GRENADA COUNTY - TIE PLANT MS
KOPPERS INC
HSWA
MSD007027543
1986-----1999 AI 00876

Koppers Inc

General Information

ID	Branch	SIC	County	Basin	Start	End
876	Energy and Transportation	2491	Grenada	Yazoo River	11/09/1981	

Address

Physical Address (Primary)	Mailing Address
1 Koppers Drive Tie Plant, MS 38960	PO Box 160 Tie Plant, MS 38960

Telecommunications

Type	Address or Phone
Work phone number	(662) 226-4584, Ext. 11

Alternate / Historic AI Identifiers

Alt ID	Alt Name	Alt Type	Start Date	End Date
2804300012	Koppers Inc	Air-AIRS AFS	10/12/2000	
096000012	Koppers, Inc.	Air-Title V Fee Customer	12/11/2006	
096000012	Koppers Industries, Inc.	Air-Title V Operating	03/11/1997	03/01/2002
096000012	Koppers Industries, Inc.	Air-Title V Operating	01/13/2004	03/26/2007
096000012	Koppers Inc	Air-Title V Operating	03/26/2007	01/01/2009
MSR220005	Koppers Industries, Inc.	GP-Wood Treating	09/25/1992	
MSD007027543	Koppers Industries, Inc.	Hazardous Waste-EPA ID	08/27/1999	
HW8854301	Koppers Industries, Inc.	Hazardous Waste-TSD	06/28/1988	06/28/1998
HW8854301	Koppers Industries, Inc.	Hazardous Waste-TSD	11/10/1999	03/26/2007
HW8854301	Koppers, Inc. (Owner)	Hazardous Waste-TSD	03/26/2007	09/30/2009
876	Koppers Industries, Inc.	Historic Site Name	11/09/1981	12/11/2006
876	Koppers, Inc.	Official Site Name	12/11/2006	
MSP090300	Koppers Industries, Inc.	Water-Pretreatment	11/14/1995	11/13/2000
MSP090300	Koppers Industries, Inc.	Water-Pretreatment	09/18/2001	08/31/2006
MSP090300	Koppers Inc	Water-Pretreatment	03/26/2007	02/28/2012
MSU081080	Koppers Industries, Inc.	Water-SOP	11/09/1981	11/30/1985

Regulatory Programs

Program	SubProgram	Start Date	End Date
Air	Title V - major	06/01/1900	
Hazardous Waste	Large Quantity Generator	08/27/1999	
Hazardous Waste	TSD - Not Classified	06/28/1988	
Water	Baseline Stormwater	01/01/1900	
Water	PT CIU	11/14/1995	
Water	PT CIU - Timber Products Processing (Subpart 429)	11/14/1995	
Water	PT SIU	11/14/1995	

Locational Data

Latitude	Longitude	Metadata	S / T / R	Map Links

33 ° 44 ' 3 .00 (033.734167)	89 ° 47 ' 8 .06 (089.785572)	**Point Desc:** PG- Plant Entrance (General). Data collected by Mike Hardy on 11/8/2005. Elevation 223 feet. Just inside entrance gate. **Method:** GPS Code (Psuedo Range) Standard Position (SA Off) **Datum:** NAD83 **Type:** MDEQ	Section: Township: Range:	SWIMS TerraServer Map It

4/3/2007 11:08:47 AM

Mississippi Department of Environmental Quality
Office of Pollution Control

I-sys 2000 Master Site Detail Report

Site Name: Koppers Industries Inc

PHYSICAL ADDRESS

LINE 1:	Tie Plant Road
LINE 2:	
LINE 3:	
MUNICIPALITY:	Tie Plant
STATE CODE:	MS
ZIP CODE:	38960-

MAILING ADDRESS

LINE 1:	PO Box 160
LINE 2:	
LINE 3:	
MUNICIPALITY:	Tie Plant
STATE CODE:	MS
ZIP CODE:	38960-

OTHER INFORMATION

MASTER ID:	000876
COUNTY:	Grenada
REGION	NRO
SIC 1:	2491
AIR TYPE:	TITLE V
HW TYPE:	TSD
SOLID TYPE:	
WATER TYPE:	INDUSTRIAL
BRANCH:	Energy

ECED CONTACT:
Collier, Melissa

BASIN:

AIR PROGRAMS ☑ SIP ☐ PSD ☐ NSPS ☐ NESHAPS ☐ MACT

Mississippi Department of Environmental Quality
Office of Pollution Control

Pemits

PROGRAM	PERMIT TYPE	PERMIT #	MDEQ PERMIT CONTACT	ACTIVE
AIR	TITLE V	096000012	Burchfield, David	YES
WATER	PRE-TREATMENT	MSP090300	Collins, Bryan	YES
HAZ. WASTE	TSD	HW8854301		YES
HAZ. WASTE	EPA ID	MSD007027543		YES
HAZ. WASTE	TSD	HW8854301	Stover, Wayne	YES

Compliance Actions

MEDIA	ACTIVITY TYPE	SCHEDULED	COMPLETED	INSPECTED B
HAZ WASTE	Financial Record Review	1/18/00	1/18/00	Twitty, Russ
WATER	CMI - PRETREATMENT			Whittington, Darryail
WATER	CEI - PRETREATMENT	9/30/00		Twitty, Russ
WATER	CEI - NA	9/30/00		Twitty, Russ
HAZ WASTE	Compliance Evaluation Inspection	9/30/00		Twitty, Russ
AIR	State Compliance Inspection	9/30/00		Twitty, Russ
WATER	CEI - NA	3/2/99	3/2/99	Twitty, Russ
HAZ WASTE	Compliance Evaluation Inspection	3/2/99	3/2/99	Twitty, Russ
AIR	State Compliance Inspection	3/2/99	3/2/99	Twitty, Russ

DATA CODED

Add a New Site

Site Name: Koppers Industries, Inc.

Official / Legal Name:

Air Type: Title V **Water Type:** Ind **HW Type:** TSD

Site General Information

County: Grenada

Contact Name: Thomas Henderson

Contact Title: Plant Manager

Contact Phone: 226-4584

Physical Address City, State, Zip: Tie Plant Rd.
Tie Plant | MS | 38960

Mailing Address City, State, Zip: P.O. Box 160
Tie Plant | MS | 38960

Owner's Name: Koppers Industries, Inc.

Owner's Address City, State, Zip: 436 Seventh Ave.
Pittsburgh | PA | 15219

Operator or Contractor Name:

Address City, State, Zip:

Site Identification Information

ECED Contact: Russ Smith

SIC: 2491 **SIC2:** **SIC3:**

AI ID: 00012 5 digit ID assigned by Air Division

EPA ID: MSD 007027543

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4WD-RPB

SEP 02 1998

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: Final HSWA Permit
Koppers Industries/Beazer East
Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

On June 18, 1998, the U.S. Environmental Protection Agency (EPA) public noticed the draft permit designed to cover those portions of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) which affect the Koppers Industries/Beazer East facility located in Grenada, Mississippi.[1] The forty-five (45) day public comment period ended on August 3, 1998. Comments were received from only one of the two Permittees, Beazer East. These comments dated July 28, 1998, were received on July 31, 1998. No other comments on the Draft HSWA Permit were received.

Enclosed with this letter, please find a response to each comment and the Final HSWA Permit. EPA accepted some of Beazer East's recommendation for permit revision. Several editorial corrections were also made to the permit (e.g., correct page numbers are now referenced in the Table of Contents; page numbering in Appendix D now correctly references "D" instead of "C;" the definition of force majeure under Condition II.G. is now located in its correct alphabetical order within Condition I.G.). In addition, you may notice some minor differences in where a line of type ends between the draft permit and the final permit. This difference does not reflect any changes to the permit. Rather, these departures seem to reflect an unfortunate difference in the spacing of letters between printers which has caused a slight variation in the number of characters which can fit on a line.

Because a comment was received during the public notice comment period, the cover page of the HSWA Permit reflects an

1 The HSWA Portion of the RCRA permit is commonly termed the "HSWA Permit." This convention is followed in this letter.

effective date which is thirty (30) days after the issuance date. This thirty (30) day difference provides Beazer East with the time needed to decide if a petition for appeal is necessary. Summary instructions on filing of a petition for appeal are also enclosed. This federally issued permit and the RCRA Post-Closure Permit issued by Mississippi constitute the full RCRA Permit for your facility.

All applicable RCRA regulations in effect at the time of permit issuance and referenced in the permit shall be complied with throughout the life of the permit. The permit may be modified at the request of the Permittees or by the Regional Administrator (see 40 CFR §270.41 and §270.42 for details). Note that some newly-promulgated regulations may be automatically applicable to all full RCRA Permit without the requirement for formal permit modifications to incorporate the newly-promulgated regulation.

If there are any questions regarding the enclosures or the permitting process, please contact Wesley Hardegree of the South Programs Section (SPS) at (404) 562-8486.

Sincerely,

N. M. Kumar

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

Enclosures: 1) Response to Comment
2) Final HSWA Portion of the RCRA Permit
3) Summary of Requirements for Notice of Appeal/Petition for Review

cc: Wayne Stover, MDEQ (with enclosures)
R.D. Collins, Vice President, Koppers Industries, Inc. (with enclosures)

EPA RESPONSE TO COMMENT ON THE DRAFT HSWA PERMIT
KOPPERS INDUSTRIES/BEAZER EAST - GRENADA FACILITY
EPA I.D., NUMBER: MSD 007 027 543
August 1998

Comment #1: Condition II.L. Dispute Resolution

There is only one provision of the draft Permit, "Dispute Resolution," which Beazer believes requires further clarification. Beazer requested in its comments to the preliminary draft Permit that EPA state in the Permit that the Dispute resolution decision constituted "final agency action." EPA declined to include such language in the draft Permit.

Rather than continue to pursue this issue herein, we are suggesting the following alternative language for the dispute resolution paragraph which is consistent with EPA policy and achieves our objectives:

II.L.1.b. The Regional Administrator and the Permittees shall have an additional thirty (30) days from EPA's receipt of the notification provided for in Condition II.L.1.a. to meet or confer to resolve any disagreement. The Regional Administrator and the Permittees may agree in writing to extend this 30-day period.

II.L.1.c. In the event agreement is reached, the Permittees shall comply with the terms of such agreement or if appropriate submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.

