

FIVE-YEAR REVIEW REPORT

**FOURTH FIVE-YEAR REVIEW REPORT
FOR
MOWBRAY ENGINEERING COMPANY SUPERFUND SITE,
GREENVILLE,
BUTLER COUNTY, ALABAMA
EPA ID: ALD031618069**

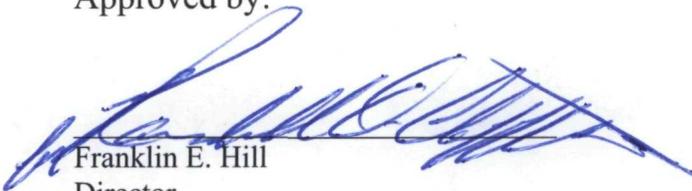
September 25, 2008

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TABLE OF CONTENTS

LIST OF TABLES.....	II
LIST OF ATTACHMENTS.....	II
LIST OF ACRONYMS, SYMBOLS, AND ABBREVIATIONS.....	III
EXECUTIVE SUMMARY	IV
FIVE-YEAR REVIEW SUMMARY FORM.....	VI
I. INTRODUCTION.....	1
II. SITE CHRONOLOGY.....	2
III. BACKGROUND	2
PHYSICAL CHARACTERISTICS	2
LAND AND RESOURCE USE.....	4
HISTORY OF CONTAMINATION.....	4
INITIAL RESPONSE.....	4
BASIS FOR TAKING ACTION	6
IV. REMEDIAL ACTIONS	7
REMEDY SELECTION	7
REMEDY IMPLEMENTATION.....	9
CLEAN UP ACTIVITIES.....	9
OPERATION AND MAINTENANCE	10
V. PROGRESS SINCE THE LAST FIVE-YEAR REVIEW	13
VI. FIVE-YEAR REVIEW PROCESS	13
VII. TECHNICAL ASSESSMENT.....	17
VIII. ISSUES.....	19
IX. RECOMMENDATIONS AND FOLLOW-UP ACTIONS	21
X. PROTECTIVENESS STATEMENT	22
XI. NEXT REVIEW.....	22

LIST OF TABLES

Table 1 – Chronology of Site Events	3
Table 2 – Pre-ROD actions.....	6
Table 3 – O&M Costs	13
Table 4 – Monitoring Summary, 2003	15
Table 5 – Monitoring Summary, 2004	15
Table 6 – Monitoring Summary, 2006	15
Table 7 – Issues	20
Table 8 – Recommendations and Follow-Up Actions.....	21

LIST OF ATTACHMENTS

Attachment 1 – List of Documents Reviewed.....	A1-1
Attachment 2 – Location Maps.....	A2-1
Attachment 3 – Sample data sheets and the laboratory certificate of analysis sheets.....	A3-1
Attachment 4 – Site Inspection Check List.....	A4-1
Attachment 5 – Photographs Documenting Site Conditions	A5-1
Attachment 6 – Site Interview Records	A6-1
Attachment 7 – Public Notice of Five-Year Review.....	A7-1

LIST OF ACRONYMS, SYMBOLS, AND ABBREVIATIONS

°C	degrees Celsius
ADEM	Alabama Department of Environmental Management
APCO	Alabama Power Company
ARARs	Applicable or Relevant and Appropriate Requirements
CD	Consent Decree
CDC	Center for Disease Control
CDM	Camp, Dresser and McKee
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC/COCs	contaminants of concern, or chemicals of concern
EPA	Environmental Protection Agency
ERCS	Emergency Response Control Section (EPA)
FDA	U.S. Food and Drug Administration
FIT	Field Investigation Team (EPA)
HRS	hazard ranking system
IC	institutional controls
K	thousand
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NCP	National Contingency Plan
NIOSH	National Institute for Occupational Safety and Health
NPL	National Priorities List
O&M	Operation and Maintenance
PCB	polychlorinated biphenyls
pH	potential of hydrogen
ppb	parts per billion
ppm	parts per million
PRPs	potentially responsible parties
RA	remedial action
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD	remedial design
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager (EPA)
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
S&ME	Soil and Material Engineers, Inc.
TCLP	toxicity characteristic leachate procedure
TSCA	Toxic Substances Control Act
µg/L	micrograms per liter
USACE	U.S. Army Corps of Engineers

EXECUTIVE SUMMARY

The Mowbray Engineering Company Superfund site encompasses about three acres, in a mixed industrial and residential area of Greenville, Alabama. In 1986 this site was placed on the National Priorities List (NPL) making it eligible as a Superfund site. Mowbray Engineering Company is no longer operating, and the Site is currently a vacant lot. Polychlorinated biphenyl (PCB from improper disposal of transformer oil) contaminated soil and groundwater. Mowbray Engineering Company and the owner went through bankruptcy. A number of potentially responsible parties were identified during the cleanup and Alabama Power Company (APCO) is the lead responsible party. The trigger for this five-year review was the third five-year review report signed on September 29, 2003.

The 1986 Record of Decision (ROD) for the Mowbray Engineering Company site specified a remedy addressing soil contamination. The main component of the remedy was excavating contaminated soils above 25 mg/kg PCB and using either off-site incineration, on-site incineration, or on-site stabilization/solidification of these soils for treatment and disposal. Instead of onsite or offsite incineration of the PCB contaminated soil, stabilization/solidification to treat the PCB contaminated soil was chosen due to cost effectiveness. Other components of the remedy were: excavate, remove, and dispose of the underground storage tanks on the property; treatment or dispose of waste oils from the swamp area and underground storage tanks; divert drainage of surface run-off around the swamp area; grade and revegetate the contaminated swamp area; properly close the abandoned on-site city supply well; and perform operation and maintenance (O&M) activities including maintenance of the drainage diversion ditch, the revegetated area and, if applicable, monitoring and maintenance of the solidified matrix.

This remedy was implemented in 1987 at a cost of \$919,184. The State of Alabama did not agree with the remedy so there was no agreement for the State to conduct O&M. A Consent Decree (CD) which states that the potentially responsible parties (PRPs) will conduct O&M, was signed and entered in 1991. The O&M plan and schedule was outlined in the CD. According to information in the first five-year review, O&M apparently had not been conducted by the first five-year review inspection in March 1992. Since that time, regular O&M has been occurring. The site was deleted from the NPL on December 30, 1993. APCO continues to perform the O&M on the site.

The second and third five-year reviews stated no problems with the O&M, and established the site remained protective of human health and the environment.

Few opportunities for optimization exist. The preferred remedial alternative in the ROD noted that institutional controls would be identified during the remedial design if necessary. However, institutional controls have not yet been implemented. No restrictions have been placed in the deed to the property. Although the City of Greenville (owner of part of the property) and the PRP state there are no plans to reuse the property, an environmental covenant needs to be placed on the property deed. The PRP conducting the O&M does not use an independent laboratory for the monitoring events.

The remedy at Mowbray Engineering Company site currently protects human health and the environment. The stabilization/solidification of the PCB contaminated soils into a capped 'monolith' is performing as expected. The cleanup levels appear to be achieved based on a review of the Close-Out Report from 1991, the last three five-year reviews, and the results of this five-year review. However, in order for the remedy to be protective in the long-term, the City of Greenville, along with APCO, should execute and record an environmental covenant on the property.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site name (from WasteLAN): Mowbray Engineering Company		
EPA ID (from WasteLAN): ALD031618069		
Region: 4	State: AL	City/County: Butler
SITE STATUS		
NPL status: <input type="checkbox"/> Final <input checked="" type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Construction completion date: <u>August 20, 1987</u>	
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency		
Author name: Laura Roebuck		
Author title: Geologist	Author affiliation: U.S. Army Corps of Engineers	
Review period:** <u>11 / 01 / 2007</u> to <u>09 / 24 / 2008</u>		
Date(s) of site inspection: <u>01 / 14 / 2008</u> and <u>07/28/2008</u>		
Type of review:		
<input type="checkbox"/> Post-SARA <input checked="" type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review number: <input type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input checked="" type="checkbox"/> Other (specify) Fourth		
Triggering action:		
<input type="checkbox"/> Actual Remedial Action On-site Construction (OU-2)	<input type="checkbox"/> Actual Remedial Action Start at OU# <u>NA</u>	
<input type="checkbox"/> Construction Completion	<input checked="" type="checkbox"/> Previous Five-Year Review Report	
<input type="checkbox"/> Other (specify)		
Triggering action date (from WasteLAN): <u>09/29/2003</u>		
Due date (five years after triggering action date): <u>09/29/2008</u>		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

1. Institutional controls are inadequate. There are no restrictive covenants in the deed to the property.
2. The PRP, APCO, does not use an independent laboratory for the soil and groundwater analysis. The analysis of these samples has been conducted by APCO's in-house laboratory.
3. The detection limits for the groundwater monitoring are too high.

Recommendations and Follow-up Actions:

1. The City of Greenville, which holds title to a portion of the Site, along with the PRP, APCO, should execute and record an environmental covenant on the property.
2. APCO should contract an independent laboratory for all future monitoring events.
3. The detection limits for the groundwater monitoring should be reduced in future monitoring events.

Protectiveness Statement:

The remedy at Mowbray Engineering Company site currently protects human health and the environment. The stabilization/solidification of the PCB contaminated soils into a capped 'monolith' is performing as expected. The cleanup levels appear to be achieved based on a review of the Close-Out Report from 1991, the last three five-year reviews, and the results of this five-year review. However, in order for the remedy to be protective in the long-term, the City of Greenville, along with APCO, should execute and record an environmental covenant on the property.

**FOURTH FIVE-YEAR REVIEW REPORT
MOWBRAY ENGINEERING COMPANY SUPERFUND SITE
GREENVILLE, ALABAMA**

I. INTRODUCTION

The U.S. Army Corps of Engineers (USACE) was tasked by the U.S. EPA to conduct a five-year review of the remedial action (RA) implemented at the Mowbray Engineering Company Site in Greenville, Alabama. The five-year review was conducted in 2008. This report documents the results of the review.

The primary purpose of the five-year review is to determine if the site remedy is protective of human health and the environment. In addition to presenting the findings and conclusions of the review, deficiencies are identified and corrective actions are recommended. The five-year review documents the evaluation of the site remedy, operation and maintenance activities.

This five-year review is prepared pursuant to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) §121 and the National Contingency Plan (NCP). CERCLA § 121 states the following:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

This requirement is interpreted further in the NCP; 40 Code of Federal Regulations (CFR) § 300.430(f)(4)(ii) states the following:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The Site has one operable unit (OU) that will be discussed in this report. The one operable unit addresses soil, surface water and groundwater contamination at the site. This five-year review is the fourth review for the Mowbray Engineering Company site.

This Five-Year Review for this site is a statutory review. A statutory review is conducted when “upon completion of the remedial action, hazardous substances, pollutants, or contaminants will

remain on Site above levels that allow for unlimited use and unrestricted exposure” (US EPA Comprehensive Five-Year Review Guidance, June 2001, Section 1.3.1). In accordance with CERCLA §121 and the NCP, a statutory review is first triggered by the initiation of the first remedial action that leaves hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure. The trigger for this review was the third five-year review completed in September 2003. The initial trigger was the commencement of a RA at the Mowbray Engineering Company site on June 4, 1987. The next Five-Year Review for the Site will be due in September 2013.

II. SITE CHRONOLOGY

The site chronology has been summarized based on the EPA Administrative Record and documents listed in Attachment 1. Table 1 presents the chronology of events for the Mowbray Engineering Company site.

III. BACKGROUND

The following subsections present background information for the Mowbray Engineering Company Site including physical characteristics, land resource use, history of contamination, initial response, and basis for taking action.

PHYSICAL CHARACTERISTICS

The Mowbray Engineering Company Site is located approximately 50 miles southwest of Montgomery, Alabama, in the town of Greenville, Alabama. This site is located within the city limits of Greenville, Alabama, in Butler County and encompasses approximately 2.7 acres. The site was reported to be mostly a swamp during typical rainfall periods, but during the site inspection, appeared to be a grassy field with no signs of being. The site is located at 300 Beeland Street, at the junction of Beeland and Second Street. It is bounded on the south and southwest by First Street and Tanyard Branch. See Attachment 2 for a location map. This site, which is less than half a mile from downtown Greenville, lies in the 100 year floodplain of Tanyard Branch. The former swamp and Tanyard Branch represent a topographic low for the area.

The geologic formations of the Greenville area consist of beds of unconsolidated clay, sandy clay, sand, gravel, chalk, marl, and limestone. The principal aquifer is the Ripley Formation. This aquifer is comprised of several sand layers, sandstone, sandy limestone, and interbedded clay. The aquifer, which supplies Greenville’s city wells, lies approximately 450 feet below land surface. The first significant clay layer, which is approximately 37 feet thick, lies from 18 to 55 feet below land surface.

Table 1
Chronology of Site Events

Event	Date
Initial discovery of contamination	May 1975
Pre NPL Response: EPA responded on an emergency spill basis under Section 311 of the Clean Water Act and conducted extensive sampling and analysis to determine the extent of contamination.	February 1981
Pre NPL Response: Removal of top 6" of contaminated soil by EPA	May 12, 1981
Mowbray Engineering Company site listed on NPL (proposed Dec 1982)	September 8, 1983
During a routine investigation, ADEM discovered excessive concentrations of PCB in the soil in the swamp.	November 1983
EPA conducted site investigation and found contaminated soil and groundwater similar to the concentrations prior to 1981 removal action.	February - April 1984
Remedial investigation conducted by Camp, Dresser & McKee (CDM)	November 1984 (completed)
RI/FS completed by CDM	July 1986
ROD signed	September 25, 1986
Remedial Action commenced	June 4, 1987
Remedial Action completed	August 20, 1987
Consent Decree for O&M signed by PRPs	Aug - October 1990
Consent Decree for O&M entered into record	May 10, 1991
Close Out Report	September 16, 1991
First Five Year Review completed	March 4, 1993
Deleted from NPL	December 30, 1993
Second Five Year Review completed	August 3, 1998
Third Five Year Review completed	September 29, 2003
Institutional Controls Review checklist completed by EPA	September 2005
EPA sent letter to City of Greenville requesting they record a restrictive covenant to protect the remedy	March 21, 2006
Title search completed on the property conducted by EPA	April 2008

Notes: NPL – National Priorities List
 EPA – Environmental Protection Agency
 ADEM – Alabama Department of Environmental Management
 PCB – Polychlorinated Biphenyl
 RI/FS – Remedial Investigation/Feasibility Study
 ROD – Record of Decision
 O&M – Operation and Maintenance
 PRPs – potentially responsible parties

LAND AND RESOURCE USE

The site is currently an unused empty lot, which is fenced on three sides with Tanyard Branch on the north, with locked gated access and appropriate signs. The property is classified as light industrial. Entrance to the property is via a locked gate at the junction of Beeland and Second Street. The surrounding area is a mix of residential and light industrial properties.

