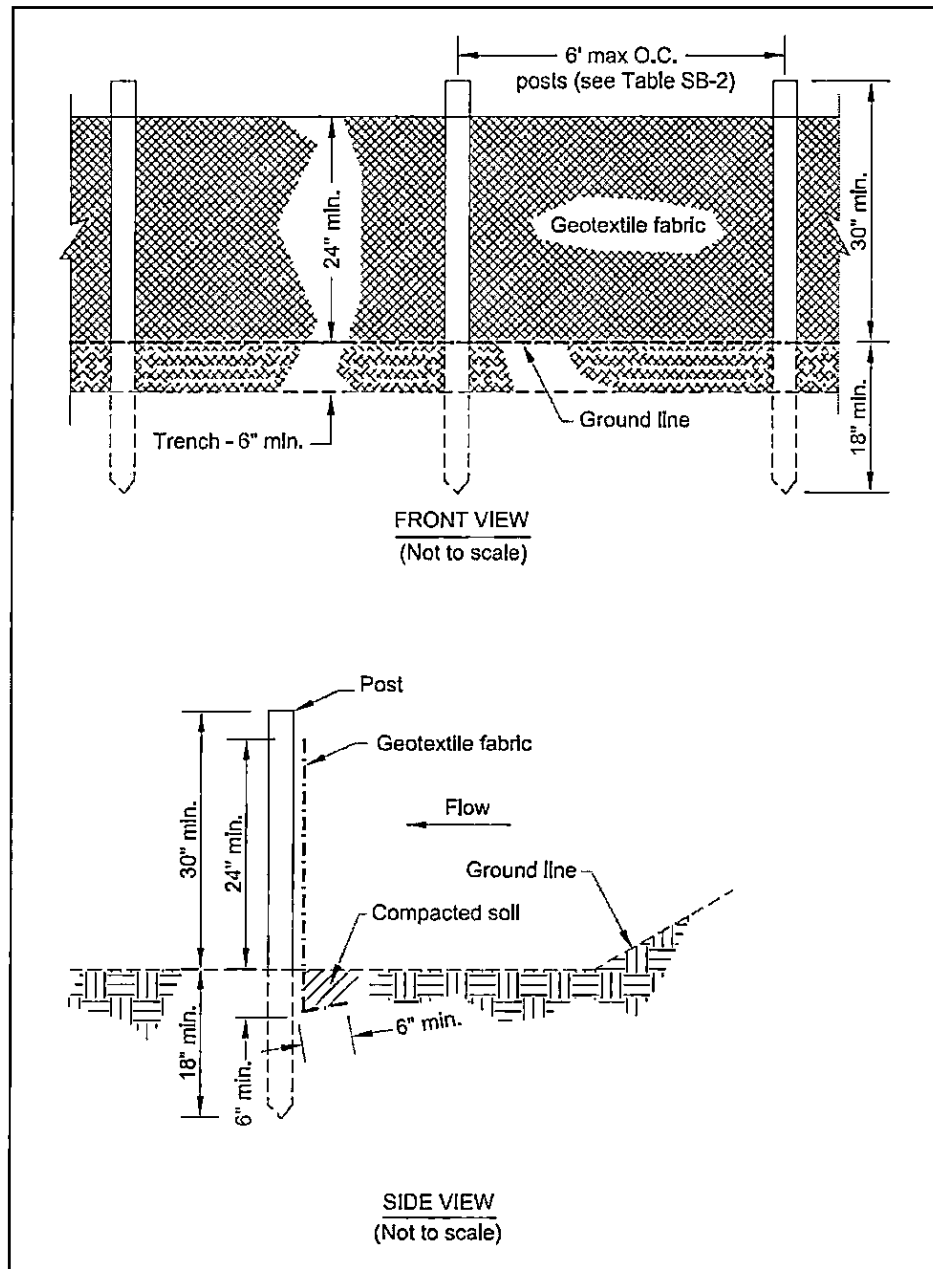


Figure SB-2 Silt Fence - Type B

(1) For post material requirements see Tables SB-2 and SB-3 (Volume I of Handbook)