II.L.1.d. If agreement is not reached within the thirty (30) day period, the Permittees may submit their position to the Regional Administrator in writing and shall be provided an opportunity to confer with the Regional Administrator or his designee. ~~t~~The Regional Administrator will notify the Permittees in writing of his/her decision on the dispute, and the Permittees shall comply with the terms and conditions of the Regional Administrator's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Waste Management Division Director. The Permittees do not waive their rights to assert any and all available defenses in a proceeding to enforce the permit; nor do they waive any statutory or regulatory rights they may have, if any, to affirmatively challenge EPA's decision in the dispute.

Beazer requests that EPA incorporate the changes noted above in the final Permit.

Response to Comment #1: Condition II.L.1.b. through II.L.1.d

A) Response to requested changes to Condition II.L.1.b.,

The objective of the Dispute Resolution Permit Condition is to establish an administrative framework for quick resolution of an ongoing conflict which has not yet been resolvable at the level of interaction usually found between EPA and the Permittees. Beazer East's inclusion of a clause which allows for further extension negates the usefulness of Dispute Resolution for those cases where extensive prior dialogue has failed.

The permit condition is unchanged by this comment.

B) Response to requested changes to Condition II.L.1.d.,

The request to provide a written submission and additional conference with the Regional Administrator or his designee after the failure to reach an agreement in the allotted time frame for Dispute Resolution fails to acknowledge the design of Dispute Resolution to obtain a quick decision. Furthermore, written submission which clearly states the Permittees' position can be provided when the Permittee invokes the provisions of Dispute Resolution (see Condition II.L.1.a.). Meeting(s) with the Regional Administrator or his designee prior to a final decision is already provided by the current Dispute Resolution language (see Condition II.L.1.b.).

The permit condition is unchanged by this comment.

C) Response to requested changes to Condition II.L.1.d.,

EPA found the recommended language acceptable. The permit has been modified as requested.

SUMMARY OF REQUIREMENTS
FOR
NOTICE OF APPEAL / PETITION FOR REVIEW

Any person who files comments on the draft permit or participates in the public hearing on the draft permit may petition the Headquarters Hearing Clerk to review any condition of the permit decision. A person who did not file comments or participate in the public hearing on the draft permit may not petition for administrative review, except concerning those changes made from the draft to the final permit (e.g., new permit conditions that were not included in the draft permit).

The petition:

1. must be submitted within a 30-day period, beginning on the day after the Region serves notice of its permit decision, unless the notice specifies a later starting date for the 30-day period.

2. must contain a statement of the reasons supporting that review, including a demonstration that any issues raised in the petition were previously raised during the public comment period or public hearing and, when appropriate, a showing that the initial decision contains:

    a. a finding of fact or conclusion of law which is clearly erroneous, or

    b. an exercise of discretion or policy which is important and which the Administrator should review.

3. must be sent (an original and one copy) to the Headquarters Hearing Clerk, at the following address:

    U.S. Environmental Protection Agency
    Office of the Administrator
    Environmental Appeals Board (A-101)
    401 M Street, SW
    Room 1145 (West Tower)
    Washington, DC 20460

    A copy of the Petition should also be sent to the Region IV Regional Administrator, at the following address:

    U.S. Environmental Protection Agency - Region 4
    Atlanta Federal Center
    61 Forsyth Street, S.W.
    Atlanta, GA 30303

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

Notice of RCRA Final Permit Decision

Facility Name: Koppers Industries/Beazer East

EPA I.D. Number: MSD 007 027 543

Location: Tie Plant, Mississippi 38960

After due consideration of the facts applicable to the above facility as they appear in the administrative record and of the requirements and policies expressed in the Resource Conservation and Recovery Act (RCRA) and appropriate regulations, I have determined that the permit should be issued.

The administrative record is maintained at the Agency's offices at 61 Forsyth Street, S.W., Atlanta, Georgia 30303, and is available for public review between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday. For further information on this permit action, contact Kent Williams at the above address.

Richard D. Green
Director
Waste Management Division

HSWA PORTION OF THE RCRA PERMIT

OWNER/OPERATOR: Koppers Industries Inc.
P.O. Box 160
Tie Plant, MS 38960

OPERATOR: Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

EPA I.D. No. MSD 007 027 543

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, 42 USC Section 6901 et seq., and the Hazardous and Solid Waste Amendments (HSWA) of 1984, P.L. 98-616, and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations), a permit is issued to Koppers Industries, Inc. and Beazer East, Inc. (hereafter collectively called the Permittees) for the hazardous waste facility located in Tie Plant, Mississippi at latitude 33°44 '04" North and longitude 89°4 '19" West.

This Permit, in conjunction with the Hazardous Waste Management Permit issued by the State of Mississippi, constitutes the full RCRA Permit for this facility. The Permittees, pursuant to this permit, shall be required to investigate any releases of hazardous waste or hazardous constituents at the facility regardless of the time at which waste was placed in a unit and to take appropriate corrective action for any such releases. The permit also requires the Permittees to comply with all land disposal restrictions and air emission standards applicable to this facility.

The Permittees must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any attachments) and applicable regulations contained in 40 CFR Parts 260 through 264, 266, 268, 270, and 124 as specified in the permit and statutory requirements of RCRA, as amended by HSWA. Nothing in this permit shall preclude the Regional Administrator from reviewing and modifying the permit at any time during its term in accordance with 40 CFR §270.41.

This permit is based on the premise that information and reports submitted by the Permittees prior to issuance of this permit are accurate. Any inaccuracies found in this information or information submitted as required by this permit may be grounds for termination or modification of this permit in accordance with 40 CFR §270.41, §270.42, and §270.43 and potential enforcement action. The Permittees must inform EPA of any deviation from or changes in the information in the application which would affect the Permittees' ability to comply with the applicable regulations or permit conditions.

The authority to perform all actions necessary to issue, modify, enforce, or revoke this permit has been delegated by the Regional Administrator to the Waste Management Division Director.

This permit is effective October 2, 1998, and shall remain in effect for ten (10) years until October 2, 2008, unless revoked and reissued, or terminated under 40 CFR §270.41 and §270.43 or continued in accordance with 40 CFR §270.51(a). All obligations for performance of HSWA provisions required under this permit are in effect until deemed complete by the Regional Administrator.

If any conditions of this permit are appealed in accordance with 40 CFR §124.19, the effective date of the conditions determined to be stayed in accordance with 40 CFR §124.16 shall be determined by final agency action as specified under 40 CFR §124.19.

SEP 02 1998

Issued Date

Richard D. Green
Director
Waste Management Division

PART I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

Compliance with this RCRA permit constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, are promulgated under 40 CFR Part 268 restricting placement of hazardous waste in or on the land or are promulgated under 40 CFR Part 264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units, as specified in 40 CFR §270.4. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Section 3008(a), 3008(h), 3004(v), 3008(c), 3007, 3013 or Section 7003 of RCRA, Sections 104, 106(a), 106(e), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

I.B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§270.41, 270.42, and 270.43 except for the Corrective Action schedule of compliance which shall be modified in accordance with Condition II.I. of this permit. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittees does not stay the applicability or enforceability of any permit condition.

I.C. SEVERABILITY

The provisions of this permit are severable, as specified in 40 CFR §124.16 and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DUTIES AND REQUIREMENTS

I.D.1. Duty to Comply

The Permittees shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

I.D.2. Duty to Reapply

If the Permittees will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittees shall submit a complete application for a new permit at least one hundred eighty (180) calendar days before this permit expires, unless permission for a later date has been granted by the Regional Administrator.

method from Appendix I of 40 CFR Part 261, the EPA Region 4 Environmental Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP) (most recent version), or an equivalent method approved by the Regional Administrator. Procedures for sampling contaminated media must be those identified in the EPA Region 4 SOP or an equivalent method approved by the Regional Administrator. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, or an equivalent method approved by the Regional Administrator.

I.D.9.b. The Permittees shall retain at the facility, as provided for under 40 CFR Part 264, or other appropriate location as approved by the Regional Administrator, records of all monitoring information required under the terms of this permit, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report, certification or application, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittees shall retain a copy of all notices, certifications, demonstrations waste analysis data, and other documentation produced pursuant to 40 CFR Part 268 for at least five years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

I.D.9.c. Records of monitoring information shall specify:

i. The dates, exact place, and times of sampling, or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The name of the laboratory which performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

I.D.10. Reporting Planned Changes

The Permittees shall give written notice to the Regional Administrator as soon as possible of any planned physical alterations or additions, including Permittee initiated Interim Measures under Condition II.F.1.b., which impact known or suspected contamination at or from SWMUs or AOCs referenced in Conditions II.A.1., II.A.3., II.A.4., and II.C. The notice shall include at a minimum, a summary of the planned change, the reason for the planned change, a discussion of the impact(s) the planned change will have on the ability to investigate contamination at or from the SWMU or AOC, and a discussion of the impact(s) the planned change will have on the known or suspected contamination.

I.D.11. Anticipated Noncompliance

The Permittees shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this permit.

imminent hazard has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance or imminent hazard.

I.D.15. Other Noncompliance

The Permittees shall report all other instances of noncompliance not otherwise required to be reported above, at the time written reports as required by this permit are submitted. The reports shall contain the information listed in Condition I.D.14. as appropriate.

I.D.16. Other Information

Whenever the Permittees become aware that it failed to submit any relevant facts or submitted incorrect information in any document(s) submitted to the Regional Administrator, the Permittees shall promptly submit such facts or information.

I.E. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR §270.11. The Regional Administrator has been notified that for Beazer East, 40 CFR §270.11 is satisfied by a signature from a Beazer East representative of at least Program Manager level.

I.F. CONFIDENTIAL INFORMATION

The Permittees may claim confidential any information required to be submitted by this permit in accordance with 40 CFR §270.12.

I.G. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR Parts 124, 260, 261, 264, and 270, unless this permit specifically provides otherwise. Where terms are not defined in the regulation, the permit, or EPA guidelines or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.G.1. "Action levels" for the purposes of this permit are health-based concentrations of hazardous constituents determined to be indicators for the protection of human health and/or the environment.

I.G.2. The term "area of concern" (AOC) for purposes of this permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Regional Administrator to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and 40 CFR §270.32(b)(2) in order to ensure adequate protection of human health and the environment.

I.G.3. A "Corrective Action Management Unit" (CAMU) for purposes of this permit, includes any area within a facility that is designated by the Regional Administrator under part 264 Subpart S, for the purpose of implementing corrective action requirements under §264.101 and RCRA section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

implementing RCRA sections 3004(v) or 3008(h) for releases beyond the facility boundary.