In 1985, Mowbray Engineering Company, and its owner, filed petitions for bankruptcy under Chapter 7 of the Bankruptcy Code. They no longer own this property. The City of Greenville, Alabama has the title to the property and was assigned to restrict access and enforce the O&M Plan in the CD in 1991. APCO, the lead PRP, has stated that there are no plans for reuse of the property.

HISTORY OF CONTAMINATION

Mowbray Engineering Company began in the 1940's as a business repairing electrical transformers. The company moved to the Beeland site from downtown Greenville in the 1950's. Used transformer oil from the Mowbray Engineering Company operations was disposed of on the ground surface behind the Mowbray plant, across the street from this current Superfund site. (PCB is a constituent in transformer oil.) This oil flowed into a city storm sewer drain at the property and ultimately into the swampy area onsite across Beeland Street from the Mowbray plant. This disposal method continued until the mid 1970's. Between 1955 and 1974, the company drained, repaired, and refilled an annual average of approximately 1,000 used transformers, each containing approximately nine gallons of oil. This computes to approximately 180,000 gallons of oil deposited on the ground surface.

INITIAL RESPONSE

The contamination was discovered in 1975 after a fish kill in Tanyard Branch. In May 1975 a major fish kill in Tanyard Branch was traced to an overflow of waste oils from a Mowbray Engineering holding tank. As a result, EPA and Alabama Water Improvement Commission investigated the swamp soils for PCB concentrations. Only trace amounts of PCB in the soil were detected. In late 1975, Mowbray Engineering installed two underground storage tanks to collect the waste oil for resale and to prevent future spills.

In 1980, a second fish kill occurred in Tanyard Branch due to another spill. The state investigated and found PCB contaminated soils in excess of 500 mg/kg which exceeded the general PCB remediation waste cleanup levels of ≥ 50 ppm established in the Toxic Substances and Control Act regulations. In February 1981, EPA investigated by conducting extensive soil sampling and analysis to determine the extent of contamination in the swamp, and to delineate an area for possible removal of contaminated soil to an acceptable level. Due to the results of this investigation, EPA removed the top six inches of contaminated soil from the swamp. The contaminated soils were sent to an approved hazardous landfill. In August 1981, EPA sampled the soil at the site, which revealed a maximum concentration of 19 mg/kg of PCB.

In 1981, other investigations and studies were completed by EPA, the US Food and Drug Administration (FDA), the Centers for Disease Control (CDC), the National Institute for

Occupational Safety and Health (NIOSH). The FDA investigation concluded that PCB concentrations detected in edible catfish tissue collected downstream of Tanyard Branch were below the FDA level of 2.0 mg/kg. An EPA investigation revealed PCB concentrations above background levels in the roots of some plants growing in the water in the saturated soil. The EPA Environmental Services Division, Ecology Branch, ecological investigation revealed that Tanyard Branch was almost completely devoid of biota from below the swamp to its confluence with Persimmon Creek (approximately one mile downstream). The CDC/NIOSH investigation revealed that Mowbray Engineering workers did not appear to be exposed to excessive levels of PCB.

On December 30, 1982, the Mowbray Engineering Site was proposed to be included on the National Priority List (NPL), as defined in Section 105 of CERCLA, as amended 42.S.C. 9605, with a ranking score of 53.67. The Hazard Ranking System (HRS) package listed groundwater as the main concern at the site mainly due to a nearby inactive public water supply well. On September 8, 1983, the Site was included on the final NPL. The NPL is a list of priority releases for long-term evaluation and remedial response, and was promulgated pursuant to section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended. The NPL list is found in the NCP (Appendix B of 40 CFR part 300).

In 1983, during a routine investigation, the Alabama Department of Environmental Management (ADEM) collected grab soil samples from the swamp. One of the soil samples collected from the storm water drainage pathway through the site was reported to have a PCB concentration of 1,737 mg/kg. This triggered renewed interest in the site at the federal level. In 1984 the EPA Field Investigation Team (FIT) performed a sampling investigation which revealed that the soils in the swamp area were contaminated with PCBs at levels similar to those observed prior to the 1981 removal action.

In 1985, EPA authorized Camp Dresser & McKee (CDM) to conduct a Remedial Investigation/Feasibility Study (RI/FS) to determine the nature and extent of the contamination and to explore potential remedies. The RI/FS was completed in 1986. The results revealed that PCB's were the only contaminants of concern (COC) although low levels of phenol, chloroform, dichloroethane, and trichloroethanes were detected. Three monitoring wells were sampled during the investigation, with only one of the three wells, MW-2, showing a low level detection of PCB. The sample was unfiltered, so it was concluded that it may not reflect dissolved concentrations.

The Pre- Record of Decision (ROD) actions are presented in Table 2. The ROD, which described the selected remedial alternative, was signed on September 25, 1986.

Table 2. Pre-ROD actions

Year	Action
1975	EPA and Alabama Water Improvement Commission investigated the swamp soils for PCB concentrations following a fish kill. Only trace amounts of PCB in the soil were detected.
1975 (late)	Mowbray Engineering installed two underground storage tanks to collect the waste oil for resale and to prevent future spills.
1980	The state conducted an investigation of the soil following a fish kill, and determined excessive concentrations of PCB.
1981	EPA conducted extensive soil sampling and analysis to determine the extent of contamination in the swamp, and to delineate an area for possible removal of contaminated soil to an acceptable level (i.e. below 50 mg/kg).
1981	EPA removed the top six inches of contaminated soil from the swamp.
1981	An EPA investigation revealed PCB concentrations above background levels in the roots of some plants growing in the water in the saturated soil. The EPA Environmental Services Division, Ecology Branch, ecological investigation revealed that Tanyard Branch was almost completely devoid of biota from below the swamp to its confluence with Persimmon Creek (approximately one mile downstream).
1983	ADEM collected grab soil samples from the swamp revealing PCB concentration of 1,737 mg/kg. This triggered renewed interest in the site at the federal level.
1984	EPA FIT soil sampling investigation revealed that the soils in the swamp area were contaminated with PCBs at levels similar to those observed prior to the 1981 removal action.
1985	EPA authorized CDM to conduct a RI/FS.
1985	Mowbray Engineering Company and its owner filed for bankruptcy under Chapter 7 of the Bankruptcy Code.
1986	CDM completed the RI/FS, establishing that PCB is the only COC.

Notes: CDM – Camp, Dresser, and McKee
FIT – Field Investigation Team

BASIS FOR TAKING ACTION

The basis for taking action at the Mowbray Engineering Company site relates to soil contamination of PCB found at the site, above acceptable concentrations. This contamination initially resulted in fish kills in Tanyard Branch.

Numerous investigations pre and post ROD indicate soil contamination resulted from poor waste handling procedures. Based on the environmental sampling, PCBs are considered to be the only chemical found at the site that poses a potential unacceptable risk to human health or the environment, based on the frequency of detection, concentrations detected, and inherent toxicity.

Soil contamination in the swamp resulted from poor waste handling procedures from 1955 to 1975. Waste transformer oil was disposed of by dumping it on the ground surface behind the Mowbray Engineering Company Plant. The oil flowed into a city storm sewer drain at the property and ultimately into the swamp area across Beeland Street from the Mowbray Engineering Company Plant. Beyond the swamp area was Tanyard Branch. This disposal

practice continued until a Mowbray Engineering Company installed two underground storage tanks to collect the waste oil after the 1975 fish kill in Tanyard Branch.

Contaminant migration and exposure assessment

The contaminant migration and exposure assessment presented in the ROD is discussed here. In 1984, EPA classified PCB in group B2 – suspected human carcinogen. PCB has been shown to be quite toxic particularly following long-term exposure. Tanyard Branch and Persimmon Creek are the downstream surface water recipients of PCB from the Mowbray site. The exposure assessment established that since there were no contaminants above the 1980 EPA water quality criteria in the upstream and downstream surface water samples from Tanyard Branch and Persimmon Creek, and only very low levels of PCB in downstream sediment samples, in conjunction with the limited use of these streams, the potential for significant exposure via dermal contact or inadvertent ingestion of surface water by fishermen or children was considered remote.

This same exposure assessment determined that the potential for exposure to PCB via ingestion of groundwater, and for direct human contact of the contamination soils on site is remote. The ROD noted that any reuse of the MEC property for industrial activities, or increased use of the swamp, without remedial action, would be likely to lead to greater contact with contaminated soils and increased risks to people using these areas. The ROD noted that these potential future risks might only accrue to persons actually entering the MEC property or swamp and becoming exposed if no action was taken.

IV. REMEDIAL ACTIONS

The EPA performed the remedial actions which consisted mainly of stabilization/solidification of the PCB contaminated soil covered with and a six foot thick cap. The remedial action began on June 4, 1987, and was completed on August 20, 1987. The site was deleted from the NPL on December 30, 1993. The following subsections present the remedy selection in the ROD, remedial actions implemented at the Mowbray Engineering Company site, and O&M.

REMEDY SELECTION

The ROD for the Mowbray Engineering Company site was signed September 25, 1986. The cleanup goal outlined in the ROD was developed as a result of data collected during the 1985 Remedial Investigation, previous investigations, and the exposure assessment. Details of the selected remedial alternative within the ROD are also discussed in this section. The selected remedial alternatives in the ROD are consistent with the recommendation in the RI/FS.

The remedy at the Mowbray Engineering Company site addressed soil contamination of PCB. The preferred alternative in the ROD noted that institutional controls would be indentified during the remedial design if necessary to address the effects of the release/disposal and to protect the remedy so that exposure to the hazardous waste left on site is controlled by restricting the use of the property and the activities on the property. However, institutional controls have not yet been implemented.

However, the ROD determined that site cleanup activities were needed and that the selected remedy would adequately protect public health, welfare, and the environment. The cleanup level of 25 parts per million (ppm) was chosen to be consistent with the proposed Toxic Substances Control Act (TSCA) regulations.

The selected remedial alternative within the ROD is presented below:

- Excavation, removal, and disposal of the underground storage tanks on the Mowbray property;
- Treatment or disposal of waste oils encountered in the swamp area and in the underground storage tanks by a TSCA approved method;
- Drainage diversion of surface run-on around the contaminated swamp area;
- Excavation of contaminated soils above 25 ppm PCB and either off-site incineration, on-site incineration, or on-site stabilization/solidification of these soils with incineration with an infrared-type incinerator being the preferred option;
- Grading and revegetation of the contaminated swamp area;
- Proper closure of the abandoned on-site city supply well in accordance with ADEM well closure regulation;
- O&M activities were to include maintenance of the drainage diversion ditch, the revegetated area and, if applicable, monitoring and maintenance of the solidified matrix.

As described in the ROD, infrared-type incineration was preferred over onsite stabilization/solidification because infrared incineration for completely destroys PCBs in the soil. Instead of the preferred infrared incineration of the PCB contaminated soil, EPA's Emergency Response Control Section (ERCS) determined that the small amount of soils needing remediation and the low concentration (maximum 62 mg/kg PCB) would have been inefficient and not cost effective to incinerate.

Institutional Controls

The preferred alternative in the ROD noted that institutional controls would be identified during the remedial design if necessary. The ICs would address the effects of the release/disposal, to protect the remedy, control exposure, and restrict land use and activities on the property.

To date, institutional controls have not been implemented for the Site. EPA attorneys have been working for years with the PRP attorneys to implement restrictive covenants on the Site. At the time of the draft of this five-year review report, EPA has successfully drafted an environmental covenant for this Site, which prohibits certain activities, such as;

Any agricultural, residential, commercial, or industrial use of the Property except as necessary to implement, monitor, or maintain the remedial action pursuant to the ROD as determined by EPA, or any future remedies determined by EPA to be necessary under CERCLA.

Any interference of any sort with the construction, operation, maintenance, monitoring, or efficacy of any components, structures, or improvements relating to the remedial action.

This draft environmental covenant for Mowbray is intended to be ADEM's 'model' environmental covenant for future environmental covenants under the Alabama Uniform Environmental Covenants Act, adopted by the State of Alabama in 2007, effective January 1, 2008. ADEM is the enforcement agency for this Act. Once this draft environmental covenant for the Mowbray site is approved by ADEM, this covenant will then be sent to the PRPs, the City of Greenville and APCO, to be signed and recorded.

REMEDY IMPLEMENTATION

The EPA contractor, HazTech Corporation, began remedial action site work on June 4, 1987. The constructed remedy consisted of the following remedial components:

- Stabilization/solidification of approximately 2500 cubic yards of PCB contaminated soil (monolith) – left on site
- Capping of the monolith
- Construction of a diversion ditch around the swamp
- Fencing off the swamp area
- Grading and revegetating the swamp area
- Closure of the abandoned city well
- Storage tank removal
- Removal of abandoned transformers
- Disposal/treatment of waste oil in the underground storage tanks, barrels, transformers, and tanker trailer.

Prior to clean-up, Soil and Material Engineers, Inc (S&ME) was contracted to find the optimum mix design to solidify the PCB contaminated soil. Soil samples were composited and sent to S&ME from the Mowbray site. The mix designs were tested to meet or pass the criteria of a 500 psi compressive strength test and toxicity characteristic leachate procedure (TCLP) extraction test. After testing varying cement, soil and water percentages, a soil-cement mix of 40% cement, 44% soil, and 16% water met the above criteria and permeability at 20°C of 6.18×10^{-7} cm/sec.

CLEAN UP ACTIVITIES

Soil was excavated at any location where PCB concentrations in soils exceeded the cleanup goal of 25 ppm. The excavated soil was solidified to reduce the mobility of the contaminant and placed onsite beneath a protective six foot thick cap. During soil excavation activities, confirmatory samples were taken of each excavation area and sent to an EPA contract lab. The results indicated that all soils above the ROD's 25 ppm cleanup goal for PCB soils were excavated and solidified.

During the course of the excavation activities, approximately 3,350 transformers were uncovered on the northwest side of the former Mowbray Engineering Company facility. The contents of these transformers as well as the contents in the barrels, and tanker trailer were transported off-site to PPM Recyclers in Atlanta.

The waste oil contained in the underground storage tanks was shipped to Chemical Waste Management's Landfill in Emelle, Alabama for incineration. Small quantities of waste oils were found in the swamp but did not warrant offsite disposal.

Construction of a cap over the solidified material started on August 10, 1987 after a two-week delay searching for suitable clay to meet the requirements of the Resource Conservation and Recovery Act (RCRA). The cap consisted of a minimum of two feet of compacted clay, a drainage layer of two feet of compacted fine-medium sand, a water permeable geotextile fabric, and two feet of topsoil. Grass was established on top of the cap to prevent degradation by erosion. The abandoned city well was closed by removing the well casing and pump then filling the well shaft with 5.5 yards grout.