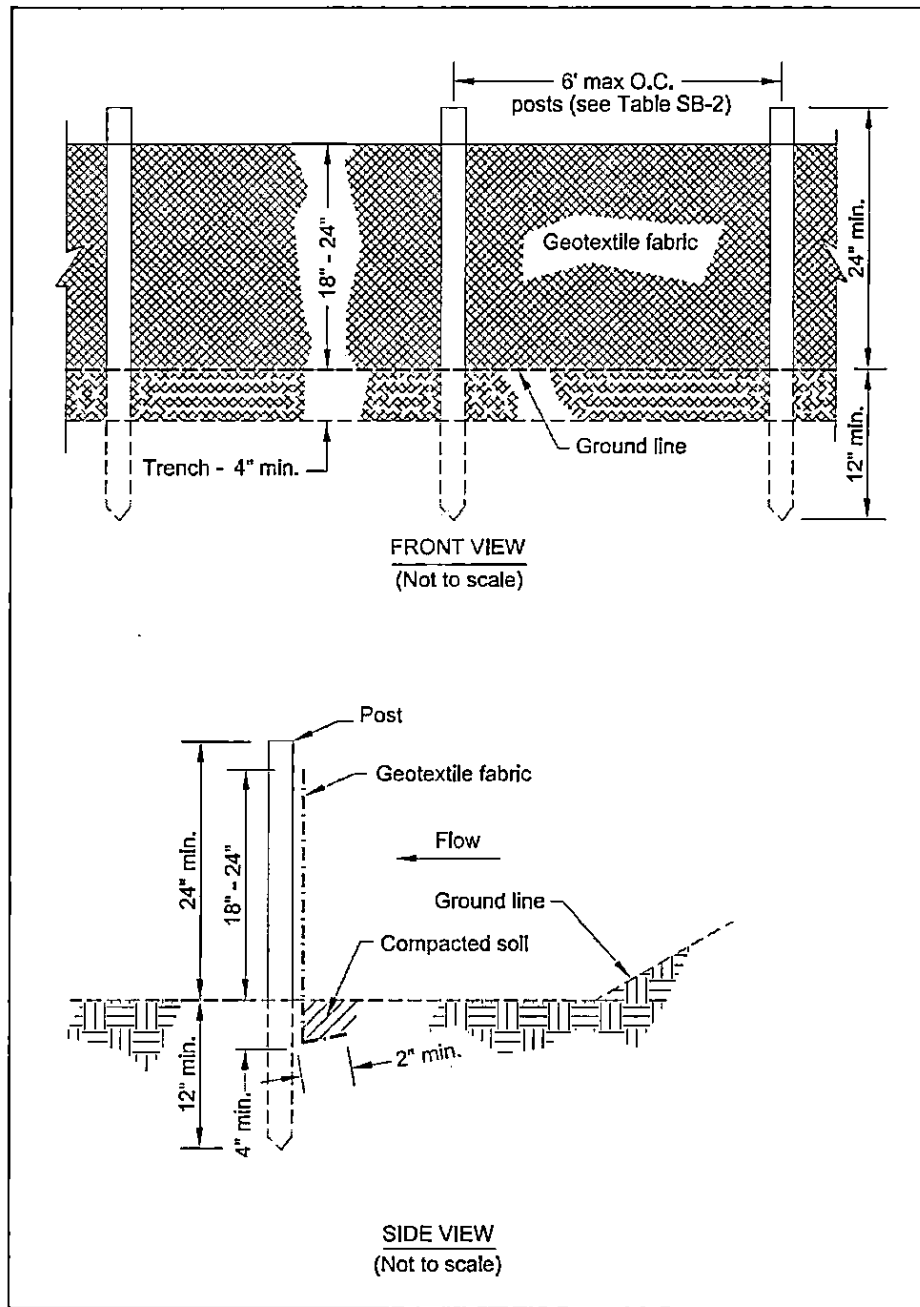


Figure SB-3 Silt Fence - Type C

(1) For post material requirements see Tables SB-2 and SB-3 (Volume I of Handbook)