I.G.14. "Solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

I.G.15. A "solid waste management unit" (SWMU) for the purposes of this permit includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g. product or process spills).

I.G.16. A "Temporary Unit" (TU) for the purposes of this permit includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Regional Administrator, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.

I.G.17. A "unit" for the purposes of this permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

b. Designation of type and function of unit(s).

c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

d. Dates that the unit(s) was operated.

e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the wastes.

f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

II.B.4. Based on the results of the SAR, the Regional Administrator shall determine the need for further investigations at the SWMUs covered in the SAR. If the Regional Administrator determines that such investigations are needed, the Permittees shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. or II.D.1.

II.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES FROM SWMUs or AOCs

II.C.1. The Permittees shall notify the Regional Administrator in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition II.A.2. or SWMU or AOCs identified in Condition II.A.4. for which further investigation under Condition II.B.4. was not required.

II.C.2. If the Regional Administrator determines that further investigation of the SWMUs or AOCs is needed, the Permittees shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b.

II.D. CONFIRMATORY SAMPLING (CS)

II.D.1. Upon notification by the Regional Administrator, the Permittees shall prepare and submit a Confirmatory Sampling (CS) Work Plan for suspected AOCs per Condition II.B.1. or newly identified SWMUs per Condition II.B.4. The work plan shall be submitted within forty-five (45) calendar days of notification by the Regional Administrator that a CS Work Plan is required. The CS Work Plan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a release has occurred. It should also address applicable requirements and affected media. In order to partly or wholly satisfy the CS requirement, previously existing data may be submitted with the work plan for the Regional Administrator's consideration.

II.D.2. The CS Work Plan must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the CS Work Plan schedule in the letter approving the CS Work Plan. If the Regional Administrator disapproves the CS Work Plan, the Regional Administrator shall either (1) notify the Permittees in writing of the CS Work Plan's deficiencies and specify a due date for submission of a revised CS Work Plan, (2) revise the CS Work Plan and notify the Permittees of the revisions, or (3) conditionally approve the CS Work Plan and notify the Permittees of the conditions.

II.D.3. The Permittees shall implement the confirmatory sampling in accordance with the approved CS Work Plan.

II.D.4. The Permittees shall prepare and submit to the Regional Administrator in accordance with the schedule in the approved CS Work Plan, a Confirmatory Sampling (CS) Report identifying all SWMUs or AOCs that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all

II.E.3. RFI Reports

II.E.3.a. The Permittees shall prepare and submit to the Regional Administrator Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Work Plan(s) submitted under Condition II.E.1. The Draft RFI Report(s) shall be submitted to the Regional Administrator for review in accordance with the schedule in the approved RFI Work Plan(s). The Final RFI Report(s) shall be submitted to the Regional Administrator within thirty (30) calendar days of receipt of the Regional Administrator's final comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a work plan for the final phase investigatory actions required based on the initial findings. Approval of the final phase work plan shall be carried out in accordance with Condition II.E.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

II.E.3.b. The Permittees shall prepare and submit to the Regional Administrator, along with the Draft and Final RFI Report(s), action levels for each of the hazardous constituents reported in Condition II.E.3.a. Action levels shall be calculated as specified in Appendix E of this permit.

II.E.3.c. The Regional Administrator will review the RFI Report(s), including the action levels described in Condition II.E.3.b. The Regional Administrator shall notify the Permittees of the need for further investigative action if necessary and, if appropriate at this moment of the investigation, inform the Permittees, if not already notified, of the need for a Corrective Measures Study to meet the requirements of II.G and 40 CFR §264.101. The Regional Administrator will notify the Permittees of any no further action decision. Any further investigative action required by the Regional Administrator shall be prepared and submitted in accordance with a schedule specified by the Regional Administrator and approved in accordance with Condition II.E.1.d.

II.E.3.d. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittees shall provide the Regional Administrator with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Regional Administrator in the RFI Work Plan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of findings;

iii. Summaries of <u>any</u> deviations from the approved RFI Work Plan during the reporting period;

iv. Summaries of any significant contacts with local community public interest groups or State government;

v. Summaries of <u>any</u> problems or potential problems encountered during the reporting period;

vi. Actions taken to rectify problems;

vii. Changes in relevant personnel;

viii. Projected work for the next reporting period; and

ix. Copies of daily reports, inspection reports, data, etc.

II.F.3. IM Reports

II.F.3.a. If the time required for completion of interim measures imposed under Condition II.F.1.a. or implemented under Condition II.F.1.b. is greater than one year, the Permittees shall provide the Regional Administrator with progress reports at intervals specified in the approved Work Plan or semi-annually for Permittee initiated interim measures. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of findings;

iii. Summaries of any deviations from the IM Work Plan during the reporting period;

iv. Summaries of any problems or potential problems encountered during the reporting period; and

v. Projected work for the next reporting period.

II.F.3.b. The Permittees shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of completion of interim measures conducted under Condition II.F., an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

i. A description of interim measures implemented;

ii. Summaries of results;

iii. Summaries of all problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.9.

II.G. CORRECTIVE MEASURES STUDY

II.G.1. Corrective Measures Study (CMS) Work Plan

II.G.1.a. The Permittees shall prepare and submit a CMS Work Plan for those units requiring a CMS within ninety (90) calendar days of notification by the Regional Administrator that a CMS is required. This CMS Work Plan shall be developed to meet the requirements of Condition II.G.1.b. The Permittees may seek approval from the Regional Administrator for concurrent RFI/CMS. The CMS may be performed concurrent with the RFI process if the Regional Administrator determines that sufficient investigative details are available to allow concurrent action.

II.G.1.b. The CMS Work Plan shall meet the requirements of Appendix C at a minimum. The CMS Work Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittees must provide sufficient justification and/or documentation for any unit deleted from the CMS Work Plan. Such deletion of a unit is subject to the approval of the Regional Administrator. The CMS shall be conducted in accordance with the approved CMS Work Plan. The Permittees shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject tô the approval of the Regional Administrator. The scope of the CMS Work Plan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR §264.101, §264.552, and §270.32(b)(2). The Permittees shall implement corrective actions beyond the facility boundary, as set forth in Condition II.A.5.

II.I. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

II.I.1. If at any time the Regional Administrator determines that modification of the Corrective Action Schedule of Compliance is necessary, the Regional Administrator may initiate a modification to the Schedule of Compliance (Appendix D).

II.I.2. Modifications that are initiated and finalized by the Regional Administrator will be in accordance with the applicable provisions of 40 CFR Part 270. The Permittees may also request a permit modification in accordance with 40 CFR Part 270 to change the Schedule of Compliance.

II.J. WORK PLAN AND REPORT REQUIREMENTS

II.J.1. All work plans and schedules shall be subject to approval by the Regional Administrator prior to implementation to assure that such work plans and schedules are consistent with the requirements of this Permit and with applicable regulations. The Permittees shall revise all submittals and schedules as specified by the Regional Administrator. Upon approval the Permittees shall implement all work plans and schedules as written.

II.J.2. All work plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Regional Administrator based on the Permittees' demonstration that sufficient justification for the extension exists.

II.J.3. If the Permittees at any time determines that the SAR information required under Condition II.B., the CS Work Plan under Condition II.D., or RFI Work Plan(s) required under Condition II.E. no longer satisfy the requirements of 40 CFR §264.101 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittees shall submit an amended Work Plan(s) to the Regional Administrator within ninety (90) calendar days of such determination.

II.J.4. At least two (2) copies of all reports and work plans shall be provided by the Permittees to the Regional Administrator in care of the RCRA Branch Chief at the following address:

Chief, RCRA Programs Branch
Waste Management Division
U.S. Environmental Protection Agency
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

II.K. APPROVAL/DISAPPROVAL OF SUBMITTALS

II.K.1. The Regional Administrator will review the work plans, reports, schedules, and other documents ("submittals") which require the Regional Administrator's approval in accordance with the conditions of this permit. The Regional Administrator will notify the Permittees in writing of any submittal that is disapproved, and the basis therefore. Condition II.L. shall apply only to submittals that have been disapproved and revised by the Regional Administrator, or that have been disapproved by the Regional Administrator, then revised and resubmitted by the Permittees, and again disapproved by the Regional Administrator.

PART III - LAND DISPOSAL RESTRICTIONS

III.A. GENERAL RESTRICTIONS

III.A.1. 40 CFR Part 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittees shall maintain compliance with the requirements of 40 CFR Part 268. Where the Permittees have applied for an extension, waiver or variance under 40 CFR Part 268, the Permittees shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

III.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

III.B.1. A restricted waste identified in 40 CFR Part 268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D are met.

III.B.2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 is prohibited unless the requirements of 40 CFR Part 268 Subpart E are met.

APPENDIX A

SOLID WASTE MANAGEMENT UNIT SUMMARY

A.1. List of solid waste management units (SWMUs) and areas of concern (AOCs) requiring a RCRA Facility Investigation (RFI):			
SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment	Dates of Operation
CENTRAL PROCESS AREA			
1	Oil/Water Separator	Manages No. 2 diesel fuel, pentachlorophenol and oil. RFI Report Under Review.	Approximately. 1975 to Present
4	Boiler	Managed creosote byproducts, pentachlorophenol byproducts, impacted soils, bottom sediments and unreclaimed oil. RFI Report Under Review. Since 1992, the boiler has used untreated wood, creosote treated wood, and pentachlorophenol treated wood as fuel.	Approximately 1975 to Present
9	Chemical Unloading Area	Manages creosote, No. 2 diesel fuel. RFI Report Under Review.	Approximately 1975 to Present
10	Underground Storage Tank	Unknown, possibile creosote, pentachlorophenol, oil and wood debris. RFI Report Under Review.	Approximately 1970 to 1994
MISCELLANEOUS UNITS			
6	Process Cooling Reservoir	Manages cooling water. RFI Report Under Review.	Approximately 1970 to Present
7	Container Storage Area	Manages creosote, pentachlorophenol, bottom sediments, impacted soils, and unreclaimed oil. RFI Report Under Review.	1980 to Present
8	Drip Track Area	Manages creosote, No. 2 diesel fuel, pentachlorophenol and oil. RFI Report Under Review.	1903 to Present

A.2. List of solid waste management units (SWMUs) and areas of concern (AOCs) requiring no further action at this time:			
SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment and Basis for NFA	Dates of Operation
2[3]	Surface Impoundment	Managed creosote, No. 2 diesel fuel, pentachlorophenol and oil	Approximately 1975 to mid-1988
3[4]	Spray Irrigation Field	Managed creosote, No. 2 diesel fuel, pentachlorophenol and oil.	Approximately 1975 to mid-1988
5[5]	Boiler Ash Landfill	Managed K001 bottom sediments, boiler ash	Approximately 1975 to 1993

3 RCRA Regulated Unit covered under the Post-Closure Permit issued by the Mississippi Department of Environmental Quality

4 RCRA Regulated Unit covered under a Closure Plan by the State of Mississippi.

5 RCRA Regulated Unit covered under a Consent Order issued by the State of Mississippi.

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) OUTLINE

The purpose of the RFI portion of the RCRA corrective action process is to evaluate the nature and extent of the releases of hazardous wastes and/or hazardous constituents and to gather necessary data to support the Corrective Measures Study (CMS) and/or Interim Measures. Planning for the investigation is best accomplished through a logical progression of tasks:

1. gather information on the source of the release(s) to the environment (Source Characterization),
2. gather information on the physical aspects of the environment which will affect the migration and fate of the release and identification of exposure pathways for both humans and non-human members of the environment (Environmental Setting),
3. use Source Characterization and Environmental Setting to develop a conceptual model of the release which will be used to plan and conduct a program to define the nature, rate and extent of the release (Sampling and Analysis Plan).