The construction activities associated with the above remedial components were completed on August 20, 1987. Confirmatory sampling of cleanup was conducted after each segment of the RA and confirmed cleanup to below the 25 ppm goal.

Core samples were taken from the monolith before closure and tested for or whether the monolith passed the Toxicity Characteristic Leaching Procedure (TCLP) criteria for minimal leachate generation as non-hazardous material, as defined by Resource Conservation and Recovery Act (RCRA) regulations at 40 CFR 261.24. Results indicated no detectable levels of PCBs in the TCLP leachate at detection limits of 1 parts per billion (ppb). After the stabilization/solidification of the contaminated soils, the monolith's density and compaction were tested using a nuclear probe. The monolith passed the density test and the required 95% compaction test.

OPERATION AND MAINTENANCE

As specified in the preferred remedial alternative in the ROD, O&M for the recommended alternatives consists of maintenance and long-term monitoring of the revegetated area, drainage diversion ditch, and solidified matrix. To ensure that the revegetation efforts of the remediation activities are successful and vegetative growth flourishes, bi-annual maintenance checks of the area is necessary. Bi-annual maintenance checks of the drainage ditch was specified to ensure that the ditch remains in good condition and adequately diverts surface runoff from the storm sewer drain around the swamp area. Bi-annual monitoring of the monolith is required to detect leaching of contaminants from the matrix. Sediment and soil samples, downgradient of the monolith are collected during the bi-annual monitoring events and analyzed for PCB. The locations are noted in the sample location map in Attachment 3.

Enforcement issues

When the ROD was signed by EPA, the State of Alabama did not concur with EPA's preferred remedial alternative. There was, therefore, no mechanism for cost-sharing of the remedy or performance of the O&M, as the owner of Mowbray Engineering Company filed for bankruptcy in 1985 and was no longer liable for cleanup, remediation, O&M or other costs.

Following the completion of construction activities, EPA initiated the process for deleting the site from the NPL. The State of Alabama supported the proposed deletion of the site from the NPL; however, the state continued to assume no responsibility for O&M activities. EPA Headquarters notified Region 4 EPA office that the deletion package was conditional upon obtaining assurance for the implementation of O&M activities.

In November 1989, EPA inspected the site and discovered thousands of invoices. These invoices showed extensive business dealings between Mowbray Engineering and approximately 100 businesses engaged in electric power generation. On December 12, 1988, EPA issued notice/information request/demand letters to twenty-two of these businesses, and these businesses formed a steering committee to evaluate the evidence and requested that EPA send notice letters to ninety-three other contributors so that they would be included as PRPs.

A Consent Decree (CD) for the O&M activities was signed in 1990 by EPA and the PRPs. The CD was entered in by the Federal Court in May 1991. The CD presents the O&M plan in detail, and states that Alabama Power Company (APCO) will perform the O&M for a period of 30 years.

Detailed O&M plan, per Consent Decree

As outlined in the CD, the detailed O&M Plan, will be carried out by APCO. The annual O&M cost estimate is not provided in the CD.

1. Site Inspection and Sampling – Site inspections shall be performed quarterly and following major rain events. Written site inspection reports are required, describing the condition of the vegetative cover, integrity of the remedy, condition of the drainage system, riprap and fencing. PCB analysis will be conducted on soil and water samples. Sample locations will be selected at the site based on run-off patterns relative to location of the monolith and documented on a site map. The rain gauge will be inspected monthly to insure proper operation and calibration.
2. General Site Maintenance and Repair

General maintenance will include cutting the grass approximately 6 times per year (based on growth), reseeding grass as necessary to maintain a stable vegetative cover, and annual fertilizing. Weeds and woody vegetation will be controlled, as necessary. Repair of the site shall be conducted as necessary to maintain site security and the integrity of the soil cover and drainage system.

3. Management and Administration

The O&M Plan includes reporting and record keeping insuring that EPA and the defendants, including Greenville, are provided with a record of the results of site inspections, maintenance and repair activities.

Total O&M Costs

The actual costs of O&M, site investigations, and other remedial related costs for the site are presented in Table 3 for 2003 through 2007. The O&M cost for the upkeep of the property and well sampling was estimated in the 2003 Five Year Review to be approximately \$10,000 annually at a maximum. The ROD's projected O&M costs for the selected preferred alternative 5 (onsite containment/encapsulation) was \$414,144 present worth for 30 years. This calculates to projected annual O&M costs of \$33,375, assuming 7% interest. The actual O&M costs presented in Table 3 were provided by APCO.

Table 3
Operation and Maintenance Costs, Mowbray Engineering Company
For year 2003 through year 2007*

Year	Description	Cost
2003	APCO labor time, 75 hours	\$2856
	Lab costs	\$621
	Grass cutting, spraying	\$1500
2004	APCO labor time, 75 hours	\$2856
	Lab costs	\$621
	Grass cutting, spraying	\$1500
2005	APCO labor time, 65 hours	\$2475
	Grass cutting, spraying, fence repair	\$2000
2006	APCO labor time, 75 hours	\$2856
	Lab costs	\$621
	Grass cutting, spraying, fence repair	\$1500
2007	APCO labor time, 65 hours	\$2475
	Grass cutting, spraying	\$1500
	TOTAL COSTS	\$23,381

*Source: Thomas Ryals, Alabama Power Company

V. PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

The protectiveness statement from the third five-year review for the Mowbray Engineering Company Superfund Site, signed September 29, 2003, stated the following:

The assessment of this five-year review found that the remedy is protective, and that long-term protectiveness has been established. Based upon the site inspections and sampling results, the remedy is performing satisfactorily. The monolith cap, drainage ditches, and fence are to be in good condition. The PCB contaminated soils are controlled within the solidified matrix and cover material.

Recommendations were not made in the last five year review. Currently, the Mowbray Engineering Company site is in the same condition as it was when the last five-year review was completed in 2003.

VI. FIVE-YEAR REVIEW PROCESS

This fourth five-year review was conducted by the USACE under guidance from the EPA Remedial Project Manager (RPM) for the Mowbray Engineering Company Superfund site. The five-year review process consisting of administrative and additional components, document review, data review, site inspection, and interviews, is described in the following subsections.

ADMINISTRATIVE COMPONENTS

The Mowbray Engineering Company Superfund site five-year review was led by Erik Spalvins, USEPA Remedial Project Manager for the site, with assistance from Laura Roebuck of the USACE. The EPA Community Involvement Coordinator for Mowbray Engineering Company; the PRP, Alabama Power; ADEM; and the EPA attorney for the site, Gwendolyn Bivins, were notified of the initiation of the five-year review for the site.

COMMUNITY NOTIFICATION

A public notice was issued by EPA to notify the community of the fourth five-year review for the site. The notice, presented in Attachment 7, was published in the Greenville Advocate newspaper on January 19, 2008. Mowbray Engineering Company site is a low profile low-interest site in the community. No community members contacted the EPA about the site since the beginning of the Five Year Review.

Within thirty (30) calendar days of the Fourth Five-Year Review Report finalization, a notice will be published in the same local newspapers announcing that the Fourth Five-Year Review Report for Mowbray Engineering Company Superfund Site is complete, and the results of the review and the report are available to the public at the information repository which is located at the Greenville Public Library, 309 Fort Dale Street, Greenville, Alabama 36037.

DOCUMENT REVIEW

This fourth five-year review consisted of a review of relevant documents including decision documents, monitoring reports, and site inspection reports covering the past few years.

Attachment 1 provides a list of all documents reviewed. In addition, the standards associated with chemical-specific Applicable or Relevant and Appropriate Requirements (ARARs) set in the ROD were also reviewed to determine whether those standards have changed since the ROD was signed (see Section VII).

DATA REVIEW

Groundwater, soil and sediment monitoring has been conducted at the site as outlined in the O&M Plan every two years to evaluate the effectiveness of the remedy. During the period of review, three sampling events occurred. The first event occurred in November 2003, the second in December 2004, and the third in December 2006. In each event, two groundwater samples were collected (one sample from MW-2 and one sample from MW-4). Three soil/sediment samples were collected in each event. The locations of the sediment and soil samples are identified on a sample location map in Attachment 3. Since the first samples were collected for the O&M of the site on September 11, 1992, the locations of the sediment and soil samples for subsequent O&M monitoring have remained the same. One sediment sample was collected from the ditch near Beeland Street; one surface soil sample was collected in the middle of the field on the Mowbray site; one sediment sample was collected from the ditch by Tanyard Branch. These samples were analyzed for PCB concentrations.

MONITORING RESULTS

PCB was not detected in any of the groundwater samples in any sampling event. Each groundwater sample was analyzed for different types of PCB, to include Aroclor 1242, 1254, 1221, 1232, 1248, 1260, and 1016. Field parameters – conductivity, pH, and temperature – were noted for each water sample. Well depth and depth to water table were also measured and recorded. Also noted were the sample collection time of day, the number of gallons of water bailed from the well, and the weather conditions. Tables 4, 5, and 6 present summaries of the monitoring data for the 2003, 2004, and 2006 sampling events respectively.

PCB was detected in soil and sediment at the detection limit of 1 mg/kg (ppm) in three of the nine samples taken since 2003. These levels are considered protective for residential use of the property. EPA's Superfund PCB guidance notes that the starting point action level (preliminary remediation goal) is 1 ppm PCBs in soils for sites where unlimited exposure under residential land use is assumed. More information is available in "Guidance on Remedial Actions for Superfund Sites with PCB Contamination" at <http://www.epa.gov/superfund/resources/remedy/pdf/540g-90007-s.pdf>.

Sample data sheets and the laboratory certificate of analysis sheets are presented in Attachment 3. No significant increases or decreases in the detections of PCB in the analysis results are noted since the last five-year review report.

Table 4
Monitoring and Sampling Summary
Mowbray Engineering Company

For November 2003* sampling event, groundwater and soil

Sample point/ ID	Media	COC	EPA Method	MDL	Result	Units
MW-2	groundwater	PCB, Aroclor	608	0.005	ND	mg/L
MW-4	groundwater	PCB, Aroclor	608	0.005	ND	mg/L
S1	Soil/sediment	PCB, Aroclor	600	1	ND	mg/kg
S2	Soil/sediment	PCB, Aroclor	600	1	ND	mg/kg
S3	Soil/sediment	PCB, Aroclor	600	1	ND	mg/kg

Notes: *Sample collection date was November 11, 2003.

COC – contaminant of concern

MDL – minimum detection limit

mg/L – milligrams per liter

ID – identification number

mg/kg – milligrams per kilogram

ND – not detected

Table 5
Monitoring and Sampling Summary
Mowbray Engineering Company

For December 2004* sampling event, groundwater and soil

Sample point/ ID	Media	COC	EPA Method	MDL	Result	Units
MW-2	groundwater	PCB, Aroclor	608	0.005	ND	mg/L
MW-4	groundwater	PCB, Aroclor	608	0.005	ND	mg/L
S1	Soil/sediment	PCB, Aroclor	600	1	ND	mg/kg
S2	Soil/sediment	PCB, Aroclor	600	1	ND	mg/kg
S3**	Soil/sediment	PCB, Aroclor (1260)	600	1	1	mg/kg

*Sample collection date was December 10, 2004.

**S3 is the sediment sample collected from the ditch in Tanyard Branch.

Table 6
Monitoring and Sampling Summary
Mowbray Engineering Company

For December 2006* sampling event, groundwater and soil

Sample point/ ID	Media	COC	EPA Method	MDL	Result	Units
MW-2	groundwater	PCB, Aroclor	608	0.005	ND	mg/L
MW-4	groundwater	PCB, Aroclor	608	0.005	ND	mg/L
S1**	Soil/sediment	PCB, Aroclor (1260)	600	1	1	mg/kg
S2	Soil/sediment	PCB, Aroclor	600	1	ND	mg/kg
S3***	Soil/sediment	PCB, Aroclor (1260)	600	1	1	mg/kg

*Sample collection date was December 19, 2006.

**S1 is the sediment sample collected from the ditch near Beeland Street. PCB Aroclor type 1260 was detected

***S3 is the sediment sample collected from the ditch in Tanyard Branch. PCB Aroclor type 1260 was detected.

SITE INSPECTION

The site inspection was conducted on January 14, 2008. Attendees included Laura Roebuck (USACE), Erik Spalvins (EPA RPM), Tommy Ryals (APCO), Franklin Horn (APCO), Roy Hale (APCO), Justin Martindale (ADEM), and Tom Birks (ADEM). The City of Greenville was not represented.

A follow-up site inspection was conducted on July 28, 2008. Attendees included Laura Roebuck (USACE) and Roy Hale (APCO).

The purpose of the inspections was to assess the protectiveness of the remedy. Notes and observations from the site inspections were recorded on the Site Inspection Check List provided in Attachment 4. Photographs were taken by Laura Roebuck and Erik Spalvins and are provided in Attachment 5.

Mowbray site inspection details, January 14, 2008

The gate on Beeland Street was locked upon arrival. Tommy Ryals had a key, and access was obtained. A sign restricting access was posted at the locked gate. The property was fenced on three sides and is bordered on the fourth side by Tanyard Branch creek.

Site inspection activities

An animal burrow hole existed in the ground surface directly on top of the monolith cap. A stick, approximately 2 ½' in length was used to estimate the depth of the burrow hole, but the bottom was not reached with the stick. The hole diameter on the surface was approximately 3"- 4". The burrow hole could possibly be an armadillo burrow hole. There were other very small animal burrows noted in the ground surface covering the monolith.

The ditches were dry and lined with riprap. A few small tree branches were hanging above the northern fence.

The 'swamp' referenced in the site documents was not obvious as the former swamp was a grassy field. The site inspection did occur, however, during the height of a very severe regional drought. The creek level was very low.

The two monitoring wells were located on the site, in accordance with the preferred remedial alternative in the ROD and other site documents. Each well was adequately protected and covered. A metal identification tag was attached to each well. Each tag revealed a small amount of faded well details. The sign on the southern fence was faded and obscured by vines.

Mowbray site inspection details, July 28, 2008

A follow-up site inspection was conducted to document some work done at the site since the first site inspection. Roy Hale (APCO) and Laura Roebuck (USACE) participated in this follow-up site inspection.

New signs were on the fence near Tanyard Branch adjacent to First Street, and on the locked gate at the Beeland Street entrance. New metal monitoring well ID tags were affixed to both monitoring wells. Each tag contained stamped well details. The large animal burrow hole had been repaired. No other animal burrow holes were noticed.

Site inspection summary, results, and conclusions

Fencing was adequate, and no damage was noted. The grounds were adequately covered with grass. The weeds in the riprap in the ditches were under control. The sign on the southern fence which was faded and obscured by vines during the January site inspection was replaced with a new sign in July. The large animal burrow hole noted in the January site inspection was filled with a bentonite/clay mixture on January 16, 2008. APCO representatives report no problems with vandalism. Low-lying tree branches from the property to the north were noticed over the northern boundary fence.