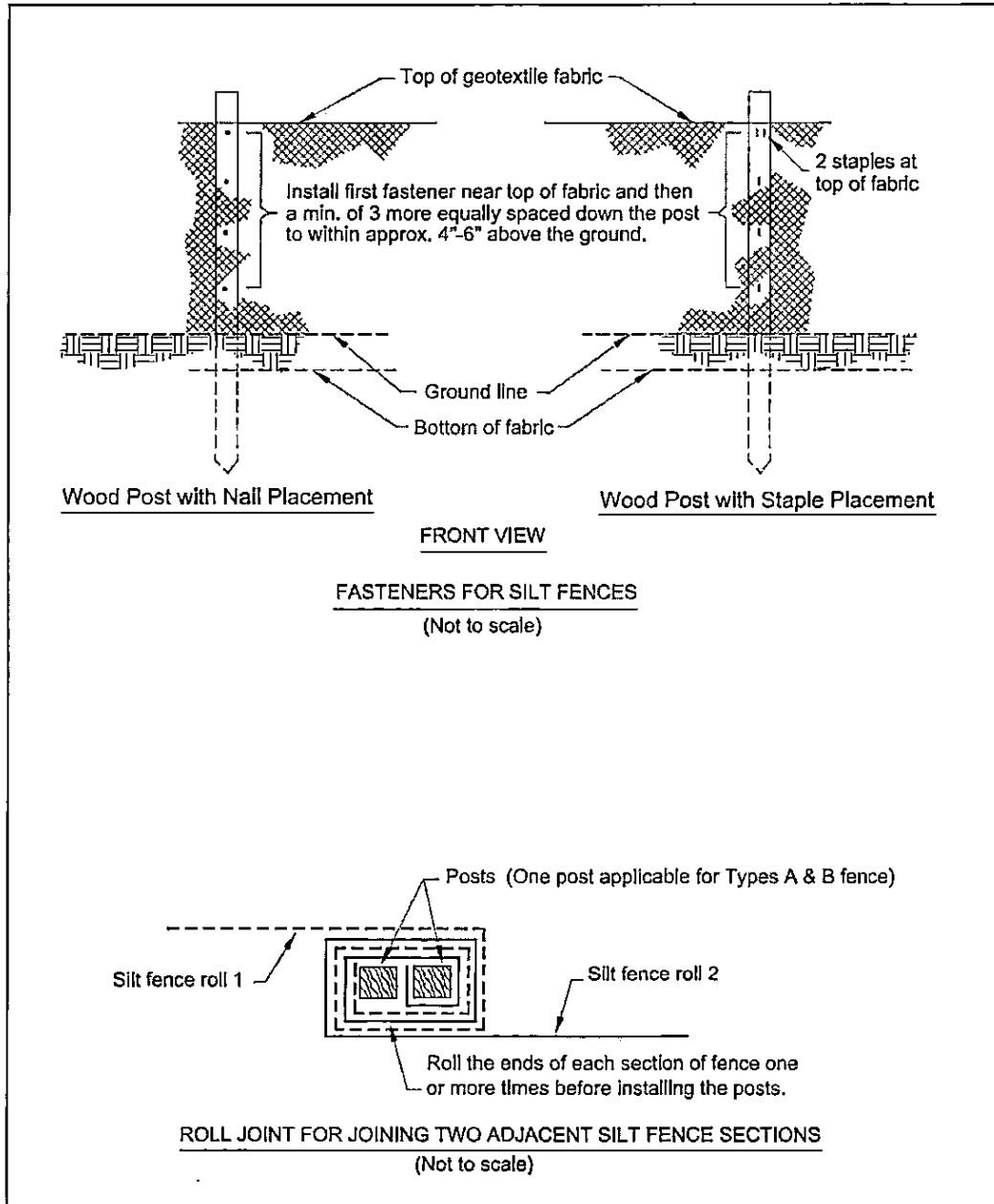


Figure SB-4 Silt Fence Installation Details

### ***Erosion Control***

Stabilize disturbed areas in accordance with vegetation plan. If no vegetation plan exists, consider planting and mulching as a part of barrier installation and select planting information from appropriate planting practice, Permanent Seeding or Temporary Seeding. Select mulching information from the Mulching practice.

### ***Construction Verification***

Check finished grades and dimensions of the sediment fence. Check materials for compliance with specifications.

## **Common Problems**

*Consult with a qualified design professional if any of the following occur:*

- Variations in topography onsite indicate sediment fence will not function as intended or alignment is not on contour or fence crosses concentrated flow areas; changes in plan may be needed.
- Design specifications for filter fabric, support posts, support fence, gravel or riprap cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.
- Drainage area appears to exceed ¼ acre for 100 feet of non-reinforced silt fence and ½ acre for reinforced fence.

## **Maintenance**

Inspect silt fences at least once a week and after each significant rain event.

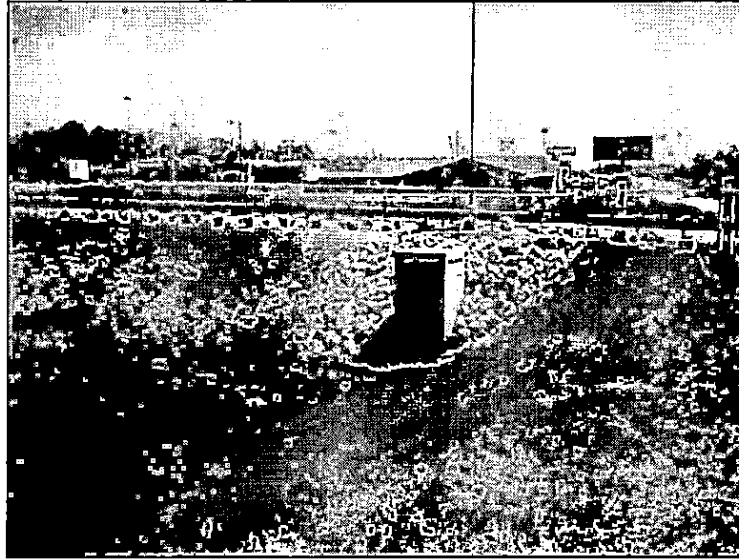
Make required repairs immediately.