An RFI Work Plan and RFI Report are generally required elements of the RCRA corrective action process. The requirements for a full, detailed RFI are listed in this Appendix. EPA recognizes that each facility is unique. Therefore, the scope and requirements of the RFI shall be focused to fit the complexity of the site-specific situation. The work plan requirements listed in this Appendix in no way limit the site-specific opportunities for Permittees. For example, the RFI may be implemented in phases. Relevant information contained in previously developed documents, such as a RCRA Part B permit application, may be referenced as appropriate, but must be summarized in either the RFI Work Plan or the RFI Report. In addition, EPA understands that Risk Assessments are becoming more widely utilized to place characterization information into context and to aid in determining remedial solutions. If a Risk Assessment is expected to be performed in the future, note that Region 4 has developed a series of Risk Bulletins to provide Permittees and their contractors with the general format and process Region 4 expects a Risk Assessment to follow.

In some cases, it may be possible to implement the RFI concurrent with the CMS (also see Appendix C). This approach can save time and money because the earlier in the corrective action process potential remedies can be identified, the more effectively information gathering can be focused. The Agency anticipates that a concurrent RFI/CMS approach may be appropriate in the following types of situations, among others: facilities where removal remedies have been proposed by the owner/operator, facilities with straightforward remedial solutions or where presumptive remedies can be applied, facilities where few remedial options are available, and facilities where the remedy is phased. The Agency will determine on a case-by-case basis if a combined RFI/CMS is appropriate. Because of the unique data collection requirements necessary for a remedial solution which includes natural attenuation of contaminants in groundwater, if natural attenuation is expected to be part of the remedial solution, then the Sampling and Analysis Plan should be crafted to include monitoring of specific water quality parameters unique to natural attenuation (e.g., nitrites/nitrates, ferrous iron, sulfides, dissolved oxygen, methane, hydrogen, etc.).

I. RFI WORK PLAN REQUIREMENTS - ELEMENTS OF THE RFI WORK PLAN

The RFI Work Plan shall include, at a minimum, the following elements:

A. Introduction - Summary of any relevant existing assessment data

The Permittees shall describe the purpose or objective of the RFI Work Plan and provide a summary of any existing environmental data which is relevant to the investigation. The summary should provide the following items, at a minimum:

1. land ownership history,
2. facility operating dates,
3. facility's product(s),
4. raw materials used in facility operations, wastes generated,

iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences and for karst terrane, stormflow.

e. A description of man-made influences that may affect the hydrology of the site, identifying:

i) Local water-supply and production wells with an approximate schedule of pumping; and
ii) Man-made hydraulic structures (pipelines, french drains, ditches, roofs, runways, parking lots, etc.).

2. Soils

The Permittees shall provide an explanation of the soil and rock units above the water table in the vicinity of contaminant release(s). This summary may include, but not be limited to, the following types of information as appropriate:

i) Surface soil distribution;
ii) Soil profile, including ASTM classification of soils;
iii) Transects of soil stratigraphy;
iv) Hydraulic conductivity (saturated and unsaturated);
v) Relative permeability;
vi) Bulk density;
vii) Porosity;
viii) Soil sorption capacity;
ix) Cation exchange capacity (CEC);
x) Soil organic content;
xi) Soil pH;
xii) Particle size distribution;
xiii) Depth of water table;
xiv) Moisture content;
xv) Effect of stratification on unsaturated flow;
xvi) Infiltration;
xvii) Evapotranspiration;
xviii) Storage capacity;
xix) Vertical flow rate; and
xx) Mineral content.

3. Surface Water and Sediment

The Permittees shall provide a description of the surface water bodies in the vicinity of the facility. This summary may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
iii) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.
iv) Drainage patterns; and
v) Evapotranspiration.

f. Age of unit/disposal area;
g. General physical conditions; and
h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of wastes placed in the unit;

i) Hazardous classification (e. g., flammable, reactive, corrosive, oxidizing or reducing agent);
ii) Quantity; and
iii) Chemical composition.

b. Physical and chemical characteristics such as:

i) Physical form (solid, liquid, gas);
ii) Physical description (e.g., powder, oily sludge);
iii) Temperature;
iv) pH;
v) General chemical class (e.g., acid, base, solvent);
vi) Molecular weight;
vii) Density;
viii) Boiling point;
ix) Viscosity;
x) Solubility in water;
xi) Cohesiveness of the waste; and
xii) Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:

i) Sorption capability;
ii) Biodegradability, bioconcentration, and biotransformation;
iii) Photodegradation rates;
iv) Hydrolysis rates; and
v) Chemical transformations.

D. Potential Receptors

The Permittees shall provide data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Data gaps pertinent to receptor analysis shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. The following characteristics shall be identified at a minimum:

1. Current local uses and planned future uses of groundwater:

a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial);
b. Location of groundwater users, to include withdrawal and discharge wells and springs, within one mile of the impacted area.

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Sampling Procedures

a. Documenting field sampling operations and procedures, including;

i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);
ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
iii) Documentation of specific sample preservation method;
iv) Calibration of field instruments;
v) Submission of appropriate blanks (e.g., field, equipment, trip, etc.);
vi) Potential interferences present at the facility;
vii) Construction materials and techniques, associated with monitoring wells and piezometers;
viii) Field equipment listing and sampling containers;
ix) Sampling order; and
x) Decontamination procedures.

b. Selecting appropriate sample containers;

c. Sampling preservation; and

d. Chain-of-custody, including:

i) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.
iii) Chain-of-custody seals for sample containers and shipping coolers.

3. Sample Analysis

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods" (most recent version) or an alternate approved method. The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage (e.g., maximum holding times for constituents);

c. Sample preparation methods;

d. Analytical Procedures, including:

i) Scope and application of the procedure;

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;
b. Results for each medium, or for each constituent monitored;
c. Data reduction for statistical analysis, as appropriate;
d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
e. Summary data

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Display sampling location and sampling grid:
b. Indicate boundaries of sampling area, and area where more data are required;
c. Display geographical extent of contamination, both horizontally and vertically;
d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and
e. Indicate features affecting inter-media transport and show potential receptors.

G. Project Management Plan - Schedule of Implementation

Permittees shall prepare a Project Management Plan which will cover qualifications of personnel categories and the management control structure for the project. The Permittees shall also provide a schedule for completing the planned RFI activities. The schedule shall be as specific as possible (i.e., it should indicate the number of days/weeks/months required for each major work plan task).

II. RFI REPORT REQUIREMENTS - ELEMENTS OF THE RFI REPORT

The RFI Report shall include, at a minimum, the following elements:

A. Introduction

The Permittees shall describe the purpose of the RFI Work Plan and provide a summary description of the project.

B. Environmental Setting

The Permittees shall describe the Environmental Setting in and around the facility. The RFI Work Plan should contain some, if not all, of the information on the Environmental Setting. Any information collected during work plan implementation which clarifies or improves understanding of the Environmental Setting should be provided in this section.

C. Source Characterization

The Permittees shall summarize the sources of contamination and nature of releases identified at the facility. The RCRA Facility Assessment and the RFI Work Plan should contain some, if not all, of the information on Source Characterization. Any information collected during work plan implementation or obtained from the

APPENDIX C

CORRECTIVE MEASURE STUDY (CMS) OUTLINE

The purpose of the CMS portion of the RCRA corrective action process is to identify and evaluate potential remedial alternatives for the releases of hazardous constituents that have been identified at the facility through the RFI or other investigations to need further evaluation. The scope and requirements of the CMS are balanced with the expeditious initiation of remedies and rapid restoration of contaminated media. The scope and requirements of the CMS should be focused to fit the complexity of the site-specific situation. It is anticipated that Permittees with sites with complex environmental problems may need to evaluate a number of technologies and corrective measure alternatives. For other facilities, however, the evaluation of a single corrective measure alternative may be adequate. Therefore, a streamlined or focused approach to the CMS may be initiated. Information gathered during any stabilizations or interim measures will be used to augment the CMS and in cases where corrective action goals are met, may be a substitute for the final CMS.

Regardless of whether a streamlined/focused or a detailed CMS is required, a CMS Work Plan and CMS Report are generally required elements. The requirements for a full, detailed CMS are listed below. The Agency has the flexibility not to require sections of the plan and/or report, where site-specific situations indicate that all requirements are not necessary. Additionally, the Agency may require additional studies besides these discussed in order to support the CMS.