INTERVIEWS

During the five-year review process, several individuals were interviewed in June 2008 concerning the Mowbray site. The individuals interviewed include PRPs, including the site O&M operator, ADEM, and the City of Greenville. No issues or concerns were expressed during the interviews. Details of the interviews are provided in Attachment 6.

VII. TECHNICAL ASSESSMENT

The following Questions A, B, and C were answered to provide a technical assessment of the site remedy.

QUESTION A: IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

Remedial Action Performance

The remedy is functioning as intended by the decision documents. Groundwater monitoring has had mostly non-detects for PCBs with a few very low detections, so exposure to PCBs in groundwater does not present unacceptable risks to humans at the site. The stabilization/solidification of the PCB contaminated soils into a capped 'monolith' is performing as expected. The cleanup levels set in the 1986 ROD appear to be achieved by a review of the Close-Out Report from 1991, the last three five-year reviews, and the monitoring results during this five-year review period.

Operation & Maintenance

The O&M of the cap has, on the whole, been effective. One area showed evidence of a burrowing animal during the site inspection in January 2008. The burrow did not penetrate beyond the soil layer, and so did not affect protectiveness. The PRP filled the burrow hole with

bentonite a few days after the January site inspection. According to APCO, O&M costs during this five-year review period have been fairly consistent with the costs in the previous years.

Opportunities for Optimization

Few opportunities for optimization exist. For future monitoring events, however, it is preferable that an independent laboratory conduct the groundwater and soil analysis.

Early Indicators of Potential Issues

No issues or problems associated with the constructed remedy that place protectiveness of the remedy at risk were observed.

Implementation of Institutional Controls and Other Measures

Although the preferred alternative in the ROD noted that institutional controls would be identified during the remedial design if necessary, ICs for the site have not been implemented. There are no restrictive covenants on the deed to the property to ensure long-term protectiveness. Site access and fencing is adequate. There are no immediate threats to the property.

QUESTION B: ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND REMEDIAL ACTION OBJECTIVES USED AT THE TIME OF THE REMEDY STILL VALID?

A review of the Applicable or Relevant and Appropriate Requirements (ARARs) listed in the 1986 ROD was conducted in order to answer the regulatory related portion of Question B. The ARAR review was conducted in accordance with the EPA guidance document, "Comprehensive Five-Year Review Guidance," EPA 540-R-01-007, June 2001. In particular, EPA reviewed the ROD to determine whether any standards for any chemical-specific ARARs set in the ROD have changed since the ROD was signed.

The cleanup goal for PCBs in soil and sediment was 25 mg/kg. This is within the recommended action level for soil under industrial land use assumptions of 10 – 25 mg/kg. Ongoing monitoring of the surface soils onsite show that no levels have been found above the residential recommended action level for soil of 1 mg/kg.

No groundwater cleanup goal was set in the ROD, so there were no groundwater ARARs. Groundwater monitoring has regularly occurred at the site. EPA has directed the PRP to monitor for PCBs in the groundwater and compare the results to the Safe Drinking Water Act for PCBs Maximum Contaminant Level (MCL) current drinking water MCL for PCBs of 0.5 ug/L.

QUESTION C: HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

No other information has come to light that could call into question the protectiveness of the remedy.

TECHNICAL ASSESSMENT SUMMARY

According to the data review, site inspection, and interviews, the remedy is functioning as intended by the preferred remedial alternative in the ROD. Groundwater monitoring has had mostly non-detects for PCBs with a few very low detections and the area is provided with public water supply, thus exposure to PCBs in groundwater does not present unacceptable risks to humans from the site. Groundwater, soil and sediment sample analysis results obtained during this five-year review period does not reveal PCB contamination at the site above the cleanup levels established in the ROD. The stabilization/solidification of the PCB contaminated soils into a 'monolith', which is capped, is performing as expected. The Operation & Maintenance of the cap has, on the whole, been effective.

Institutional controls for the property are inadequate. The preferred remedial alternative in the ROD noted that institutional controls would be identified during the remedial design if necessary, but ICs have not yet been implemented. To ensure long-term protectiveness, restrictive covenants should be placed on the site to prevent disturbance of the monolith. To be fully protective of human health, land use restrictions should be placed on all properties affected by the site with any PCB levels in soils above one part per million.

VIII. ISSUES

A few issues noted during the site inspection and data review are presented in this section.

Institutional Controls

ICs are inadequate for the property. There are no restrictions contained in the deed to the property. ICs are needed for long-term protectiveness. To be fully protective of human health at the site, ICs in the form of restrictive covenants and restrictive notices should be placed on all properties affected by the site with any PCB levels in soils above one part per million in order to prevent disturbance of the soil remedy.

Independent laboratory analysis

The PRP, APCO, currently does not use an independent laboratory for the O&M soil and groundwater analysis. The analyses of these samples have been conducted by APCO's in-house laboratory.

Detection limits

The detection limits for groundwater analysis is above the current MCL for PCBs. No exposure pathways exist for groundwater, but the detection limits should be improved.

Table 7

Issues

Issue	Currently Affects Protectiveness (Yes/No)	Affects Future Protectiveness (Yes/No)
ICs are inadequate for the property. There are no restrictions contained in the deed to the property. ICs are needed for long-term protectiveness.	No	Yes
The PRP, APCO, does not use an independent laboratory for the soil and groundwater analysis. The analyses of these samples have been conducted by APCO's in-house laboratory.	No	No
The detection limits for groundwater analysis is above the current MCL for PCBs. No exposure pathways exist for groundwater, but the detection limits should be improved.	No	No

IX. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Table 8 provides recommendations and follow-up actions to address the issues presented in Section VIII.

**Table 8
Recommendations and Follow-Up Actions**

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Mile- stone Date	Affects Protectiveness? (Yes/No)	
					Current	Future
ICs are inadequate for the property. There are no restrictions contained in the deed to the property. ICs are needed for long-term protectiveness.	The City of Greenville, which holds title to a portion of the property, along with APCO, the PRP, should execute and record an environmental covenant on the property. The environmental covenant should be placed on all properties affected by the site with any PCB levels in soils above one part per million in order to prevent disturbance of the soil remedy.	The City of Greenville/ EPA	EPA	12/30/08	No	Yes
The detection limits for groundwater analysis is above the current MCL for PCBs.	The detection limits should be improved.	APCO	EPA	12/01/08	No	No
The PRP, APCO, does not use an independent laboratory for the soil and groundwater analysis. The analyses of these samples have been conducted by APCO's in-house laboratory.	APCO should contract an independent laboratory for all future monitoring events.	APCO	EPA	12/01/08	No	No

X. PROTECTIVENESS STATEMENT

The remedy at Mowbray Engineering Company site currently protects human health and the environment. The stabilization/solidification of the PCB contaminated soils into a capped 'monolith' is performing as expected. The cleanup levels appear to be achieved based on a review of the Close-Out Report from 1991, the last three five-year reviews, and the results of this five-year review. However, in order for the remedy to be protective in the long-term, the City of Greenville, along with APCO, should execute and record an environmental covenant on the property.

XI. NEXT REVIEW

The next five-year review for the Mowbray Engineering Company site is required by September 2013, and within five years from the date of this review.

ATTACHMENTS

Attachment 1

LIST OF DOCUMENTS REVIEWED

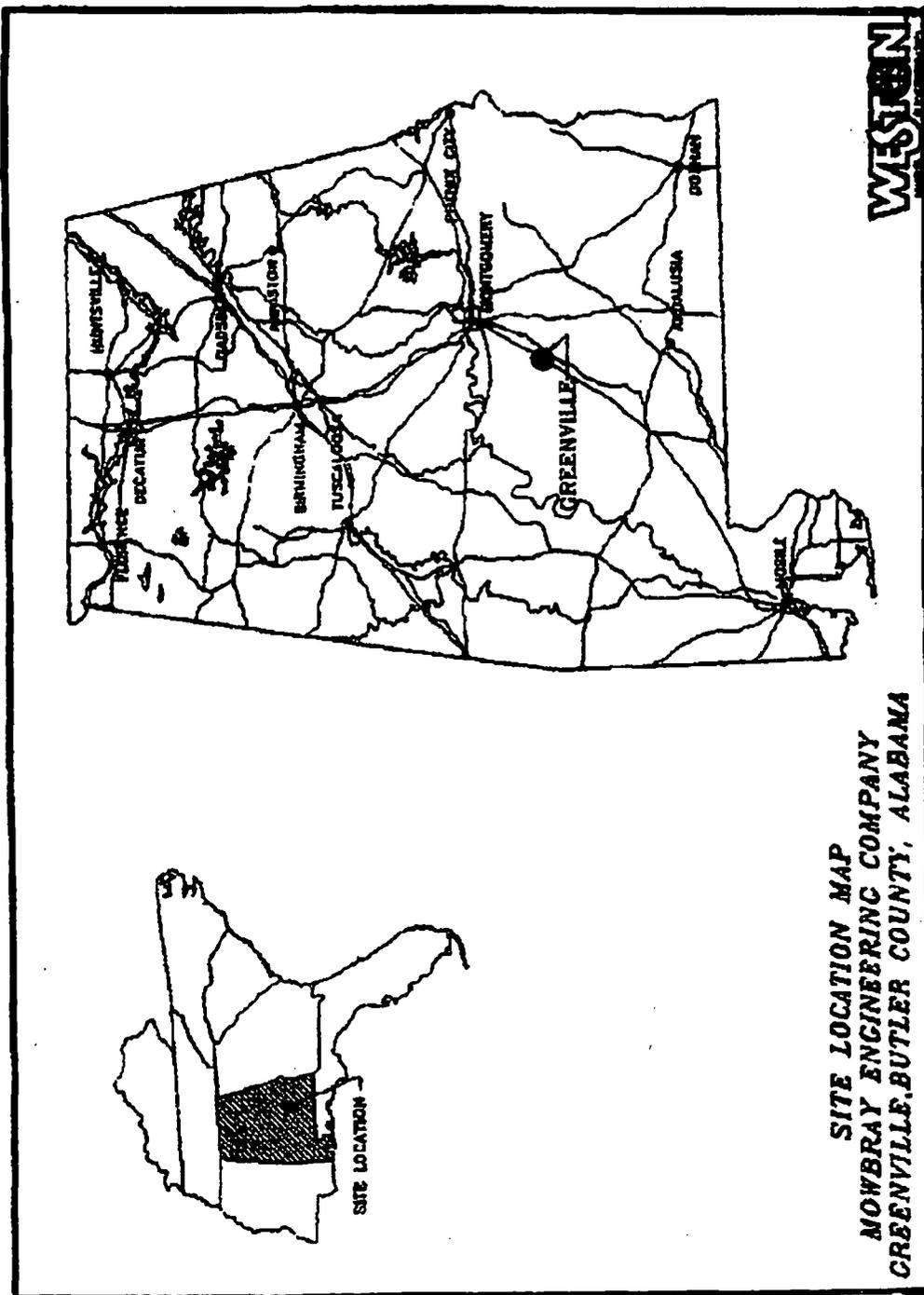
Documents Reviewed

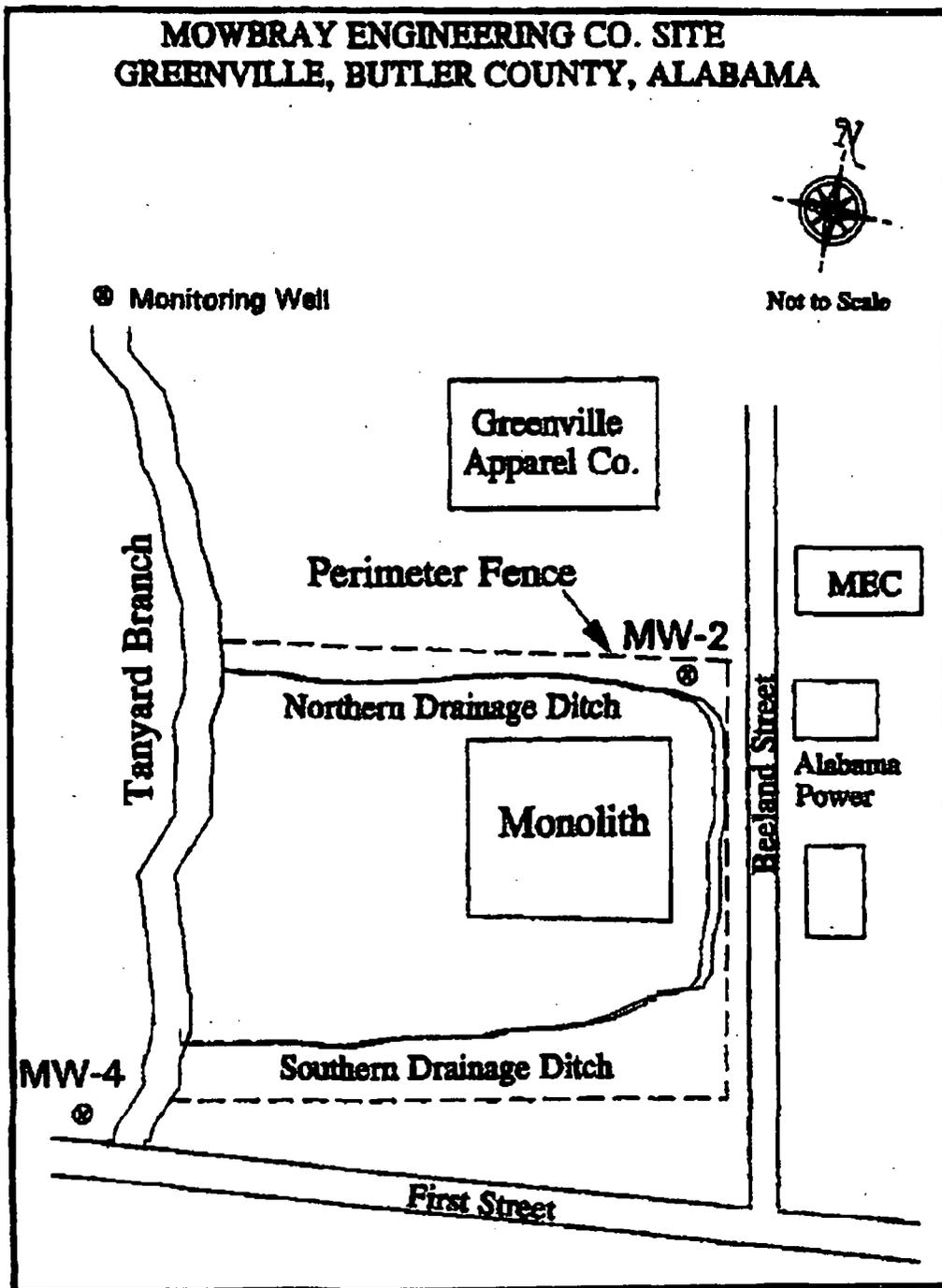
- EPA. 1986. EPA Superfund Record of Decision: Mowbray Engineering Company, EPA ID: ALD031618069, Greenville, AL, September 25, 1986.
- EPA. 1991. Consent Decree, Mowbray Engineering Company Site, Civil Action No. 90-2769, entered May 18, 1991.
- EPA. 1991a. Superfund Site Close Out Report, Mowbray Engineering Company Site, Greenville, Alabama, U.S. EPA Region 4. September 16, 1991.
- EPA. 1993. Five-Year Review Final Report, Revision 1, Mowbray Engineering Company Superfund Site, Greenville, Alabama, February 23, 1993.
- EPA Federal Register. 1993a. 40 CFR Part 300, National Oil and Hazardous Substance Contingency Plan; National Priorities List Update, Notice of Intent to Delete Mowbray Engineering Company Site from the National Priorities List: request for comments. Volume 58, No. 164, Thursday, August 26, 1993.
- EPA. 1998. 1998 Five-Year Review Final Report, Mowbray Engineering Company Site, Greenville, Alabama, August 3, 1998.
- EPA. 2001. Comprehensive Five-Year Review Guidance, EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001.
- EPA. 2002. OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), November 2002.
- EPA. 2003. Five-Year Review Report, Third Five-Year Review Report for Mowbray Engineering Company Site, Greenville, Butler County, Alabama, September 29, 2003.
- EPA. 2005. Letter from Richard Hartley, Hartley & Hickman Attorneys at Law, to Trevor Black, EPA regarding the deed and lack of deed restrictions, August 11, 2005.
- EPA. 2005a. Institutional Controls Review Checklist for Mowbray Engineering Company Site, completed by Humberto Guzman, September 13, 2005.
- EPA. 2006. Letter from Trevor Black, EPA to Richard Hartley and Steven McKinney, regarding recording of a restrictive easement or restrictive covenant on the Mowbray property, March 21, 2006.
- EPA. 2006a. Email message from Trevor Black, EPA to Derek Matory, EPA regarding Mowbray Institutional Controls, August 17, 2006.
- EPA. 2007. NPL Caliber Cleanup Site Summary for Mowbray Engineering Company, www.epa.gov/region4/waste/npl/nplal/mowbraa1.htm, October 2007.