Should the fabric of silt fence collapse, tear, decompose or become ineffective, replace it promptly.

Remove sediment deposits when they reach a depth of 15" or ½ the height of the fence as installed to provide adequate storage volume for the next rain and to reduce pressure on the fence.

After the contributing drainage area has been properly stabilized, remove all barrier materials and unstable sediment deposits, bring the area to grade and stabilize it with vegetation.

## Stormwater Detention Basin (SDB)



### Practice Description

A stormwater detention basin is a dam-basin practice designed to hold stormwater runoff and release the water slowly to prevent downstream flooding and stream erosion. The practice is an extremely effective water quality and peak discharge reduction measure. Its usage is best suited to larger, more intensively developed sites. Structure life is 10 years or more. A stormwater detention basin can have a permanent pool of water or be designed to have a dry basin (typical). A detention basin can be designed to also serve as a sediment basin during the construction period.

### Typical Components of the Practice

- Site Preparation
- Keyway Trench
- Principal Spillway
- Skimmer and Baffles
- Embankment
- Emergency Spillway
- Erosion Control
- Safety
- Construction Verification

## **Construction**

Prior to start of construction, the stormwater detention ponds should be designed by a qualified design professional.

Plans and specifications should be referred to by field personnel throughout the construction process. The measure should be built according to the planned grades and dimensions and include all essential components. Follow all federal, state and local requirements on impoundments.

Consider the following guidance as construction proceeds.

### ***Site Preparation***

Locate all underground utilities to ensure avoidance.

Clear, strip, grub and excavate the dam location, removing all woody vegetation, rocks and other objectionable material, such as soft, wet, or sandy soils. Stockpile surface soils with high organic content for later use. Dispose of trees, limbs, logs and other debris in designated disposal areas.

If possible, construct the dam prior to clearing and disturbance of the pool area. Stockpile any surface soil having high amounts of organic matter for later use.

Where practical, maintain existing vegetation of at least 25 feet around the pool as a filter strip (see *Preservation of Vegetation* practice).

### ***Keyway Trench***

Excavate the keyway trench along the centerline of the planned embankment to a depth determined by the qualified design professional (at least 2 feet). The trench bottom elevation should extend up both abutments to the emergency spillway elevation and have a bottom width of at least 8 feet and have side slopes no steeper than 1.5:1 or flatter. Compaction requirements for the keyway backfill will be the same as those for the embankment.

### ***Principal Spillway***

Prepare the pipe bedding and situate the spillway barrel (pipe) and riser on a firm, even foundation.

Place around the barrel a 4" layer of moist, clayey, workable soil (not pervious material such as sand, gravel or silt), and compact with hand tampers to at least the density of the foundation soil. Do not raise the pipe from the foundation when compacting under the pipe haunches. Continue with backfill of the pipe in 4" to 6" uncompacted layers scarifying the surface between each compacted layer. All backfill material within 2 feet of the pipe (beside the pipe and above the pipe) should be compacted with hand tampers only.

Install the anti-seep collars or sand drainage diaphragm according to the design specifications.

Set the top of the riser at the elevation shown on the design drawings to allow the detention pond to store the design runoff. Install the 4 inch dewatering orifice at the designed elevation on the side of the riser pipe and complete with a trash rack device.

Embed the riser into the concrete anti-flotation block as shown on the design drawing. The concrete block should be constructed to the dimensions shown on the drawings to balance the buoyant force acting on the riser.

Install the trash rack around the riser inlet. The trash rack should have the minimum dimensions shown on the design.

At the pipe outlet, install outlet protection according to the design plan (if not specified, use a riprap apron at least 5 feet wide to a stable grade).

### ***Skimmer and Baffles***

Skimmer and baffles will be required if the stormwater detention basin is to serve as a sediment basin during the construction phase of the project.

Assemble the skimmer following the manufacturer's instructions, or as designed.