I. Corrective Measures Study (CMS) Work Plan

A. Elements of the CMS Work Plan

The Corrective Measures Study (CMS) Work Plan shall include at a minimum the following elements:

1. A brief site-specific description of the overall purpose of the CMS;

2. A brief description of the corrective measure objectives, including proposed target media cleanup standards (e.g., promulgated federal and state standards) and preliminary points of compliance or a description of how a risk assessment will be performed (e.g., guidance documents);

3. A brief description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied;

4. A brief description of the general approach to investigating and evaluating potential corrective measures;

5. A detailed description of any proposed pilot, laboratory and/or bench scale studies;

6. A proposed outline for the CMS Report including a description of how information will be presented;

7. A brief description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, project schedules, budget and personnel. Include a description of qualifications for personnel directing or performing the work;

8. A project schedule that specifies all significant steps in the process and when key documents (*e.g.*, CMS Progress Reports, draft CMS Report) are to be submitted to the Agency;

9. A detailed Public Involvement Plan.

characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

c. Technology Limitations: During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

3. Corrective Measure Development: The Permittees shall assemble the technologies that pass the screening step into specific alternatives that have the potential to meet the corrective action objectives for each media. Options for addressing less complex sites could be relatively straight-forward and may only require evaluation of a single or limited number of alternatives. Each alternative may consist of an individual technology or a combination used in sequence (i.e., treatment train). Different alternatives may be considered for separate areas of the facility, as appropriate. List and briefly describe each corrective measure alternative.

E. Evaluation of a Final Corrective Measure Alternative

For each remedy which warrants a more detailed evaluation (i.e., those that passed through the screening step), including those situations when only one remedy is being proposed, the Permittees shall provide detailed documentation of how the potential remedy will comply with each of the standards listed below. These standards reflect the major technical components of remedies including cleanup of releases, source control and management of wastes that are generated by remedial activities. The specific standards are as follows:

1. Protect human health and the environment.
2. Attain media cleanup standards set by EPA.
3. Control the source of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment.
4. Comply with applicable standards for management of wastes.
5. Other factors.

In evaluating the selected alternative or alternatives, the Permittees shall prepare and submit information that documents that the specific remedy will meet the standards listed above. The following guidance should be used in completing this evaluation.

1. Protect Human Health and the Environment

Corrective action remedies must be protective of human health and the environment. Remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes. Therefore, the Permittees shall provide a discussion of any short term remedies necessary to meet this standard, as well as discuss how the corrective measures alternative(s) meet this standard.

2. Attain Media Cleanup Standards

Remedies will be required to attain media cleanup standards. As part of the necessary information for satisfying this requirement, the Permittees shall address whether the potential remedy will achieve the remediation objectives. An estimate of the time frame necessary to achieve the goals shall be included. Contingent remedies may be proposed if there is doubt if the initial remedy will be successful (*e.g.*, contingent remedies to innovative technologies).

iii) The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and

iv) The availability of prospective technologies for each corrective measure alternative.

e. Cost: The Permittees shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. The capital costs shall include, but are not limited to, costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, etc. The operation and maintenance costs shall include labor, training, sampling and analysis, maintenance materials, utilities, waste disposal and/or treatment, etc. Costs shall be calculated as the net present value of the capital and operation and maintenance costs.

F. <u>Justification and Recommendation of the Corrective Measure or Measures</u>

The Permittees shall justify and recommend in the CMS Report a corrective measure alternative for consideration by the Agency. Such a recommendation should include a description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above. In addition, this recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Regional Administrator will select the corrective measure alternative or alternatives to be implemented based on the results presented in the CMS Report.

G. <u>Preliminary Identification of the Financial Assurance Mechanism</u>

The Permittees shall also tentatively identify the Financial Assuance mechanism to be utilized to eventually satisfy Condition II.H.3.

Schedule of Compliance	Due Date
CMS Work Plan *Condition II.G.1.a.*	Within ninety (90) calendar days of notification by RA that a CMS is required
Implementation of CMS Work Plan *Condition II.G.2.*	Within fifteen (15) calendar days after receipt of RA approval of Plan
Draft CMS Report *Condition II.G.3.a.*	In accordance with the schedule in the approved CMS Work Plan
Final CMS Report *Condition II.G.3.a.*	Within thirty (30) calendar days of RA's final comments on Draft CMS Report
Demonstration of Financial Assurance *Condition II.H.3.*	Within one hundred twenty (120) calendar days after permit modification for remedy
Noncompliance/Imminent Hazard Report *Condition I.D.14.*	Oral within 24 hours and written within fifteen (15) calendar days of becoming aware of the hazardous circumstances
Permit Modification for New Units Subject to Subpart CC Air Emission Standards *Condition IV.B.*	According to Permit Modification procedures in Part 270

The above reports must be signed and certified in accordance with 40 CFR §270.11.

* This applies to Work Plan execution that requires more than one hundred eighty (180) calendar days
** This applies to Work Plan execution that requires more than one year.

B. In deriving human health action levels for constituents for which MCLs have not been promulgated, the recommended equations/assumptions shall be that followed by Region 3 in its Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

III. Surface Water

A. Action levels for constituents in surface water shall be concentrations specified as:

1. Water Quality Standards established pursuant to the Clean Water Act by the State in which the facility is located, where such standards are expressed as numeric values; or

2. Numeric interpretations of State narrative water quality standards where water quality standards expressed as numeric values have not been established by the State; or

3. MCLs for constituents in surface water designated by the State for drinking water supply, where numeric values or numeric interpretations, described in paragraphs 1 and 2, are not available; or

4. For constituents in surface waters designated by the State for drinking water supply for which numeric values, numeric interpretations, or MCLs are not available, a concentration which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated assuming exposure through consumption of the water contaminated with the constituent; or

5. For constituents in surface waters designated for use or uses other than drinking water supply and for which numeric values or numeric interpretations have not been established, a concentration established by the EPA Regional Administrator which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

B. In deriving human health action levels for constituents in surface water, the recommended equations/assumptions shall be that followed by Region 3 in its Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

IV. Air

A. Action levels for constituents in air shall be defined as concentrations which meet the criteria specified in section I.A.1 through I.A.4. The action levels for air shall be measured or estimated at the facility boundary, or another location closer to the unit if necessary to protect human health and the environment.

B. In deriving human health action levels for constituents in air, the RfC should be utilized as the action level, where available. The RfC includes exposure assumptions, and no calculations are necessary to calculate an action level. If a RfC is not available, the recommended methodology/assumptions shall be that followed in the Region 3 Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8909

APR 07 1998

RECEIVED
APR 13 1998
Dept. of Environmental Quality
Office of Pollution Control

4WD-RPB

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: Preliminary Draft HSWA Permit
Koppers Industries/Beazer East
Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

Enclosed with this letter are the draft fact sheet and the preliminary draft permit that the U.S. Environmental Protection Agency (EPA) has prepared to cover those portions of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) which affect the Koppers facility located in Grenada, Mississippi. The finalized version of this preliminary draft permit, along with the RCRA Post-Closure Permit issued by Mississippi, will constitute the full RCRA Permit for your facility.

Please review the preliminary draft HSWA Portion of the RCRA Permit (i.e., the "HSWA Permit") and provide any written comments within thirty (30) calendar days after receipt of this letter. After this informal review of the preliminary draft permit, the draft HSWA Permit for Koppers/Beazer East will be officially public noticed by EPA per 40 CFR §124.

As part of the official forty-five (45) day public notice period, EPA will provide you with a copy of the draft HSWA Permit. During the official public notice period, all persons, including applicants, who believe any condition of a draft HSWA Permit is inappropriate, must raise all reasonably ascertainable issues and submit reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period.

During your review, please note that EPA has performed some "bookkeeping" measures by adding a couple of newly identified SWMUs to Appendix A. For example, based on the March 5, 1998, site visit of Mr. Wesley S. Hardegree of my staff, two (2) new solid waste management units (SWMUs) were identified and added to the Preliminary Draft HSWA Permit(i.e., the old oil/water separator and the old south drip pad/track). In addition, given the conversation held at the facility on March 5, Mr. Hardegree also expanded the Interim Measures objective for the Former Wastewater Lagoons (SWMU 11) to include excavation of sediment in the adjacent Central Creek. The Storage Shed (SWMU 14) and the Soil Containment Structures (SWMU 15) were also included as SWMUs whose removal actions in 1996 must undergo Agency review prior to acceptance of a no further action proposal.

If there are any questions regarding the enclosures or the permitting process, please contact Wesley Hardegree of the South Programs Section (SPS) at(404) 562-8486.

Sincerely,

N.M. Kumar

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

Enclosures: 1) Draft Fact Sheet
2) Preliminary Draft HSWA Portion of the RCRA Permit

cc: Wayne Stover, MDEQ (with enclosures)
R.D. Collins, Vice President, Koppers Industries (with enclosures)

FACT SHEET

FOR PERMIT UNDER 1984 RCRA AMENDMENTS PERTAINING TO
SOLID AND HAZARDOUS WASTE MANAGEMENT AT
KOPPERS INDUSTRIES, INC./BEAZER EAST, INC.
GRENADA, MISSISSIPPI
EPA I.D. NUMBER: FLD 007 027 543

This fact sheet is prepared pursuant to 40 CFR §124.8 for the draft permit developed by the U.S. Environmental Protection Agency (EPA) for Koppers Industries, Inc. and Beazer East, Inc. (i.e., "Koppers"). If issued, this federal permit along with the Post-Closure Permit from the Mississippi Department of Environmental Quality (MDEQ) will cover all applicable sections of the Resource Conservation and Recovery Act (RCRA) except for those requirements which become effective by statute, are promulgated under 40 CFR Part 268 restricting placement of hazardous waste in or on the land or are promulgated under 40 CFR Part 264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units, as specified in 40 CFR §270.4. Together, these permits constitute a complete RCRA Hazardous Waste Permit for this facility (i.e., the "RCRA Permit").

A. RCRA PERMIT PROCESS/STRUCTURE

The purpose of the permitting process is to afford EPA and interested citizens the opportunity to evaluate the ability of the Permittee to comply with the applicable requirements promulgated under the Resource Conservation and Recovery Act (RCRA), as amended by the 1984 Hazardous and Solid Waste Amendments (HSWA). EPA administers the statutory requirements of the 1984 Amendments for which Mississippi is not authorized. The remaining sections of this fact sheet will identify the federal portion of the RCRA Permit as the "HSWA Permit." The remaining portion of Koppers RCRA Permit, which is administered by the MDEQ, will be identified as the "Post-Closure Permit."

It should be noted that Koppers was previously issued a HSWA Permit which became effective on June 14, 1988. The duration of the 1988 HSWA Permit was ten (10) years; therefore, the 1988 HSWA Permit expires on June 14, 1998. However, pursuant to 40 CFR §270.51, a timely application was submitted by Koppers. Submittal of the application allows the conditions of the expired 1988 HSWA Permit to continue in force until a new HSWA Permit becomes effective.