EPA. 2008. *Draft* Environmental Covenant, for Mowbray Engineering Company Site, May 13, 2008.

State of Alabama. 2007. Alabama Uniform Environmental Covenants Act, Alabama Code 35-19-1. Effective January 1, 2008.

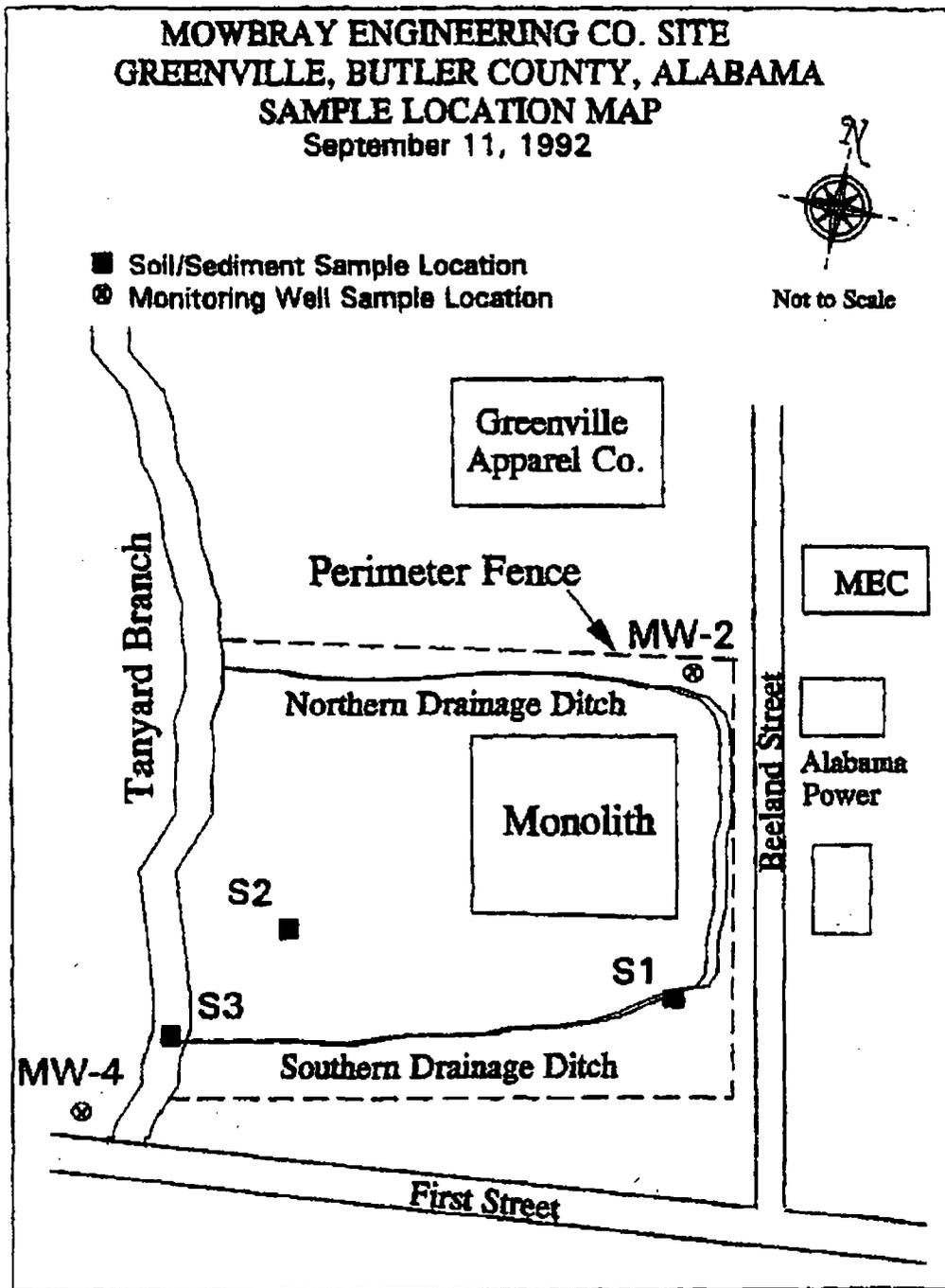
ATTACHMENT 2
LOCATION MAPS





ATTACHMENT 3

**SAMPLE DATA SHEETS AND THE
LABORATORY CERTIFICATE OF ANALYSIS SHEETS**



MOBRAY SITE MONITORING WELLS

DATE SAMPLED 12-19-06

MW #2

PCB (water sample)
collect 1 - 1 liter amber bottle - untreated

well depth 27.5' water table 12.7 #gal to bail 30 (5 gal) # gal actually bailed ~33
well bailed dry - yes no pH 4.72 sample time 1250
Conductivity 98 Temp 21.6° Condition Clear Lab I. D. AK34394
MW #4 Analysis time: 1255

PCB (water sample)
collect 1 - 1 liter amber bottle - untreated

well depth 35.0' water table 9.2 #gal to bail — # gal actually bailed 18
well bailed dry - yes no pH 6.05 sample time 1310
Conductivity 85 Temp 19.7 Condition Clear Lab I. D. AK34395
S1 Analysis time: 1315

Sample soil for PCB's Sample Time 1235
Sediment in ditch by Ireland Street Lab I. D. AK34396
S2

Sample soil for PCB's Sample Time 1255
Middle of Field Lab I. D. AK34397
S3

Sample soil for PCB's Sample Time 1300
Sediment in ditch by Tanyard Branch Lab I. D. AK34398

Plant personnel _____

Sampled by Z. Han + B. Hayes pH cal 4.0 9.00 7.0 7.00 10.0 10.00

Received by Chris Rob Time 12/20/06 @ 1720

Weather conditions Clear + Warm Air temp _____

Comments _____

Were samples stored on ice? YES NO

1.5°C

General Test Laboratory
 P.O. Box 2641
 Birmingham, Alabama 35291
 (205) 664 - 6081

CERTIFICATE OF ANALYSIS

To: Mr. Tommy Ryals
 12N-0830

Customer Account : WMWMOBRY
 Sample Date : 19-Dec-08
 Customer ID :
 Delivery Date : 21-Dec-06

Description: Mowbray MW #2
 PCB (water sample)

Laboratory ID Number: AK34394

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Pesticides</i>							
PCB, Aroclor 1242	RAH	1/2/2007	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1254	RAH	1/2/2007	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1221	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1232	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1248	RAH	1/2/2007	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1260	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1016	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
<i>General Characteristics</i>							
Conductivity	GFH	12/19/2006	EPA 120.1		0.	98	umhos/cm
Water Table	GFH	12/19/2006			0.0	12.7	Ft.
Field pH	GFH	12/19/2006	EPA 150.1		0.00	4.72	SU
Temperature	GFH	12/19/2006	Field Data		0.	21.6	Deg. C.
<i>Miscellaneous</i>							
Depth	GFH	12/19/2006			0.	27.5	Feet
Method 608 - Extraction Date	RAH	12/22/2006	DATE			12/21/06	

This Certificate is for the physical and/or chemical characteristics of the sample as

Comments:

cc:

Quality Control _____ Supervision _____ Date: 08-Jan-07

General Test Laboratory
 P.O. Box 2641
 Birmingham, Alabama 35291
 (205) 684 - 8081

CERTIFICATE OF ANALYSIS

To: Mr. Tommy Ryals
 12N-0830

Customer Account : WMWMOBRY
 Sample Date : 19-Dec-06
 Customer ID :
 Delivery Date : 21-Dec-06

Description: Mowbray MW #4
 PCB (water sample)

Laboratory ID Number: AK34395

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Pesticides</i>							
PCB, Aroclor 1242	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1254	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1221	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1232	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1248	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1280	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1016	RAH	1/2/2007	EPA 608		0.005	Not Detected	mg/l
<i>General Characteristics</i>							
Conductivity	GFH	12/19/2006	EPA 120.1		0.	85	umhos/cm
Water Table	GFH	12/19/2006			0.0	9.2	Ft.
Field pH	GFH	12/19/2006	EPA 150.1		0.00	6.05	SU
Temperature	GFH	12/19/2006	Field Data		0.	19.7	Deg. C.
<i>Miscellaneous</i>							
Depth	GFH	12/19/2006			0.	35.0	Feet
Method 808 - Extraction Date	RAH	12/22/2006	DATE			12/21/06	

This Certificate is for the physical and/or chemical characteristics of the sample as

Comments:

cc:

Quality Control _____ Supervision _____ Date: 06-Jan-07

General Test Laboratory
P.O. Box 2841
Birmingham, Alabama 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

To: Mr. Tommy Ryals
12N-0830

Customer Account : SMIMOWBR
Sample Date : 19-Dec-06
Customer ID : MOBRAY
Delivery Date : 21-Dec-06

Description: Mowbray Site - Beeland Street
PCB (soil sample)

Laboratory ID Number: AK34396

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Miscellaneous</i>							
PCB, Concentration	RAH	1/2/2007	EPA3550/600		1	1	mg/kg
PCB, Aroclor Type	RAH	1/2/2007	EPA 3550			1260	AROCLOR

This Certificate is for the physical and/or chemical characteristics of the sample as
Comments:

cc:

Quality Control _____ Supervision _____ Date: 06-Jan-07

Page 1

smk/NC

General Test Laboratory
P.O. Box 2641
Birmingham, Alabama 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

To: Mr. Tommy Ryals
12N-0830

Customer Account : SMIMOWBR
Sample Date : 19-Dec-06
Customer ID : MOBRAY
Delivery Date : 21-Dec-06

Description: Mowbray Site - Field
PCB (soil sample)

Laboratory ID Number: AK34397

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Miscellaneous</i>							
PCB, Concentration	RAH	1/2/2007	EPA3550/600		1.	Not Detected	mg/kg
PCB, Aroclor Type	RAH	1/2/2007	EPA 3550			Not Detected	AROCLOR

This Certificate is for the physical and/or chemical characteristics of the sample as
Comments:

cc:

Quality Control _____ Supervision _____ Date: 06-Jan-07

General Test Laboratory
P.O. Box 2841
Birmingham, Alabama 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

To: Mr. Tommy Ryals
12N-0830

Customer Account : SMIMOWBR
Sample Date : 19-Dec-06
Customer ID : MOBRAY
Delivery Date : 21-Dec-06

Description: Mobray Site - Tanyard Branch
PCB (soil sample)

Laboratory ID Number: AK34398

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Miscellaneous</i>							
PCB, Aroclor Type	RAH	1/2/2007	EPA 3550			1260	AROCLOR
PCB, Concentration	RAH	1/2/2007	EPA3550/600		1	1	mg/kg

This Certificate is for the physical and/or chemical characteristics of the sample as

Comments:

cc:

Quality Control _____ Supervision _____ Date: 06-Jan-07

Page 1

smk/NC

MOBRAY SITE MONITORING WELLS

DATE SAMPLED 12-10-04

MW #2

PCB (water sample)
collect 1 - 1 liter amber bottle - untreated

well depth 27.5' water table 11.3' #gal to bail 32 # gal actually bailed 33
well bailed dry - yes no pH 5.08 sample time 1105
Conductivity 76 Temp. 20.9 Condition Clear Lab I. D. AT33859

MW #4

PCB (water sample)
collect 1 - 1 liter amber bottle - untreated

well depth 35.0' water table 8.6' #gal to bail 21 # gal actually bailed 21
well bailed dry - yes no pH 6.25 sample time 1054
Conductivity 78 Temp. 20.8 Condition Clear Lab I. D. AT33860

S1

Sample soil for PCB's Sample Time 1050
Sediment in ditch by Beeland Street Lab I. D. AT33861

S2

Sample soil for PCB's Sample Time 1100
Middle of Field Lab I. D. 62

S3

Sample soil for PCB's Sample Time 1115
Sediment in ditch by Tanyard Branch Lab I. D. 63

Plant personnel _____

Sampled by B. A. & F. Horn pH cal 4.0 4.00 7.0 7.00 10.0 _____

Received by [Signature] Time 7:30

Weather conditions Clear & Warm Air temp 70°F

Comments _____

Were samples stored on ice? YES ✓ NO _____

General Test Laboratory
 P.O. Box 2841
 Birmingham, Alabama 35291
 (205) 664 - 6081



CERTIFICATE OF ANALYSIS

TO: Mr. J. M. Godfrey
 12N-0830

Customer Account : WMWMOBRY

Sample Date : 10-Dec-04

Customer ID :