Lay the assembled skimmer on the bottom of the basin with the flexible joint connected water tight at the base of the riser pipe. Be sure to attach a rope to the skimmer and anchor it to the side of the basin. This will be used to pull the skimmer to the side for maintenance.

Prevent the skimming device from settling into the mud by excavating a shallow pit under the skimmer or providing a low support under the skimmer of stone or timber.

Install a minimum of 3 porous coir baffles as specified and ensure flows do not go under or around the baffles.

### ***Embankment***

Scarify the embankment foundation before placing fill.

Use fill from predetermined borrow areas. It should be clean, stable, mineral soil free of organic material, roots, woody vegetation, rocks and other debris; and must be wet enough to form a ball without crumbling, yet not so wet that water can be squeezed out.

Place the most permeable soil in the downstream toe and the least permeable in the center portion of the dam.

Place the fill material in 6" to 9" continuous uncompacted layers over the length of the dam. Fill should then be compacted to a 4" to 6" thick continuous layer (one way is by routing pneumatic tired construction equipment over the dam so that each layer is traversed by at least 4 passes of the equipment). Compacted layers with a slick surface should be scarified prior to the next lift being placed in order to promote bondage between the layers.

Protect the principal spillway barrel with 2 feet of hand tamped, compacted fill before traversing over the pipe with equipment.

Construct and compact the dam to an elevation 10% above the design height to allow for settling. The embankment should have a minimum 8 feet top width and 2.5:1 side slopes (3:1 for mowable slopes), but the design may specify additional width and gentler side slopes.

Place a stake marking the depth of sediment accumulation at which sediment must be cleaned out of the basin (50% of design storage volume).

### ***Emergency Spillway***

Construct the spillway at the site located, to the dimensions, and utilizing the surface treatments specified by a qualified design professional according to the design plan. In most all cases, the emergency spillway will be constructed in undisturbed soil around one end of the embankment so that any flow will return to the receiving channel without damaging the embankment.

### ***Erosion Control***

Minimize the size of all disturbed areas. At the completion of each phase of construction, stabilize the disturbed areas to minimize erosion.

Stabilize the spillway with vegetation as soon as grading is complete; or install paving material to finished grade if the spillway is not to be vegetated.

Use temporary diversions to prevent surface water from running onto disturbed areas.

Divert sediment-laden water to the upper end of the sediment pool to improve trap effectiveness.

Direct all runoff into the pond at low velocity.

Establish vegetation on all disturbed areas not previously treated including the bottom and side slopes of the basin.

### ***Safety***

Because stormwater detention basins that impound water are hazardous, the following precautions should be taken:

Provide a means of dewatering the basin between storm events.

Fence area and post with warning signs if trespassing is likely.

### ***Construction Verification***

Check the finished grades and configuration for all earthwork. Check elevations and dimensions of all pipes and structures.

### **Common Problems**

*Consult with a qualified design professional if any of the following occur:*

- Variations in topography on site indicate detention pond will not function as intended.
- Seepage is encountered during construction; it may be necessary to install drains.
- Design specifications for fill, pipe, seed variety or seeding dates cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.

### **Maintenance**

Inspect the stormwater detention basin after each storm event.

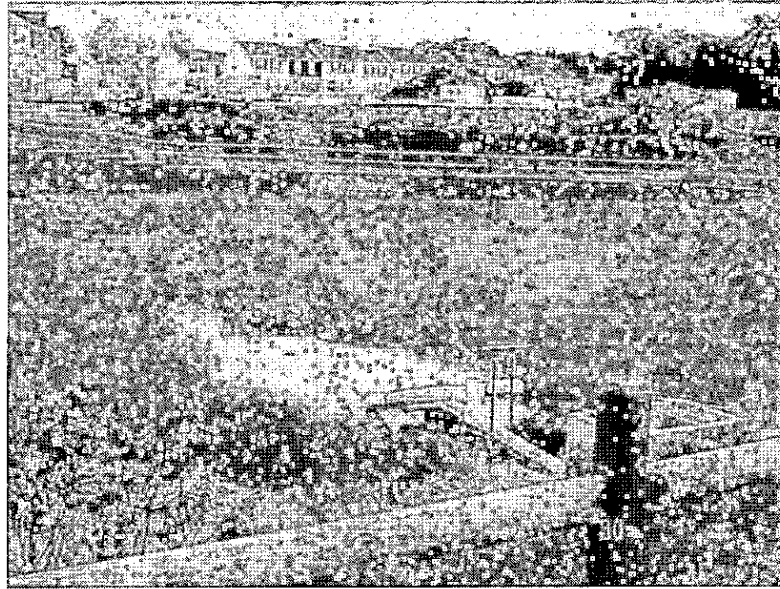
Remove and properly dispose of sediment when it accumulates to ½ the design volume.