B. HSWA PERMIT STRUCTURE

The HSWA Permit is divided into five (5) parts: a cover sheet setting forth the basic legal authority for issuing the permit; a section on standard conditions applicable to all hazardous waste management facilities (Part I); a section on the corrective action conditions applicable to this particular facility (Part II); a section addressing applicable land disposal restrictions (Part III); and a section addressing the emission standards for tanks, containers, and surface impoundments (Part IV).

C. FACILITY DESCRIPTION AND HSWA APPLICABILITY

Koppers is located in Grenada, Mississippi on approximately 171 acres. The facility has been in existence since 1904. Plant operations have involved the manufacturing of treated wood products such as railroad ties, poles, and lumber in pressurized cylinders using various conditioning and treating processes. Since startup in 1904, wood treating operations have involved creosote and pentachlorophenol based preservatives only.

Specific areas of the facility which are subject to the corrective action requirements of HSWA are solid waste management units (SWMUs) and areas of concern (AOCs). SWMUs are any units which have been used for the treatment, storage or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. AOCs are any areas having a probable release of a hazardous waste or hazardous constituent which is not from a SWMU and is determined to pose an current or potential threat to human health or the environment. Based on permit application information submitted by the Permittee, the 1987 RCRA Facility Assessment (RFA) report, a March 1998 site visit, and information contained in state and EPA records, seventeen (17) SWMUs and no AOCs have been identified at this time. Justifications for actions required by the draft HSWA Permit are contained in documentation included in EPA administrative files.

Issuance of the HSWA Permit will provide EPA with the authority to require necessary corrective action at identified SWMUs. Specifically, the HSWA Permit for Koppers requires the submittal of a Confirmatory Sampling (CS) Work Plan for no identified SWMUs or AOCs. The objective of a CS Work Plan is to determine the presence or absence of a release. A release is defined as a hazardous constituent concentration above background.

The HSWA Permit for Koppers also requires continuation of the RCRA Facility Investigation (RFI) for fourteen (14) of the seventeen (17) identified SWMUs. The purpose of the RFI is to characterize the nature and extent of releases to soil, groundwater, surface water, and air. Information gained by the RFI characterization is utilized to determine whether or not a RCRA Corrective Measures Study (CMS) is necessary. If comparison of the characterized release data to conservative health-based levels (i.e., action levels) identifies the potential need for remedial measures, the owner or operator is then responsible for performing a CMS. During this phase of the Corrective Action Process, the owner or operator will identify, study and recommend specific alternatives for remedial action. The CMS includes a public participation plan, and the public will be given an opportunity to comment on the proposed remedial alternative prior to the selection of the final remedy.

Information gathered during the RFI will be used not only to determine the potential need for and support for corrective measures, but also to aid in determining if Interim Measures (IM) are necessary. Interim Measures are activities which prevent or lessen the continued migration of contamination. Interim Measures may be used to protect human health and the environment from current or potential threats. Because Interim Measures often address the most intense and persistent areas of contamination at a facility, Interim Measures are usually incorporated into the proposed final remedy.

Although not strictly regulated under the HSWA Permit, some SWMUs have undergone "Interim Measure-type" actions as part of RCRA closure (Sprayfield - SWMU 3) or closed as a landfill under a RCRA Post-Closure Permit (Surface Impoundment - SWMU 2) or a MDEQ Order (Boiler Ash Landfill - SWMU 5). The Temporary Storage Shed (SWMU 14) and Two (2) Soil Containment Structures (SWMU 15) also underwent contaminated soil removal in 1996. The material in SWMUs 14 and 15 were from soil excavations in the tank process area and the drip track area, respectively. The Removal Documentation Report for SWMUs 14 and 15 has not yet been reviewed by the Agency to verify the proposed no further action recommendation. Interim Measures under the HSWA Permit, in this case contaminated material/soil removal, was also performed at the South Waste Piles and Storage Shed (SWMU 13). Currently, Interim Measures is planned for the Former Wastewater Treatment System (SWMU 11). These measures include containment actions to control the further discharge of dense nonaqueous phase liquids (DNAPL) into the Central Creek and some contaminated sediment removal from the Central Creek.

EPA has weighed the merits of imposing Interim Measures at permit issuance to address the groundwater contamination versus addressing groundwater remediation under the remedy to-be-selected after finalization of the RFI and CMS. Characterization of the extent of contamination under the RFI process appears to be relatively near completion. Along with minor contaminant extent of contamination concerns, some of the major areas of disagreement seen in EPA's preliminary review of the RFI Report seem to be associated with the RFI Risk Assessment and ultimate remediation objectives, both issues which would also occur with the imposition of Interim Measures. EPA's **preliminary decision** is to continue on with the RFI process and impose a concurrent RFI/CMS with the notice of technical inadequacy (NOTI) on the January 1998 Phase II RFI Report. **However, to propel cleanup, Interim Measures may be imposed once the new EPA facility coordinator becomes more familiar with the overall project pace and the EPA remedial objectives are further refined/clarified for the facility.**

Based on current information, corrective action under the HSWA Permit is not warranted for the remaining three (3) SWMUs not already covered by CS or RFI requirements. Therefore, a no further action decision at this time has been made for these particular SWMUs. Note that these SWMUs are RCRA Regulated Units whose closure was managed by MDEQ. One (1) SWMU is currently permitted by MDEQ and another is under a MDEQ Consent Order.

In addition to requiring corrective action at this time for identified SWMUs and AOCs, the permit also includes provisions for notifying EPA of newly identified releases from previously identified SWMUs or AOCs, newly identified SWMUs and newly identified AOCs which are discovered after permit issuance. The HSWA Permit also requires notification of imminent hazards, and when applicable, compliance with the requirements developed under land disposal restrictions and organic air emission standards.

D. PERMIT CONDITIONS

HSWA PERMIT COVER PAGE

The Cover Page cites authority for issuance of the HSWA Permit and establishes the term of the permit.

PART I. STANDARD PERMIT CONDITIONS

Part I of the permit sets forth standard administrative conditions applicable to all hazardous waste management facilities. Unless otherwise specified, all citations refer to the regulations as codified in Title 40 of the Code of Federal Regulations (40 CFR).

Activity	Regulation (40 CFR)	Permit Condition
Effect of Permit	§270.4 §270.30(g)	I.A.
Permit Actions	§270.30(f) §270.41 §270.42 §270.43	I.B.
Severability	§124.16	I.C.
Duty to Comply	§270.30(a)	I.D.1.
Duty to Reapply	§270.10(h) §270.30(b)	I.D.2.
Obligation for Corrective Action	§264.101 §270.1(c) §270.51	I.D.3.
Need to Halt or Reduce Activity	§270.30(c)	I.D.4.
Duty to Mitigate	§270.30(d)	I.D.5.
Proper Operation and Maintenance	§270.30(e)	I.D.6.
Duty to Provide Information	§264.74 §270.30(h)	I.D.7.
Inspection and Entry	§270.30(i)	I.D.8.
Monitoring and Records	§264.74(b) §270.30(j)	I.D.9.
Reporting Planned Changes	§270.30(l)(1)&(2)	I.D.10.

Activity	Regulation (40 CFR)	Permit Condition
Anticipated Noncompliance	§270.30(l)(2)	I.D.11.
Transfer of Permit	§264.12(c) §270.30(l)(3) §270.40	I.D.12.
Compliance Schedules	§270.33	I.D.13.
Twenty-four Hour Reporting	§264.56(d) & (j) §270.30(l)(6) §270.30(h)	I.D.14.
Other Noncompliance	§270.30(l)(10)	I.D.15.
Other Information	§270.30(l)(11)	I.D.16.
Signatory Requirement	§270.11 §270.30(k)	I.E.
Confidential Information	§270.12, Part 2	I.F.
Definitions	Part 124 Part 260 Part 261 Part 264 Part 270 RCRA, as amended	I.G.

PART II. SPECIFIC PERMIT CONDITIONS

Part II of the permit sets forth the specific conditions for this facility with which the Permittee must comply.

PERMIT CONDITION	JUSTIFICATION
II.A. Applicability	40 CFR §264.101(a) requires that corrective action be instituted as necessary to protect human health and the environment for all releases of hazardous waste or constituents from many solid waste management units, regardless of the time that waste was placed in the unit.

II.B.	Notification and Assessment for Newly Identified SWMUs and AOCs	40 CFR §270.14(d) gives EPA authority to require the Permittee to submit specific information for each solid waste management unit at a facility. 40 CFR §270.14(d)(3) also gives EPA authority to require the Permittee to conduct and provide the results of sampling and analysis where the Regional Administrator ascertains it is necessary to determine whether a more complete investigation is necessary.
II.C.	Notification Requirements for Newly Discovered Releases at SWMUs or AOCs	
II.D.	Confirmatory Sampling	In order to decide whether corrective action under 40 CFR §264.101 is required, it is necessary to characterize the nature and extent of releases, identify exposure pathways, and evaluate effects on human health and the environment.
II.E.	RCRA Facility Investigation	
II.F.	Interim Measures	Interim measures may be necessary to protect human health and the environment. Therefore, justification for this condition is identical to those stated for Condition II.G. 40 CFR §270.33(a) requires progress reports if the time to complete any interim activity exceeds one year.
II.G.	Corrective Measures Study	40 CFR §264.101(a) requires corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit under Subtitle C, regardless of the time at which waste was placed in such unit. 40 CFR §264.101(b) requires assurance of
II.H.	Remedy Approval and Permit Modification	
II.I.	Modification of the Corrective Action Schedule of Compliance	

financial responsibility for completing corrective action. 40 CFR §264.101(c) requires corrective action beyond the facility boundary. Once a final remedy has been selected, it will be officially incorporated into the permit through a permit modification (40 CFR §270.41 and 40 CFR §270.42). 40 CFR §264.101(b) requires the permit to contain schedules of compliance for corrective action which cannot be completed prior to issuance.

II.J.	Plan and Report Requirements	40 CFR §270.11 and §270.30(k) require that all applications, reports, and/or information submitted to the Regional Administrator be signed and certified.
II.K.	Approval/ Disapproval of Submittals	In order to facilitate the corrective action process required under 40 CFR §264.101, the Permittee is given the opportunity, under these conditions, to attempt informal resolution of any disagreement regarding the Regional Administrator's revision of a submittal or disapproval of a revised submittal.
II.L.	Dispute Resolution	

PART III. LAND DISPOSAL RESTRICTIONS

Part III of this permit outlines land disposal restrictions in accordance with 40 CFR Part 268.