Received Date : 13-Dec-04

Description : Mowbray MW

Laboratory ID Number : A133859

Test Name	Reference	VSpec	MDL	Result	Units
Method 608 - Extraction Date	DATE			12/15/04	
Depth			0.	27.5	Feet
Conductivity	EPA 120.1		0.	76	umhos/cm
Water Table			0.0	11.3	Ft.
Field pH	EPA 150.1		0.00	5.08	SU
Temperature	Field Data		0.	20.9	Deg. C.
PCB, Aroclor 1242	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1254	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1221	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1232	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1248	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1260	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1016	EPA 608		0.005	Not Detected	mg/l

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments

CC:

Quality Control *[Signature]* Supervision *[Signature]* Date: 12/21/2004

General Test Laboratory
 P. O. Box 2041
 Birmingham, Alabama 35291
 (205) 664 - 6081



CERTIFICATE OF ANALYSIS

TO: Mr. J. M. Godfrey
 12N-0830

Customer Account : WMWMOBRY
 Sample Date : 10-Dec-04
 Customer ID :
 Received Date : 13-Dec-04

Description : Mowbray MW

Laboratory ID Number : AI33860

Test Name	Reference	VSpec	MDL	Result	Units
Method 608 - Extraction Date	DATE			12/15/04	
Depth			0.	35	Feet
Conductivity	EPA 120.1		0.	78	umhos/cm
Water Table			0.0	8.6	Ft.
Field pH	EPA 150.1		0.00	6.25	SU
Temperature	Field Data		0.	20.8	Deg. C.
PCB, Aroclor 1242	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1254	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1221	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1232	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1248	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1260	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1016	EPA 608		0.005	Not Detected	mg/l

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments

CC:

Quality Control *Jayna* Supervision *Charles* Date: 12/21/2004

General Test Laboratory
P.O. Box 2641
Birmingham, Alabama 35291
(205) 664 - 6081



CERTIFICATE OF ANALYSIS

TO: Mr. J. M. Godfrey
12N-0830

Customer Account : SMIMOWBR
Sample Date : 10-Dec-04
Customer ID : MOWBRAY ENG
Received Date : 13-Dec-04

Description : Mowbray Soil
Beeland Street Sediment

Laboratory ID Number : AI33861

Test Name	Reference	VSpec	MDL	Result	Units
PCB, Concentration	EPA3550/600		1.	Not Detected	mg/kg
PCB, Aroclor Type	EPA 3550			Not Detected	AROCOLOR

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments

CC:

Quality Control

Supervision

Date: 12/21/2004

General Test Laboratory
P.O. Box 2641
Birmingham, Alabama 35291
(205) 664 - 6081



CERTIFICATE OF ANALYSIS

TO: Mr. J. M. Godfrey
12N-0830

Customer Account : SMIMOWBR
Sample Date : 10-Dec-04
Customer ID : MOWBRAY ENG
Received Date : 13-Dec-04

Description : Mowbray Soil
Middle of Field

Laboratory ID Number : AI33862

Test Name	Reference	VSpec	MDL	Result	Units
PCB, Concentration	EPA3550/600		1.	Not Detected	mg/kg
PCB, Aroclor Type	EPA 3550			Not Detected	AROCLOR

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments

CC:

Quality Control

Supervision

Date: 12/21/2004

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P.O. Box 2841
Birmingham, Alabama 35291
(205) 664 - 6081



CERTIFICATE OF ANALYSIS

TO: Mr. J. M. Godfrey
12N-0830

Customer Account : SMIMOWBR
Sample Date : 10-Dec-04
Customer ID : MOWBRAY ENG
Received Date : 13-Dec-04

Description : Mobray Soil
Tanyard Brunch Sediment

Laboratory ID Number : A133863

Test Name	Reference	VSpec	MDL	Result	Units
PCB, Aroclor Type	EPA 3550			1260	AROCLOR
PCB, Concentration	EPA3550/600		1.	1.	mg/kg

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments

CC:

Quality Control

Supervision

Date: 12/21/2004

MOBRAY SITE MONITORING WELLS

DATE SAMPLED 11-11-03

MW #2

PCB (water sample)

collect 1 - 1 liter amber bottle - untreated

(3 vials) Condition Clear

well depth 20.5 water table 10.9 #gal to bail 33 #gal actually bailed 33 Temp. 22.6C

well bailed dry - yes no pH 5.54 sample time 1245

Cond. 58 uS/cm Anal. Time 1249 Lab I. D. PH34758

MW #4

PCB (water sample)

collect 1 - 1 liter amber bottle - untreated

Condition Cloudy

well depth 35 water table 9.1' #gal to bail #gal actually bailed 22 Temp. 19.8C

well bailed dry - yes no pH 6.65 sample time 1300

Cond. 58 uS/cm Anal. Time 1303 Lab I. D. PH34759

S1

Sample soil for PCB's

..... Sample Time 1220 Lab I. D.

S2

Sample soil for PCB's

..... Sample Time 1230 Lab I. D.

S3

Sample soil for PCB's

..... Sample Time 1240 Lab I. D.

Plant personnel

Sampled by J. Allen + B. Hayes pH cal 4.0 4.00 7.0 7.00 10.0 10.00

Received by J. G. McWaters Time 140/11-13

Weather conditions Air temp

Comments

Were samples stored on ice? YES ✓ NO

General Test Laboratory
P.O. Box 2841
Birmingham, Alabama 35291
(205) 664 - 6081

So. Div.



CERTIFICATE OF ANALYSIS

To: Mr. J. M. Godfrey
12N-0830

Customer Account : SMIMOWBR
Sample Date : 11-Nov-03
Customer ID : MOWBRAY ENG CO
Delivery Date : 13-Nov-03

Description: Mowbray Site
S# 1 - Soil

Laboratory ID Number: AH34766

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Miscellaneous</i>							
PCB, Aroclor Type	RAH	11/26/2003	EPA 3550			Not Detected	AROCLOR
PCB, Concentration	RAH	11/26/2003	EPA3550/800		1	Not Detected	mg/kg

This Certificate is for the physical and/or chemical characteristics of the sample as submitted.

Comments:

cc:

Quality Control Amel Supervision Chau Hon Date: 02-Dec-03

General Test Laboratory
P.O. Box 2041
Birmingham, Alabama 35291
(205) 864 - 6081



CERTIFICATE OF ANALYSIS

To: Mr. J. M. Godfrey
12N-0830

Customer Account : SMIMOWBR
Sample Date : 11-Nov-03
Customer ID : MOWBRAY ENG CO
Delivery Date : 13-Nov-03

Description: Mowbray Site
S# 2 - Soil

Laboratory ID Number: AH34787

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Miscellaneous</i>							
PCB, Aroclor Type	RAH	11/26/2003	EPA 3550			Not Detected	AROCLOR
PCB, Concentration	RAH	11/26/2003	EPA3550/600		1.	Not Detected	mg/kg

This Certificate is for the physical and/or chemical characteristics of the sample as submitted

Comments:

cc:

Quality Control *Amel* Supervision *Chak* Date: 02-Dec-03

General Test Laboratory
P.O. Box 2641
Birmingham, Alabama 35291
(205) 664 - 6081



CERTIFICATE OF ANALYSIS

To: Mr. J. M. Godfrey
12N-0830

Customer Account : SMIMOWBR
Sample Date : 11-Nov-03
Customer ID : MOWBRAY ENG CO
Delivery Date : 13-Nov-03

Description: Mowbray Site
S# 3 - Soil

Laboratory ID Number: AH34768

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Miscellaneous</i>							
PCB, Aroclor Type	RAH	11/26/2003	EPA 3550			Not Detected	AROCLOR
PCB, Concentration	RAH	11/26/2003	EPA3550/600		1.	Not Detected	mg/kg

This Certificate is for the physical and/or chemical characteristics of the sample as submitted.

Comments:

cc:

Quality Control *[Signature]* Supervision *[Signature]* Date: 02-Dec-03

Alabama Power
 General Test Laboratory
 P.O. Box 2641
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 (205) 664 - 6081



CERTIFICATE OF ANALYSIS

To: Mr. J. M. Godfrey
 12N-0830

Customer Account : WMWMOBRY
 Sample Date : 11-Nov-03
 Customer ID :
 Delivery Date : 13-Nov-03

Description: Mowbray MW
 MW#2

Laboratory ID Number: AH34758

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
Pesticides							
PCB, Aroclor 1242	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1254	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1221	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1232	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1248	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1260	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
PCB, Aroclor 1018	RAH	11/24/2003	EPA 808		0.005	Not Detected	mg/l
General Characteristics							
Water Table	HRG	11/13/2003			0.0	10.9	Ft.
Conductivity	HRG	11/13/2003	EPA 120.1		0.	58.	umhos/cm
Field pH	HRG	11/13/2003	EPA 150.1		0.00	5.54	SU
Temperature	HRG	11/13/2003	Field Data		0.	22.6	Deg. C.
Miscellaneous							
Depth	FH/	11/11/2003			0.	27.5	feet

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Comments:

cc:

Quality Control _____ Supervision _____ Date: 18-Jun-08

Alabama Power
 General Test Laboratory
 P.O. Box 2641
 Birmingham, Alabama 35291
 (205) 664 - 6081



CERTIFICATE OF ANALYSIS

To: Mr. J. M. Godfrey
 12N-0830

Customer Account : WMWMOBRY
 Sample Date : 11-Nov-03
 Customer ID :
 Delivery Date : 13-Nov-03

Description: Mowbray MW
 MW#4

Laboratory ID Number: AH34759

Name	Analyst	Test Date	Reference	Vio Spec	MDL	Results	Units
<i>Pesticides</i>							
PCB, Aroclor 1242	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1254	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1221	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1232	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1248	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1260	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
PCB, Aroclor 1016	RAH	11/24/2003	EPA 608		0.005	Not Detected	mg/l
<i>General Characteristics</i>							
Water Table	HRG	11/13/2003			0.0	9.1	ft.
Conductivity	HRG	11/13/2003	EPA 120.1		0.	86.	umhos/cm
Field pH	HRG	11/13/2003	EPA 150.1		0.00	6.65	SU
Temperature	HRG	11/13/2003	Field Data		0.	19.8	Deg. C.
<i>Miscellaneous</i>							
Depth	FH/	11/11/2003			0.	35.	feet

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

Comments:

cc:

Quality Control _____ Supervisor _____

Date: 19-Jun-08

ATTACHMENT 4
SITE INSPECTION CHECK LIST

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION			
Site name: Mowbray Engineering Company	Date of inspection: 14 January 2008 & 28 July 2008		
Location and Region: Region 4	EPA ID: ALD031618069		
Agency, office, or company leading the five-year review: US Army Corps of Engineers	Weather/temperature: temp in the 50's; partly cloudy; temp in the 90's, sunny, high humidity		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Landfill cover/containment <input type="checkbox"/> RCRA cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Vertical barrier walls (slurry wall) <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Institutional controls </td> </tr> </table>		<input checked="" type="checkbox"/> Landfill cover/containment <input type="checkbox"/> RCRA cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Vertical barrier walls (slurry wall) <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Institutional controls
<input checked="" type="checkbox"/> Landfill cover/containment <input type="checkbox"/> RCRA cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Vertical barrier walls (slurry wall) <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Institutional controls		
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (Check all that apply)			
1. O&M site manager <u>Tommy Ryals</u> <u>Environmental Affairs Supervisor</u> <u>19 June 2008</u> <div style="display: flex; justify-content: space-between; font-size: small;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input checked="" type="checkbox"/> by phone Phone no. <u>205-257-4102</u> Problems, suggestions; <input checked="" type="checkbox"/> Report attached _____ _____			
2. O&M staff <u>Franklin Horn</u> <u>O&M field technician</u> <u>2 July 2008</u> <div style="display: flex; justify-content: space-between; font-size: small;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input checked="" type="checkbox"/> by phone Phone no. <u>205-664-6054</u> Problems, suggestions; <input checked="" type="checkbox"/> Report attached _____ _____			

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input checked="" type="checkbox"/> Maintenance logs Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A

C. Institutional Controls (ICs)			
1. Implementation and enforcement			
Site conditions imply ICs not properly implemented	<input type="checkbox"/>	Yes	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/> N/A
Site conditions imply ICs not being fully enforced	<input type="checkbox"/>	Yes	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/> N/A
Type of monitoring (e.g., self-reporting, drive by) _____			
Frequency _____			
Responsible party/agency _____			
Contact _____			
	Name	Title	Date Phone no.
Reporting is up-to-date <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Reports are verified by the lead agency <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Specific requirements in deed or decision documents have been met <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Violations have been reported <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Other problems or suggestions: <input type="checkbox"/> Report attached			

2. Adequacy <input type="checkbox"/> ICs are adequate <input checked="" type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A			
Remarks <u>Appropriate IC's have not been implemented at this site. This property has not been designated for 'unrestricted use/unlimited exposure'. Since this site contains a capped monolith of solidified contaminated soils, it should have some type of IC to protect the monolith from being disturbed, particularly in the event the property is sold at some point in the future. A deed restriction (i.e. environmental covenant) preventing any activity that would impact the monolith would be an appropriate IC.</u>			
D. General			
1. Vandalism/trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident			
Remarks <u>Franklin Horn of Alabama Power participated in the site inspection and reported no problems with vandalism to date. Mr. Horn inspects the site once/month.</u>			
2. Land use changes on site <input checked="" type="checkbox"/> N/A			
Remarks _____			
3. Land use changes off site <input checked="" type="checkbox"/> N/A			
Remarks <u>mix of residential and industrial (i.e. light industrial)</u>			
VI. GENERAL SITE CONDITIONS			
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1. Roads damaged <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A			
Remarks _____			

B. Other Site Conditions	
Remarks _____ _____ _____ _____	
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Landfill Surface	
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____
2.	Cracks <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____
3.	Erosion <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____
4.	Holes <input checked="" type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent <u>approx 12"</u> Depth <u>> 2.5'</u> Remarks <u>An animal burrow hole in the surface of the landfill existed in the July site inspection. Using a stick approx 2 1/2' long to reach the bottom of the hole was unsuccessful. By the July site inspection, the hole had been filled with a bentonite/clay mixture.</u>
5.	Vegetative Cover <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____
6.	Alternative Cover (armored rock, concrete, etc.) <input checked="" type="checkbox"/> N/A Remarks _____
7.	Bulges <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____	
9.	Slope Instability <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks _____		
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay	
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay	
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay	
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement	
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation	
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion	

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	<input type="checkbox"/> No evidence of excessive growth		
	<input type="checkbox"/> Vegetation in channels does not obstruct flow		
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Remarks _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	
	<input type="checkbox"/> N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Evidence of leakage at penetration		
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Evidence of leakage at penetration		
	Remarks _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Evidence of leakage at penetration		
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A
	Remarks _____		