Periodically check the embankment, emergency spillway and outlet for erosion damage, piping, settling, seepage or slumping along the toe or around the barrel; and repair immediately.

Remove trash and other debris from the riser, skimmer, emergency spillway and pool area. Remove nuisance vegetation on embankment.

Remove animals that burrow into the dam.

## Sediment Basin (SBN)



### Practice Description

An earthen embankment suitably located to capture runoff, with an emergency spillway lined to prevent spillway erosion, interior porous baffles to reduce turbulence and evenly distribute flows, and equipped with a floating skimmer for dewatering from the top of the basin. Flocculants are commonly used with a sediment basin to increase sediment capture.

### Typical Components of the Practice

- Site Preparation
- Keyway Trench
- Skimmer
- Embankment
- Emergency Spillway
- Basin and Baffles
- Erosion Control
- Safety
- Construction Verification



## **Construction**

Prior to the start of construction, sediment basins should be designed by a qualified design professional.

Plans and specifications should be referred to by field personnel throughout the construction process. The sediment basin should be built according to planned grades and dimensions. Follow all federal, state and local requirements on impoundments.

Consider the following guidance as construction proceeds.

### ***Site Preparation***

Locate all utilities at the site to ensure avoidance.

Clear, grub and strip the dam foundation and emergency spillway area, removing all woody vegetation, rocks and other objectionable material. Dispose of trees, limbs, logs and other debris in designated disposal areas.

Stockpile surface soil for use later during topsoiling.

Delay clearing the pool area until the dam is complete and then remove brush, trees, and other objectionable materials to facilitate sediment cleanout.

Specified sumps or fore bays used to capture coarse grain sediment should be installed immediately upstream of the sediment basin and completed the same time as the sediment basin.

### ***Keyway Trench***

Excavate the keyway trench along the centerline of the planned embankment to a depth determined by the qualified design professional (at least 2 feet). The trench bottom elevation should extend up both abutments to the riser crest elevation and have a bottom width of at least 8 feet and have side slopes no steeper than 1.5:1. Compaction requirements will be the same as those for the embankment.

### ***Skimmer***

Prevent the skimming device from settling into the mud by excavating a shallow pit under the skimmer or providing a low support under the skimmer of stone or timber (Figure SBN-1).