PART IV. ORGANIC AIR EMISSIONS

Part IV of this permit sets forth requirements to limit organic emissions from tanks, containers, and surface impoundments in accordance with 40 CFR Part 264 Subpart CC.

E. VARIANCES

This permit does not provide for variances to the regulations cited above.

F. PROCEDURES

If possible, issuance of a complete RCRA Hazardous Waste Permit to Koppers will be coordinated by both the EPA and MDEQ. The portion of the RCRA Permit issued by the State of Mississippi will cover those portions of RCRA, including HSWA provisions, for which it has final authorization to administer. Consequently, the federal portion of the RCRA Permit will address those provisions which the state has not received final authorization to administer. If the State portion of the RCRA Permit is written to include those conditions contained in the federal permit, then the State may assume administration for those requirements contained in the federal portion of the RCRA Permit upon receiving final authorization for those provisions.

The regulations under 40 CFR §124.10 require that a 45-day comment period be instituted for each draft permit under the Resource Conservation and Recovery Act. The comment period will begin on ________________, which is the date of publication of the public notice in major local newspapers of general circulation, and will end on ________________. The public notice will also be broadcast over local radio stations.

A public hearing has been scheduled for ____________________ __, at ______, e.s.t. or c.s.t., at the ________________ located in ____________________________.

The draft federal HSWA permit and fact sheet may be viewed and copied at the EPA Regional Office in Atlanta, Georgia between the hours of 8:00 am to 4:30 pm, Monday through Friday, except legal holidays. Additional copies of the draft federal permit and fact sheet will be available for public review at MDEQ, Hazardous Waste Division located in Jackson, Mississippi, (601) 961-5070.

Persons wishing to request a public hearing or to comment on the permit application or the proposed permit conditions should submit such requests or comments in writing. Copies of comments regarding the federal RCRA permit should be sent to the Environmental Protection Agency, ATTENTION: Mr. Narindar Kumar, Chief, RCRA Branch, Waste Management Division, at 61 Forsyth Street, Atlanta, Georgia 30303. All comments must be received no later than midnight, _________, ____________.

When EPA makes a final permit decision, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final decision. The final permit decision shall become effective thirty (30) days after the service of notice of the decision unless a later date is specified or review is requested under 40 CFR §124.19. If no comments were received requesting a change in the draft permit, the final permit shall become effective immediately upon issuance.

G. CONTACT PERSONS

EPA:

Kent Williams/Wesley Hardegree
U.S. Environmental Protection Agency
RCRA Programs Branch
61 Forsyth Street
Atlanta, Georgia 30303
(404) 562-8440

State of Mississippi:

Steve Spengler/Wayne Stover
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289
(601) 961-5070

HSWA PORTION OF THE RCRA PERMIT

OWNER: Koppers Industries Inc.
P.O. Box 160
Tie Plant, MS 38960

OPERATOR: Beazer East
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

EPA I.D. No MSD 007 027 543

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, 42 USC Section 6901 et seq., and the Hazardous and Solid Waste Amendments (HSWA) of 1984, P.L. 98-616, and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations), a permit is issued to Koppers Industries and Beazer East (hereafter collectively called the Permittee), who together own and operate a hazardous waste facility located in Tie Plant, Mississippi at latitude 33°44 '04" North and longitude 89°4 '19" West.

This Permit, in conjunction with the Hazardous Waste Management Permit issued by the State of Mississippi, constitutes the full RCRA Permit for this facility. The Permittee, pursuant to this permit, shall be required to investigate any releases of hazardous waste or hazardous constituents at the facility regardless of the time at which waste was placed in a unit and to take appropriate corrective action for any such releases. The permit also requires the Permittee to comply with all land disposal restrictions and air emission standards applicable to this facility and to certify annually that on-site generation of hazardous waste is minimized to the extent practicable.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any attachments) and applicable regulations contained in 40 CFR Parts 260 through 264, 266, 268, 270, and 124 as specified in the permit and statutory requirements of RCRA, as amended by HSWA. Nothing in this permit shall preclude the Regional Administrator from reviewing and modifying the permit at any time during its term in accordance with 40 CFR §270.41.

This permit is based on the premise that information and reports submitted by the Permittee prior to issuance of this permit are accurate. Any inaccuracies found in this information or information submitted as required by this permit may be grounds for termination or modification of this permit in accordance with 40 CFR §270.41, §270.42, and §270.43 and potential enforcement action. The Permittee must inform EPA of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

The authority to perform all actions necessary to issue, modify, enforce, or revoke this permit has been delegated by the Regional Administrator to the Waste Management Division Director.

This permit is effective ________, and shall remain in effect for ten (10) years until ___________, unless revoked and reissued, or terminated under 40 CFR §270.41 and §270.43 or continued in accordance with 40 CFR §270.51(a). All obligations for performance of HSWA provisions required under this permit are in effect until deemed complete by the Regional Administrator.

If any conditions of this permit are appealed in accordance with 40 CFR §124.19, the effective date of the conditions determined to be stayed in accordance with 40 CFR §124.16 shall be determined by final agency action as specified under 40 CFR §124.19.

____
Issued Date

____
Richard D. Green
Director
Waste Management Division

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PART I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

Compliance with this RCRA permit constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, are promulgated under 40 CFR Part 268 restricting placement of hazardous waste in or on the land or are promulgated under 40 CFR Part 264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units, as specified in 40 CFR §270.4. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Section 3008(a), 3008(h), 3004(v), 3008(c), 3007, 3013 or Section 7003 of RCRA, Sections 104, 106(a), 106(e), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

I.B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§270.41, 270.42, and 270.43 except for the Corrective Action schedule of compliance which shall be modified in accordance with Condition II.I. of this permit. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

I.C. SEVERABILITY

The provisions of this permit are severable, as specified in 40 CFR §124.16 and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DUTIES AND REQUIREMENTS

I.D.1. Duty to Comply

The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

I.D.2. Duty to Reapply

If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least one hundred eighty (180) calendar days before this permit expires, unless permission for a later date has been granted by the Regional Administrator.

I.D.3. Obligation for Corrective Action

The Permittee is required to continue this permit for any period necessary to comply with the corrective action requirements of this permit.

I.D.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.D.5. Duty to Mitigate

In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases of hazardous waste or hazardous constituents to the environment, and shall carry out such measures as are reasonable to prevent significant adverse effects on human health or the environment.

I.D.6. Proper Operation and Maintenance

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

I.D.7. Duty to Provide Information

The Permittee shall furnish to the Regional Administrator, within a reasonable time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

I.D.8. Inspection and Entry

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

a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated, or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.D.9. Monitoring and Records

I.D.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative waste sample to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261, the EPA Region 4 Environmental Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP) (most recent version), or an equivalent method approved by the Regional Administrator. Procedures for sampling contaminated media must be those identified in the EPA Region 4 SOP or an equivalent method approved by the Regional Administrator. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, or an equivalent method approved by the Regional Administrator.

I.D.9.b. The Permittee shall retain at the facility, as provided for under 40 CFR Part 264, or other appropriate location as approved by the Regional Administrator, records of all monitoring information required under the terms of this permit, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report, certification or application, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittee shall retain a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to 40 CFR Part 268 for at least five years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

I.D.9.c. Records of monitoring information shall specify:

i. The dates, exact place, and times of sampling, or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The name of the laboratory which performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

I.D.10. Reporting Planned Changes

The Permittee shall give written notice to the Regional Administrator as soon as possible of any planned physical alterations or additions, including Permittee initiated Interim Measures under Condition II.F.1.b., which impact known or suspected contamination at or from SWMUs or AOCs referenced in Conditions II.A.1., II.A.3., II.A.4., and II.C. The notice shall include at a minimum, a summary of the planned change, the reason for the planned change, a discussion of the impact(s) the planned change will have on the ability to investigate contamination at or from the SWMU or AOC, and a discussion of the impact(s) the planned change will have on the known or suspected contamination.

I.D.11. Anticipated Noncompliance

The Permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this permit.

I.D.12. Transfer of Permit

This permit may be transferred to a new owner or operator only after notice to the Regional Administrator and only if it is modified or revoked and reissued pursuant to 40 CFR §270.40(b) or §270.41(b)(2) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate Act. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post-closure care period, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270, HSWA and this permit.

I.D.13. Compliance Schedules

Written notification of compliance or noncompliance with any item identified in the compliance schedule of this permit shall be submitted according to each schedule date. If the Permittee does not notify the Regional Administrator within fourteen (14) calendar days of its compliance or noncompliance with the schedule, the Permittee shall be subject to an enforcement action. Submittal of a required item according to the schedule constitutes notification of compliance.

I.D.14. Twenty-four Hour Reporting

I.D.14.a. The Permittee shall report any noncompliance or any imminent or existing hazard from a release of hazardous waste or hazardous constituents which may endanger human health or the environment. Any such information shall be reported orally to the Regional Administrator within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include:

i. Information concerning the release of any hazardous waste or hazardous constituents which may endanger public drinking water supplies.

ii. Information concerning the release or discharge of any hazardous waste or hazardous constituents, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

I.D.14.b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazard to environment and human health outside the facility; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.D.14.c. A written report shall also be provided to the Regional Administrator within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Conditions I.D.14.a. and b.; a description of the noncompliance or imminent hazard and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance or imminent hazard has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance or imminent hazard.

I.D.15. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time written reports as required by this permit are submitted. The reports shall contain the information listed in Condition I.D.14. as appropriate.

I.D.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in any document(s) submitted to the Regional Administrator, the Permittee shall promptly submit such facts or information.

I.E. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR §270.11.

I.F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR §270.12.

I.G. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR Parts 124, 260, 261, 264, and 270, unless this permit specifically provides otherwise. Where terms are not defined in the regulation, the permit, or EPA guidelines or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.G.1. "Action levels" for the purposes of this permit are health-based concentrations of hazardous constituents determined to be indicators for the protection of human health and/or the environment.

I.G.2. The term "area of concern" (AOC) for purposes of this permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Regional Administrator to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and 40 CFR §270.32(b)(2) in order to ensure adequate protection of human health and the environment.

I.G.3. A "Corrective Action Management Unit" (CAMU) for purposes of this permit, includes any area within a facility that is designated by the Regional Administrator under part 264 Subpart S, for the purpose of implementing corrective action requirements under §264.101 and RCRA section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

I.G.4. "Corrective measures" for purposes of this permit, include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR §264.101. Corrective measures may address releases to air, soils, surface water or groundwater.