E. Gas Collection and Treatment		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Gas Treatment Facilities	<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction
		<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
			<input type="checkbox"/> Collection for reuse
Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
Remarks _____			
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
			<input type="checkbox"/> N/A
Remarks _____			
F. Cover Drainage Layer		<input type="checkbox"/> G Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			
G. Detention/Sedimentation Ponds		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____ Depth _____		<input type="checkbox"/> N/A
	<input type="checkbox"/> Siltation not evident		
Remarks _____			
2.	Erosion Areal extent _____ Depth _____		
	<input type="checkbox"/> Erosion not evident		
Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			

H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Deformations <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____
2.	Degradation <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident Remarks _____
I. Perimeter Ditches/Off-Site Discharge <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Siltation <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Siltation not evident Areal extent _____ Depth _____ Remarks _____
2.	Vegetative Growth <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks <u>the region was in period of severe drought.</u>
3.	Erosion <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____
4.	Discharge Structure <input type="checkbox"/> Functioning <input checked="" type="checkbox"/> N/A Remarks _____
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Settlement <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____
2.	Performance Monitoring Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____

IX. GROUNDWATER/SURFACE WATER REMEDIES <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____
B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____

C. Treatment System <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Treatment Train (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____
D. Monitoring Data	
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
Remarks _____			
X. OTHER REMEDIES			
There are no other remedies at this site.			
XI. OVERALL OBSERVATIONS			
A.	Implementation of the Remedy		
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
<u>The remedy appears to be functioning as designed to prevent offsite migration of PCB. The remedial action consisted of onsite solidification and stabilization of approximately 2500 cubic yards of PCB contaminated soil (monolith), capping of the monolith, construction of a diversion ditch, fencing off the swamp area, grading and revegetating the swamp area, and some other measures. The monitoring records since the last 5-year review indicate that PCB contamination is not migrating offsite. The landfill cover appears to be intact, properly grassed, and access is restricted to the general public. Institutional controls should be in place to restrict the reuse of the property, in the event the property is sold in the future.</u>			
B.	Adequacy of O&M		
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
<u>Alabama Power has been conducting the O&M on this site since 1992. The site is inspected monthly, fencing maintained, grass mowed, access restricted, diversion drainage ditch maintained, and monitoring wells sampled and analyzed for PCB concentrations every 2 years.</u>			
<u>Alabama Power provided the lab analysis for the 3 sampling events since the last 5-year review, and the monthly site inspection forms.</u>			
<u>It appears the site is maintained fairly well. A few issues were noted at the 5-year review site inspection in January 2008, but the minor issues were addressed by the PRP by the July 2008 follow-up site inspection.</u>			

C. Early Indicators of Potential Remedy Problems
<p>Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p>N/A</p> <hr/>
D. Opportunities for Optimization
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p><u>APCO conducts the O&M monitoring. They collect soil, sediment and groundwater samples, and analyze for PCBs in their own laboratory. In the future, APCO should contract an independent lab to conduct the O&M soil and groundwater analysis.</u></p> <hr/> <hr/> <hr/> <hr/>

ATTACHMENT 5
PHOTOGRAPHS DOCUMENTING SITE CONDITIONS

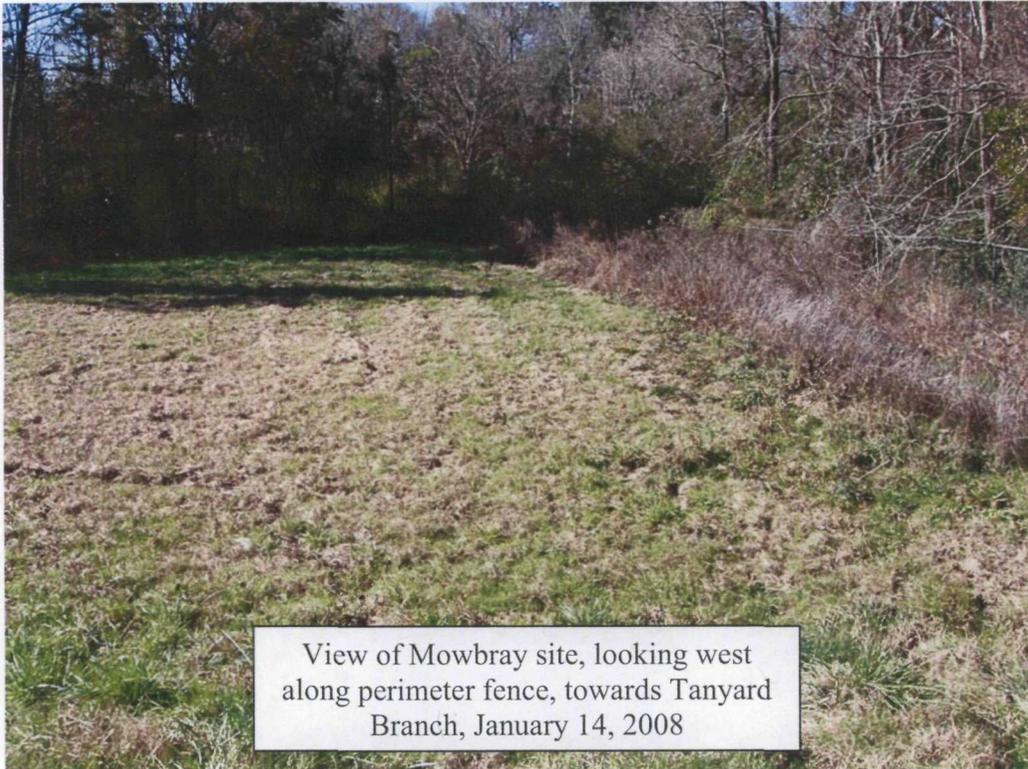


Site Inspection team
at Mowbray Eng. Co.
14 January 2008

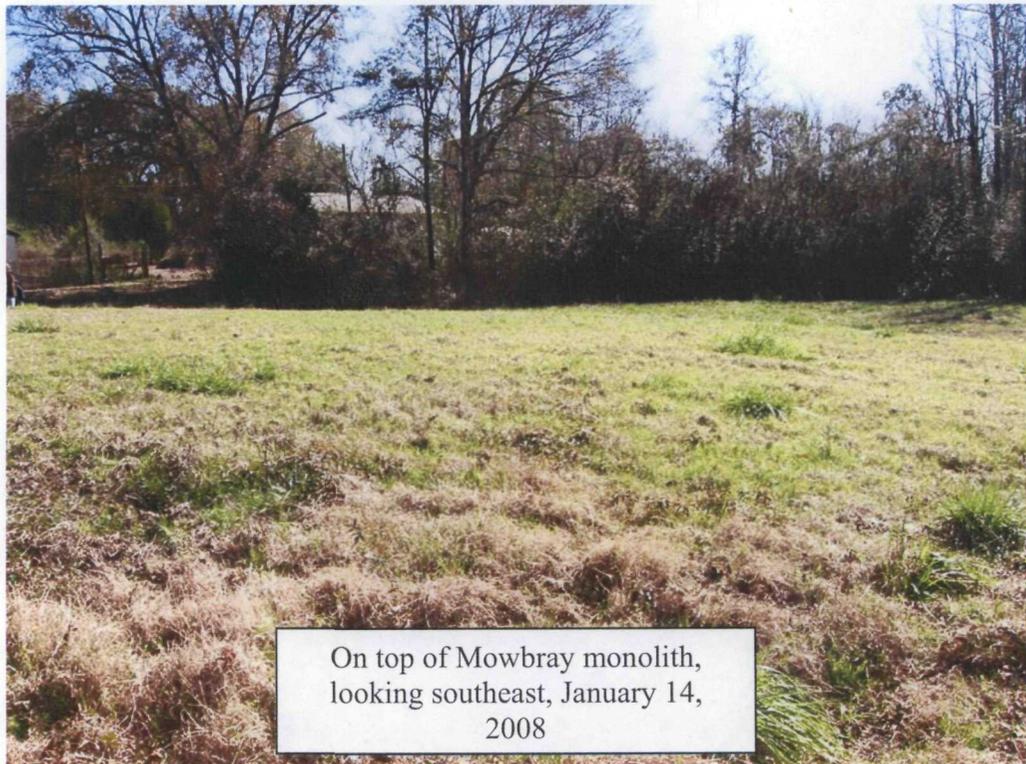


Gated locked
access to
Mowbray site





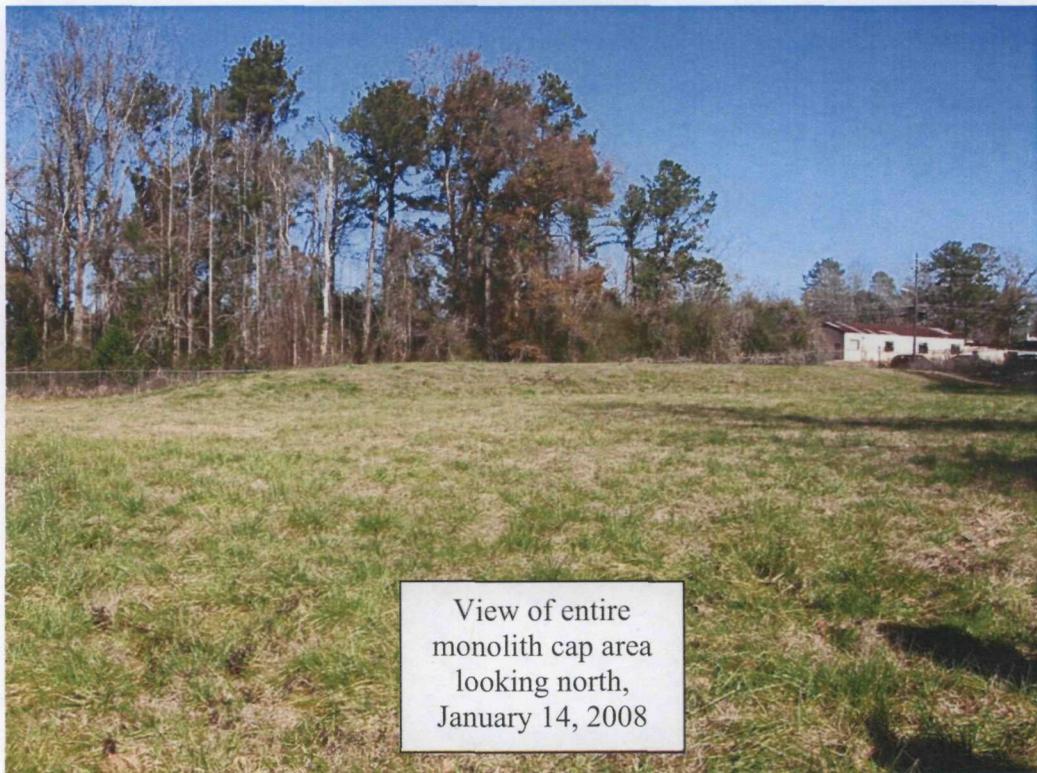
View of Mowbray site, looking west
along perimeter fence, towards Tanyard
Branch, January 14, 2008



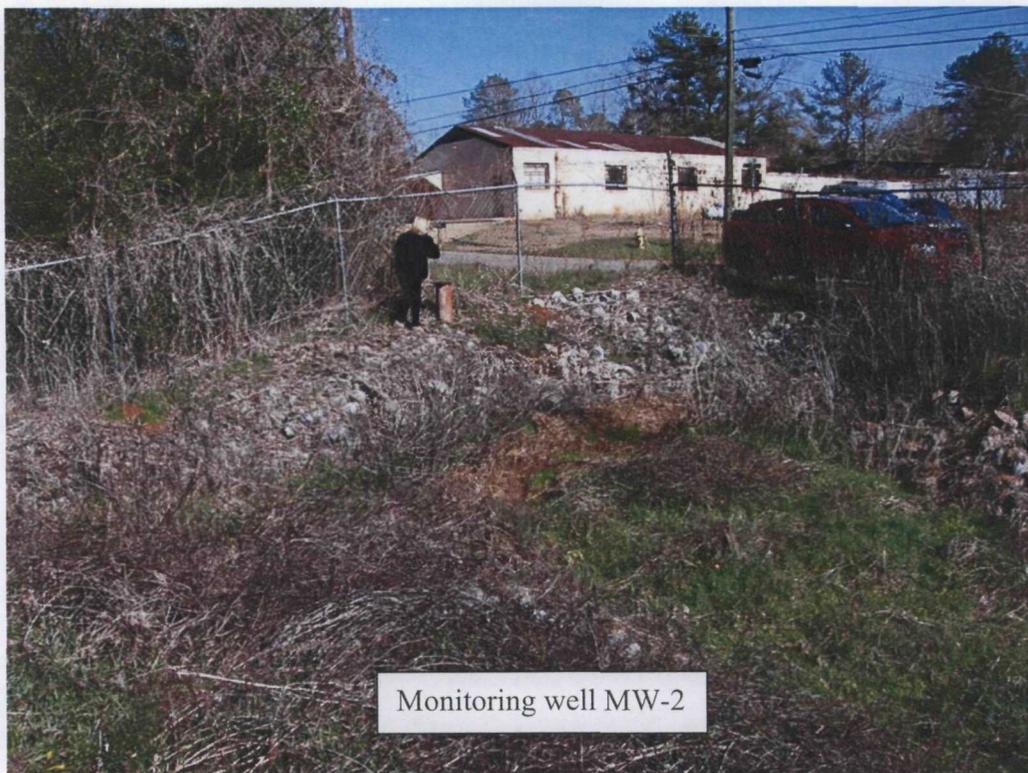
On top of Mowbray monolith,
looking southeast, January 14,
2008