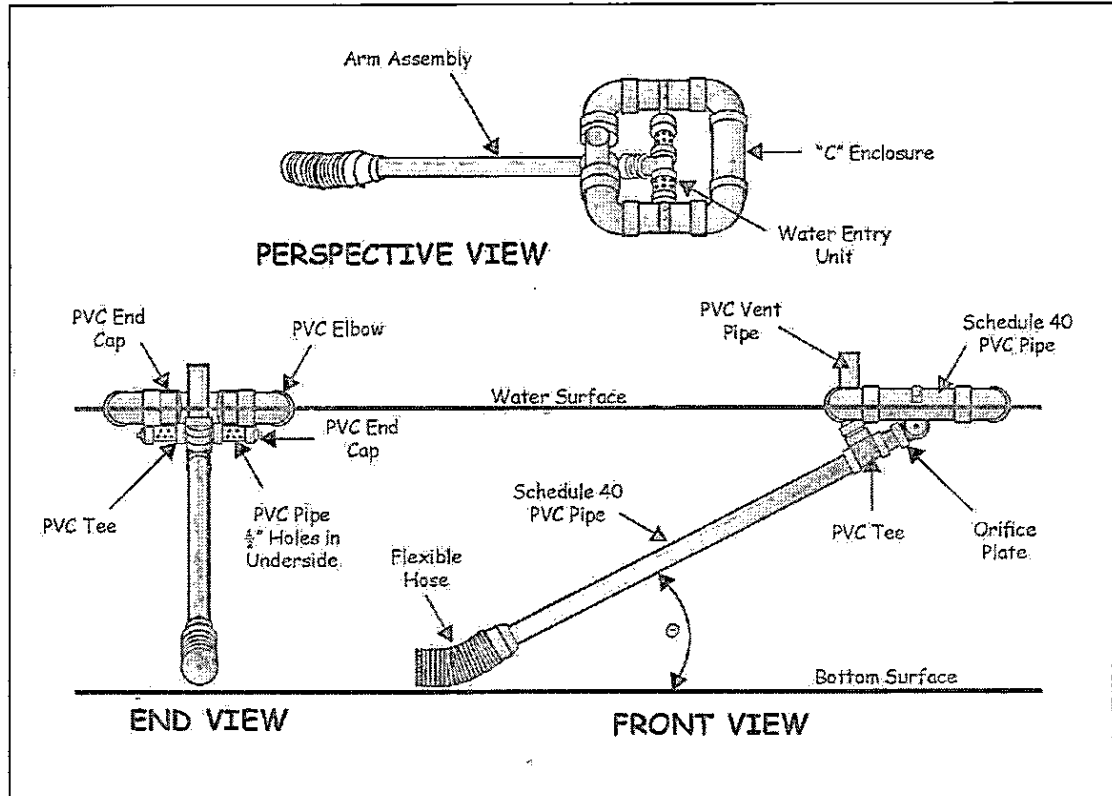


Figure SBN-1 Schematic of a skimmer.  
(from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000)

Place the barrel pipe (typically the same size as the skimmer arm) on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe. Place the fill material around the pipe in 4-inch layers and manually compact it under and around the pipe to at least the same density as the adjacent embankment. Care must be taken not to raise the pipe from the firm contact with its foundation when compacting under the pipe haunches.

Construct the anti-seep collar(s) if shown on the plans.

Place a minimum depth of 2 feet of compacted backfill over the pipe before crossing it with construction equipment. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.

Assemble the skimmer following the manufacturer's instructions, or as designed.

Lay the assembled skimmer on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope to the

skimmer and anchor it to the side of the basin. This will be used to pull the skimmer to the side for maintenance.

Install outlet protection as specified.

### ***Embankment***

Scarify the foundation of the dam before placing fill.

Use fill from predetermined borrow areas. It should be clean, stable soil free of roots, woody vegetation, rocks and other debris; and must be wet enough to form a ball without crumbling, yet not so wet that water can be squeezed out.

Place the most permeable soil in the downstream toe and the least permeable in the center portion of the dam.

Place the fill material in 6" to 9" continuous uncompacted layers over the length of the dam. Fill should then be compacted to a 4" to 6" thick continuous layer (One way is by routing construction equipment over the dam so that each layer is traversed by at least 4 passes of the equipment).

Protect the spillway barrel with 2 feet of fill that has been compacted with hand tampers before traversing over the pipe with equipment.

Construct and compact the dam to an elevation 10% above the design height to allow for settling. The embankment should have a minimum 8 ft. top width and 2.5:1 side slopes, but the design may specify additional width and gentler side slopes.

Place a reference stake at the sediment clean out elevation shown on the plans (50% of design storage volume).

### ***Emergency Spillway***

Construct the spillway at the site located by a qualified design professional according to the plan design (in undisturbed soil around one end of the embankment, and so that any flow will return to the receiving channel without damaging the embankment).

### ***Basin and Baffles***

Ensure the basin has a length to width ratio of at least 2:1 or more as specified. Grade the basin so that the bottom is level front to back and side to side. Discharge water into the basin in a manner to prevent erosion. Use diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency.

Install porous coir baffles as specified to ensure water does not flow under or around the baffles (Figure SBN-2).



Figure SBN-2 Example of porous baffle made of 700 g/m<sup>2</sup> coir erosion blanket as viewed from the inlet. (from North Carolina Erosion and Sediment Control Planning and Design Manual.)

Install posts or saw horses across the width of the sediment trap.

Steel posts should be driven to a depth of 24 inches, spaced a maximum of 4 feet apart, and installed up the sides of the basin as well. The top of the fabric should be at least the height of the required storage volume elevation.

Install at least three rows of baffles between the inlet and outlet discharge point and at the locations specified in the plans.

When using posts, add a support wire or rope across the top to prevent sagging.

Wrap porous coir material (700 - 900 g/m<sup>2</sup>) over a sawhorse or the top wire. Hammer rebar into the sawhorse legs for anchoring. Attach fabric to a rope and a support structure with zip ties, wire, or staples.

The bottom and sides of the fabric should be anchored in a trench or pinned with 8-inch erosion control matting staples.

Do not splice the fabric, but use a continuous piece across the basin.

### ***Erosion Control***

Minimize the size of all disturbed areas.

Divert runoff from undisturbed areas away from the basin.

Use temporary diversions to prevent surface water from running onto disturbed areas.

Divert sediment-laden water to the upper end of the sediment pool to improve trap effectiveness.

Vegetate and stabilize the embankment, the emergency spillway and all disturbed areas including the basin bottom and side slopes.