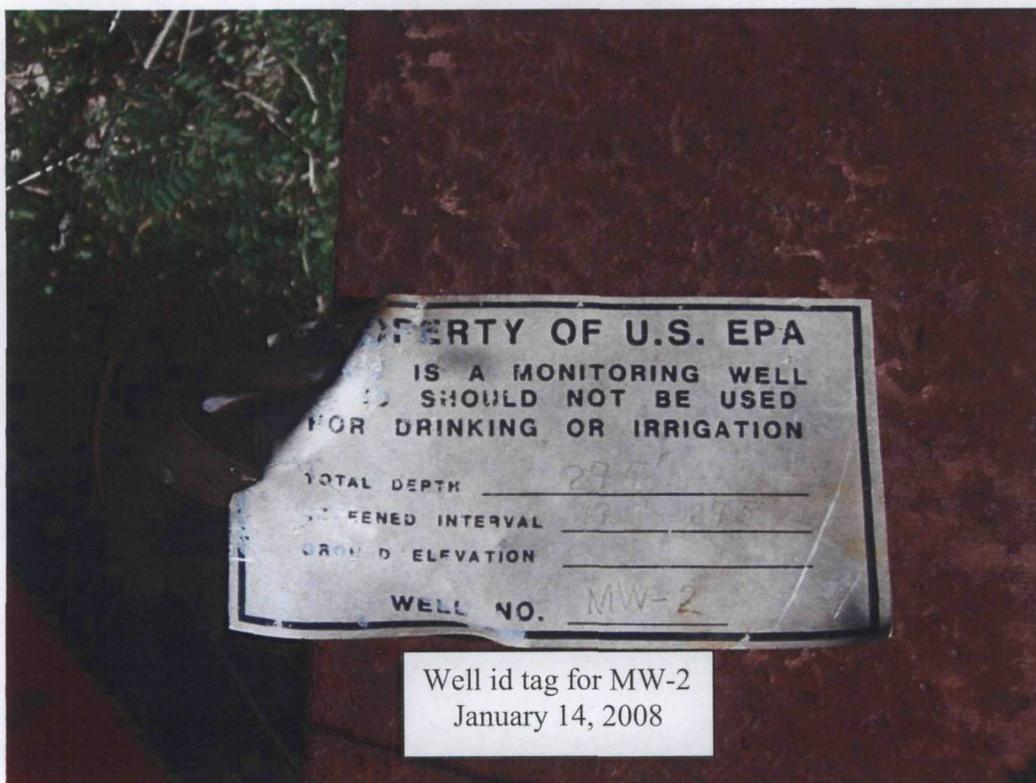
View of south edge of monolith looking north towards perimeter fence, January 14, 2008



View of entire monolith cap area looking north, January 14, 2008



Monitoring well MW-2



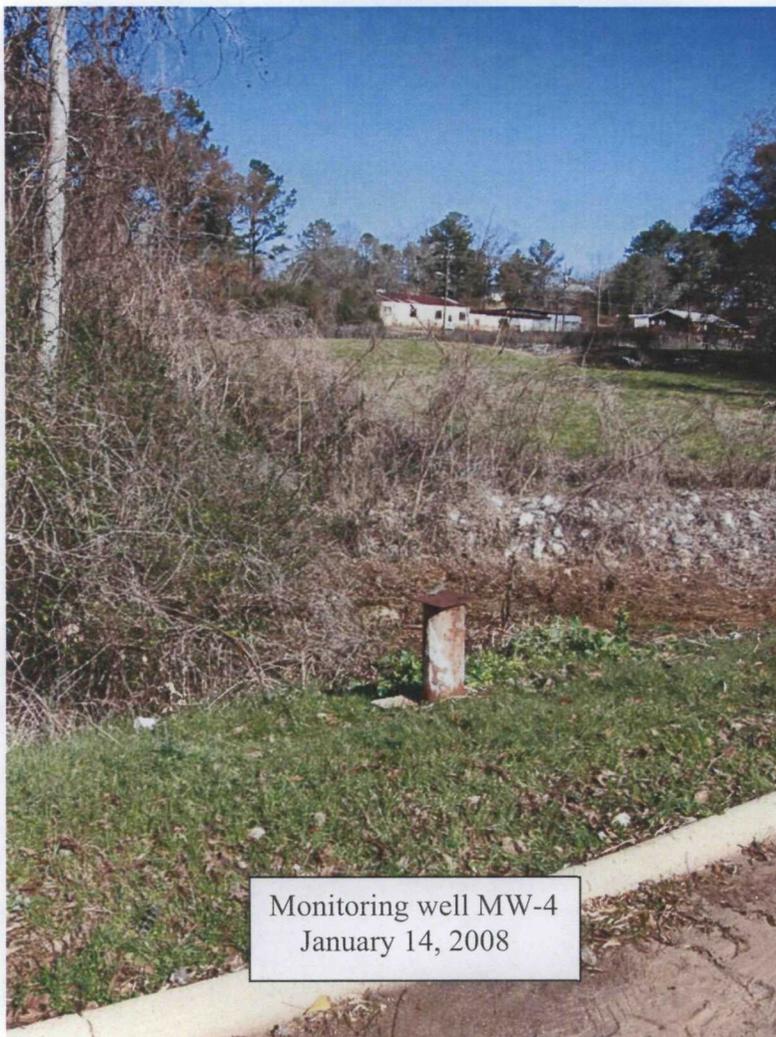
Well id tag for MW-2
January 14, 2008



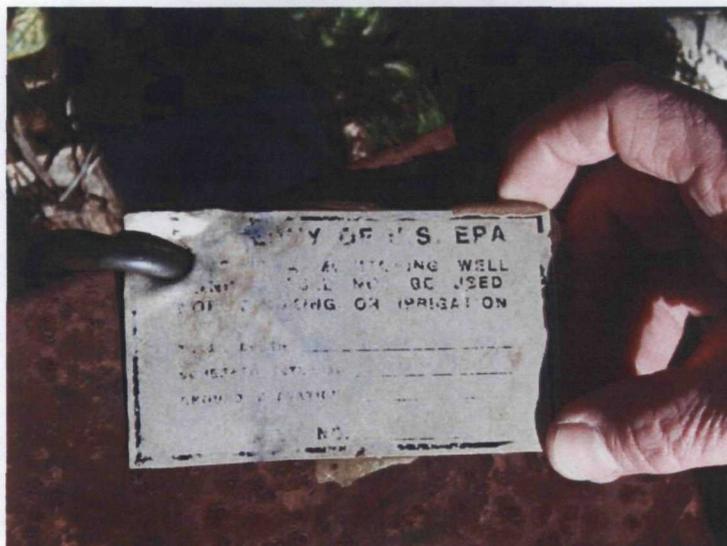
Well id tag for MW-2
July 28, 2008



Monitoring well
MW-4



Monitoring well MW-4
January 14, 2008



MW-4 well id tag
January 14, 2008



MW-4 well id tag
July 28, 2008



Ditch
January 14, 2008



ATTACHMENT 6
SITE INTERVIEW RECORDS

INTERVIEW RECORD		
Site Name: Mowbray Engineering Company Superfund Site		EPA ID No.: ALD031618069
Subject: 5 year review		Time: 11:30 a.m; Date: 19 June 2008
Type: <input checked="" type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing
Location of Visit: Mowbray Engineering Company site (on January 14, 2008)		
Contact Made By:		
Name: Laura Roebuck	Title: Geologist	Organization: US Army Corps of Engineers
Individual Contacted:		
Name: Thomas Ryals	Title: Environmental Supervisor	Organization: Alabama Power Co. (PRP)
Telephone No: 205-257-4102	Street Address: 600 North 18th Street	
Fax No: 205-257-4349	City, State, Zip: Birmingham, AL 35291-0830	
Summary Of Conversation		
<p>Tommy is the Environmental Affairs Supervisor, in the Environmental Affairs Office of Alabama Power Company in Birmingham. Tommy took over the duties of Mike Godfrey in 2005. Before that time, Tommy was not involved in the Mowbray site at all.</p> <p>Tommy is not aware of any problems at the Mowbray site since he has been involved with the site. Tommy has no concerns about the site. He does not know of any plans to reuse the property, and does not know of any one in the community who has concerns.</p> <p>Tommy believes that the O&M monitoring is sufficient for the remedial action.</p> <p>Franklin Horn is the employee who visits this site, conducts the inspections and monitoring events. Franklin sends the site inspection sheets to Tommy, and notifies Tommy of problems or issues.</p> <p>Tommy had no other specific comments to make about the site.</p>		

INTERVIEW RECORD		
Site Name: Mowbray Engineering Company Superfund Site		EPA ID No.: ALD031618069
Subject: 5 year review		Time: 3:30 p.m; Date: 20 June 2008
Type: <input checked="" type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing
Location of Visit: Mowbray Engineering Company site (on January 14, 2008)		
Contact Made By:		
Name: Laura Roebuck	Title: Geologist	Organization: US Army Corps of Engineers
Individual Contacted:		
Name: Tom Birks	Title: Environmental Engineering Specialist Senior	Organization: ADEM
Telephone No: 334-271-7967 Fax No: 334-279-3050		Street Address: 1400 Coliseum Blvd City, State, Zip: Montgomery, AL 36130-1463
Summary Of Conversation		
<p>Tom is in the Remediation Engineering Section, in the Governmental Hazardous Waste Branch in the Land Division at ADEM in Montgomery. Tom recently inherited the Mowbray Engineering Site from Justin Martindale, upon Justin's recent retirement from ADEM. Before the January 2008 site inspection for this five-year review, Tom had not been involved with the Mowbray site.</p> <p>Tom is not aware of any problems at the Mowbray site since he has been involved with the site. According to information that Tom received from Justin, the Mowbray site has not had any issues, and there have been no problems. The O&M for the site seems to be adequate.</p> <p>Tom had no other specific comments to make about the site.</p>		

INTERVIEW RECORD		
Site Name: Mowbray Engineering Company Superfund Site		EPA ID No.: ALD031618069
Subject: 5 year review		Time: 10:00 a.m Date: 24 June 2008
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing
Location of Visit:		
Contact Made By:		
Name: Laura Roebuck	Title: Geologist	Organization: US Army Corps of Engineers
Individual Contacted:		
Name: Mayor Dexter McLendon; Eddie Anderson, Building Inspector; Milton Luckie, Director of Public Director	Title: Mayor; Building Inspector; Director of Public Works	Organization: City of Greenville
Telephone No: 334-382-2647		Street Address: 119 East Commerce Street, City, State, Zip: Greenville, AL 36037
Summary Of Conversation		
<p>Three City of Greenville employees participated in a conference call for this site interview. The employees are the Mayor of Greenville, Mayor Dexter McLendon, who has been mayor for 8 years; Eddie Anderson, the Building Inspector who has been with the City for many years; and Milton Luckie, the Director of Public Works who has been with the City 30+ years. This interview record represents their collective information about the site, unless otherwise noted.</p> <p>They know where the site is, and recall the cleanup that took place 20 years ago. Other than that, there is little to report, as there have been no issues, concerns nor problems with the site.</p> <p>Mayor McLendon first stated that there have been no issues or concerns with the site in the past 15+ years. There has been no vandalism because the City would have been informed by the police. They have no recommendations for the site. They do not participate in the Operations and Maintenance of the site, and mentioned they saw Roy Hale of Alabama Power at the site during the week. They do know Roy Hale, and understand he is involved in the O&M of the site.</p> <p>I offered to send them the EPA website link for the Mowbray site, where the Five-Year review reports and some other site documents are posted. They were receptive, and indicated they would endeavor to look at the website and the info prior to the next Five-Year Review. They indicated I could send the website link to Barbara, in the Mayor's office.</p>		

INTERVIEW RECORD		
Site Name: Mowbray Engineering Company Superfund Site		EPA ID No.: ALD031618069
Subject: 5 year review		Time: 3 p.m. Date: 2 July 2008
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing
Location of Visit:		
Contact Made By:		
Name: Laura Roebuck	Title: Geologist	Organization: US Army Corps of Engineers
Individual Contacted:		
Name: Franklin Horn	Title: Lead Environmental Specialist	Organization: APCO
Telephone No: 205-664-6054	Street Address: 600 North 18th Street	
Fax No:	City, State, Zip: Birmingham, AL 35291	
Summary Of Conversation		
<p>Franklin has conducted the majority of the monthly O & M site inspections and has conducted all of the monitoring since 1993, when site O & M commenced. Franklin reports there have been no problems at the site; no vandalism, theft nor trespassing. Franklin thinks the O&M is adequate.</p> <p>From time to time, Tanyard Branch floods, but there is no damage or impact to the site. Site inspections are conducted monthly, and after significant rainfall events (i.e. greater than 4" of rain). The rainfall gauge is across the street from the superfund site.</p> <p>Franklin reported that the wells (which were installed circa 1985) have not been cleaned out nor redeveloped since installation. Franklin also reports that throughout the monitoring history, the wells have had the same recharge rate, and does not feel that redeveloping and cleaning the wells out will be beneficial at all. At every monitoring event, Franklin cleans out the sediment that has accumulated in the bottom of each well. The well screens are made of stainless steel.</p> <p>Franklin had no other comments or recommendations for improvement.</p>		

ATTACHMENT 7
PUBLIC NOTICE, 5-YEAR REVIEW



**U. S. Environmental Protection Agency, Region 4
Announces a Five-Year Review
for the Mowbray Engineering Company Site
Greenville, Alabama**

Purpose/Objective: The US Environmental Protection Agency (EPA) is conducting a Five-Year Review of the remedy for the Mowbray Engineering Company (MEC) Site in Greenville, Alabama. The site encompasses a 2.7 acre tract situated diagonally across from the former MEC facility at 300 Beeland Street. The purpose of the Five-Year Review is to ensure that the selected cleanup actions continue to protect human health and the environment.

Site Background: The MEC facility repaired and reconditioned electrical transformers. From 1955 to 1974, MEC emptied waste Polychlorinated biphenyls (PCBs) transformer oil behind the facility. The oil entered a storm drain which discharged into a swamp area across the road. In 1974, MEC began collecting the waste oil for recycling. In 1985, the company and its owner, Norman Parker, filed bankruptcy petitions under Chapter 7 of the U.S. Bankruptcy Code.

The Alabama Water Improvement Commission and U.S. EPA conducted the first investigation at the MEC Site as a result of a major fish kill in the Tanyard Branch in May 1975. A second fish kill was observed in 1980. In August 1981, the EPA performed a removal action which consisted of removing the top six inches of soil from the swamp. In 1983, the MEC Site was added to the National Priorities List with a Hazard Ranking System score of 53.67. In 1985, the EPA began a Remedial Investigation/Feasibility Study (RI/FS) at the MEC Site. The RI/FS was completed in July 1986. The EPA Regional Administrator signed the Record of Decision (ROD) on September 25, 1986. The remedy consisted of removing tanks and transformers, placing contaminated soil in a capped monolith, closing a city water supply well, and revegetating the swamp area. The EPA completed the remedial actions on August 20, 1987.

Five-Year Review Schedule: The National Contingency Plan requires that remedial actions which result in any hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to ensure protection of human health and the environment. Previous Five-Year Reviews were completed on January 8, 1993, August 3, 1998, and September 29, 2003. The 2003 Five-Year Review determined that the remedy remained protective of human health and the environment and continued to meet state and federal standards. This is the fourth Five-Year Review for this site.

EPA invites community participation in the Five-Year Review process.

The EPA is conducting this Five-Year Review to evaluate the effectiveness of the remedy and ensure that the remedy remains protective of human health and the environment. As part of the Five-Year Review process, the EPA is available to answer any questions about the Site. Community members who have questions about the Site, the Five-Year Review process, or who would like to participate in a community interview, are asked to contact the following:

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