### ***Safety***

Because sediment basins that impound water are hazardous, the following precautions should be taken:

- Fence area and post warning signs if trespassing is likely.
- Ensure that the basin does not exceed design heights.

### ***Construction Verification***

Check the finished grades and configurations for all earthworks. Check elevations and dimensions of all pipes and structures.

### ***Common Problems***

Consult with registered design professional if any of the following occurs:

- Variations in topography on-site indicate sediment basin will not function as intended.
- Seepage is encountered during construction; it may be necessary to install drains.
- Design specifications for fill, pipe, seed variety or seeding dates cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.

### ***Maintenance***

Inspect the sediment basin at least weekly and after each significant storm event (½ inch or greater).

Remove and properly dispose of sediment when it accumulates to ½ the design volume.

Remove trash and other debris from the skimmer, emergency spillway and pool area.

Periodically check the embankment, emergency spillway and outlet for erosion damage, piping, settling, seepage or slumping along the toe or around the barrel and repair immediately.

Remove the basin after the drainage area has been permanently stabilized, inspected and approved. Do so by draining any water, removing the sediment to a designated disposal area, smoothing the site to blend with the surrounding area; then stabilize.

## Outlet Protection (OP)



### Practice Description

This practice is designed to prevent erosion at the outlet of a channel or conduit by reducing the velocity of flow and dissipating the energy. Outlet protection measures usually consist of a riprap-lined apron, a reinforced concrete flume with concrete baffles a reinforced concrete box with chambers or baffles and possibly pre-manufactured products. This practice applies wherever high velocity discharge must be released on erodible material.

### Typical Components of the Practice

- Site Preparation
- Installation of Riprap Structures
- Installation of Concrete Structures
- Erosion Control
- Construction Verification

### Construction

Prior to start of construction, the practice should be designed by a qualified design professional. Plans and specifications should be referred to by field personnel throughout the construction process.

The structure should conform to the dimensions, grades and alignments shown on the plans and specifications.

### ***Site Preparation***

Completely remove stumps, roots and other debris from the construction area. Fill depressions caused by clearing and grubbing operations with clean, non-organic soil. Grade the site to the lines and grades shown on the plans. Compact any fill required in the subgrade to the density of the surrounding undisturbed material.

If possible, the alignment should be straight throughout its length. If a curve is required, it should be located in the upstream section of the outlet.

### ***Riprap Structures***

Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.

Geotextile fabric must meet design requirements and be properly protected from puncturing or tearing during installation. Repair any damage by removing the riprap and placing another piece of fabric over the damaged area. All connecting joints should overlap a minimum of 1.5 feet with the upstream edge over the downstream edge. If the damage is extensive, replace the entire geotextile fabric.

Riprap may be placed by equipment. Care should be taken to avoid damaging the fabric.

Construct the apron on zero grade with no overfall at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.

### ***Concrete Structures***

Reinforcing steel welded wire fabric should be placed in strict accordance with the design plans and maintained in the proper position during the pouring of concrete. Concrete should be placed in horizontal layers not exceeding 24" in thickness or as specified in the design, and consolidated by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping.

Concrete should be placed in sturdy wood or metal forms, adequately supported to prevent deformation. Forms should be oiled with form release agent prior to placement to prevent bonding between concrete and forms.

If possible, concrete should not be placed during inclement weather or periods of temperature extremes. If temperature extremes cannot be avoided, American Concrete Institute (ACI) guidelines for placement of concrete during such extremes should be consulted.

Concrete should be allowed to cure as required by the plans and specifications.

Typically, the surface should be kept wet during curing by covering it with wet burlap sacks or other means. Design strengths should be confirmed by laboratory



tests on representative cylinders made during concrete placement. Form work should not be removed prior to the specified time.

***Erosion Control***

Immediately after construction, stabilize all disturbed areas with vegetation.

***Construction Verification***

Check finished structures for conformance with design specifications.

**Common Problems**

*Consult with a qualified design professional if any of the following occur:*

- Variations in topography on site indicate measure will not function as intended.
- Design specifications for riprap, filter fabric, concrete, reinforcing steel or backfill cannot be met; substitutions may be required. Unapproved substitutions could lead to failure.
- Problems with the structure develop during or after installation.

**Maintenance**

Inspect riprap outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Check concrete structures for cracks and movement. Immediately make all needed repairs to prevent further damage.

## **6. Spill Prevention Control and Countermeasures Plan**

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### **6.1. Description**

No petroleum products will be permanently stored at the mine.

## **7. Forms**

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### **7.1. Introduction**

The ADEM forms associated with the application are included in this chapter.