I.G.5. "Extent of contamination" for the purposes of this permit is defined as the horizontal and vertical area in which the concentrations of hazardous constituents in the environmental media being investigated are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Regional Administrator.

I.G.6. "Facility" for purposes of this permit includes all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combination of them). For the purposes of implementing corrective action under §264.101, a facility includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

I.G.7. A "hazardous constituent" for purposes of this permit are those substances listed in 40 CFR Part 261 Appendix VIII and Part 264 Appendix IX.

I.G.8. "Interim Measures" for purposes of this permit are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.

I.G.9. "Land Disposal" for purposes of this permit and 40 CFR Part 268 means placement in or on the land except for a CAMU and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

I.G.10. "Landfill" for the purposes of this permit includes any disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

I.G.11. A "release" for purposes of this permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

I.G.12. "Remediation waste" for the purposes of this permit includes all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under §264.101 and RCRA section 3008(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004(v) or 3008(h) for releases beyond the facility boundary.

I.G.13. "Solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

I.G.14. A "solid waste management unit" (SWMU) for the purposes of this permit includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g. product or process spills).

I.G.15. A "Temporary Unit" (TU) for the purposes of this permit includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Regional Administrator, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.

I.G.16. A "unit" for the purposes of this permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

PART II - CORRECTIVE ACTION

II.A. APPLICABILITY

The Conditions of this Part apply to:

II.A.1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix A-1, which require a RCRA Facility Investigation (RFI), some of which may or may not require Interim Measures (IM);

II.A.2. The SWMUs and AOCs identified in Appendix A-2, which require no further investigation under this permit at this time;

II.A.3. The SWMUs and AOCs identified in Appendix A-3, which require confirmatory sampling;

II.A.4. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means; As used in this Part of the permit, the terms "discover", "discovery", or "discovered" refer to the date on which the Permittee either, (1) visually observes evidence of a new SWMU or AOC, (2) visually observes evidence of a previously unidentified release of hazardous constituents to the environment, or (3) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment;

II.A.5. Contamination which has migrated beyond the facility boundary, if applicable. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Regional Administrator that, despite the Permittee's best efforts, as determined by the Regional Administrator, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required.

II.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

II.B.1. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any suspected new AOC as discovered under Condition II.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). The Regional Administrator may conduct, or require the Permittee to conduct, further assessment (i.e., Confirmatory Sampling) in order to determine the status of the suspected AOC. The Regional Administrator will notify the Permittee in writing of the final determination as to the status of the suspected AOC. If the Regional Administrator determines that further investigation of an AOC is required, the permit will be modified in accordance with 40 CFR §270.41.

II.B.2. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any additional SWMU as discovered under Condition II.A.4.

II.B.3. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition II.B.2. At a minimum, the SAR shall provide the following information:

a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR §270.14(b)(19).

b. Designation of type and function of unit(s).

c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

d. Dates that the unit(s) was operated.

e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the wastes.

f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

II.B.4. Based on the results of the SAR, the Regional Administrator shall determine the need for further investigations at the SWMUs covered in the SAR. If the Regional Administrator determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. or II.D.1.

II.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES FROM SWMUs or AOCs

II.C.1. The Permittee shall notify the Regional Administrator in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition II.A.2. or SWMU or AOCs identified in Condition II.A.4. for which further investigation under Condition II.B.4. was not required.

II.C.2. If the Regional Administrator determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b.

II.D. CONFIRMATORY SAMPLING (CS)

II.D.1. Upon notification by the Regional Administrator, the Permittee shall prepare and submit a Confirmatory Sampling (CS) Work Plan for suspected AOCs per Condition II.B.1. or newly identified SWMUs per Condition II.B.4. The work plan shall be submitted within forty-five (45) calendar days of notification by the Regional Administrator that a CS Work Plan is required. The CS Work Plan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a release has occurred. It should also address applicable requirements and affected media. In order to partly or wholly satisfy the CS requirement, previously existing data may be submitted with the work plan for the Regional Administrator's consideration.

II.D.2. The CS Work Plan must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the CS Work Plan schedule in the letter approving the CS Work Plan. If the Regional Administrator disapproves the CS Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CS Work Plan's deficiencies and specify a due date for submission of a revised CS Work Plan, (2) revise the CS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CS Work Plan and notify the Permittee of the conditions.

II.D.3. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Work Plan.

II.D.4. The Permittee shall prepare and submit to the Regional Administrator in accordance with the schedule in the approved CS Work Plan, a Confirmatory Sampling (CS) Report identifying all SWMUs or AOCs that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data, and a summary and analysis of the data, that supports the above determination. If submittal of the CS Report coincides with submittal of the RFI Report, then the CS Report and the RFI Report may be combined into one submittal.

II.D.5. Based on the results of the CS Report, the Regional Administrator shall determine the need for further investigations at the SWMUs or AOCs covered in the CS Report. If the Regional Administrator determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. The Regional Administrator will notify the Permittee of any no further action decision.

II.E. RCRA FACILITY INVESTIGATION (RFI)

II.E.1. RFI Work Plan(s)

II.E.1.a. Because a RCRA Facility Investigation (RFI) has already been implemented for many of the units identified in Condition II.A.1, the RFI requirements listed in Condition II.E shall be interpreted as follows: If an RFI Work Plan has not been submitted for a unit, then Condition II.E.1.b initiates the RFI Requirement. If an RFI Work Plan has already been submitted, then Condition II.E.1.d through Condition II.E.3.d control the RFI requirements for this unit. If an RFI Work Plan has already been submitted and approved for a unit, then Condition II.E.2 and beyond govern implementation of the RFI requirements for this unit. If the RFI Report for a unit has already been submitted to the Regional Administrator for review, then Conditions II.E.3.d and beyond are applicable for this unit.

II.E.1.b. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of notification by the Regional Administrator, an RFI Work Plan for those units identified under Condition II.B.4., Condition II.C.2., or Condition II.D.5. The RFI Work Plan(s) shall be developed to meet the requirements of Condition II.E.1.c.

II.E.1.c. The RFI Work Plan(s) shall meet the requirements of Appendix B. The RFI Work Plan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of contamination and the potential pathways of contaminant releases to the air, soil, surface water, and groundwater. The Permittee must provide sufficient justification and associated documentation that a release is not probable or has already been characterized if a unit or a media/pathway associated with a unit (groundwater, surface water, soil, subsurface gas, or air) is not included in the RFI Work Plan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Regional Administrator. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix B. Such omissions or deviations are subject to the approval of the Regional Administrator. In addition, the scope of the RFI Work Plan(s) shall include all investigations necessary to ensure compliance with 40 CFR §264.101(c).

II.E.1.d. The RFI Work Plan(s) must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the RFI Work Plan schedule in the letter approving the RFI Work Plan(s). If the Regional Administrator disapproves the RFI Work Plan(s), the Regional Administrator shall either (1) notify the Permittee in writing of the RFI Work Plan's deficiencies and specify a due date for submission of a revised RFI Work Plan, (2) revise the RFI Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Work Plan, or (3) conditionally approve the RFI Work Plan and notify the Permittee of the conditions.

II.E.2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Work Plan(s) and Appendix B. The Permittee shall notify the Regional Administrator at least twenty (20) days prior to any sampling activity.

II.E.3. RFI Reports

II.E.3.a. The Permittee shall prepare and submit to the Regional Administrator Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Work Plan(s) submitted under Condition II.E.1. The Draft RFI Report(s) shall be submitted to the Regional Administrator for review in accordance with the schedule in the approved RFI Work Plan(s). The Final RFI Report(s) shall be submitted to the Regional Administrator within thirty (30) calendar days of receipt of the Regional Administrator's final comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a work plan for the final phase investigatory actions required based on the initial findings. Approval of the final phase work plan shall be carried out in accordance with Condition II.E.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

II.E.3.b. The Permittee shall prepare and submit to the Regional Administrator, along with the Draft and Final RFI Report(s), action levels for each of the hazardous constituents reported in Condition II.E.3.a. Action levels shall be calculated as specified in Appendix E of this permit.

II.E.3.c. The Regional Administrator will review the RFI Report(s), including the action levels described in Condition II.E.3.b. The Regional Administrator shall notify the Permittee of the need for further investigative action if necessary and, if appropriate at this moment of the investigation, inform the Permittee, if not already notified, of the need for a Corrective Measures Study to meet the requirements of II.G and 40 CFR §264.101. The Regional Administrator will notify the permittee of any no further action decision. Any further investigative action required by the Regional Administrator shall be prepared and submitted in accordance with a schedule specified by the Regional Administrator and approved in accordance with Condition II.E.1.d.

II.E.3.d. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Regional Administrator with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Regional Administrator in the RFI Work Plan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of findings;

iii. Summaries of <u>any</u> deviations from the approved RFI Work Plan during the reporting period;

iv. Summaries of any significant contacts with local community public interest groups or State government;

v. Summaries of <u>any</u> problems or potential problems encountered during the reporting period;

vi. Actions taken to rectify problems;

vii. Changes in relevant personnel;

viii. Projected work for the next reporting period; and

ix. Copies of daily reports, inspection reports, data, etc.

II.F. <u>INTERIM MEASURES (IM)</u>

II.F.1. <u>IM Work Plan</u>

II.F.1.a Because Interim Measures are already underway for the certain SWMUs identified in Condition II.A.1. (see Appendix A.1), the IM requirements listed in Condition II.F. shall be interpreted as follows: If a required IM Work Plan has not been submitted for a unit, then Conditions II.F.1.b. or II.F.1.c. and beyond are applicable. If IM has not been imposed for a unit, then Condition II.F.1.d. and beyond are applicable. If an IM Work Plan has already been submitted but is unapproved, then Condition II.F.1.e. and beyond control the IM for this unit. If an IM Work Plan has already been submitted and approved for a unit, then Condition II.F.2. and beyond govern implementation of the IM requirements for this unit.

II.F.1.b. Upon notification by the Regional Administrator, the Permittee shall prepare and submit an Interim Measures (IM) Work Plan for any SWMU or AOC which the Regional Administrator determines is necessary. IM are necessary in order to minimize or prevent the further migration of contaminants and limiting actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Work Plan shall be submitted within thirty (30) calendar days of such notification and shall include the elements listed in II.F.1 d. Such interim measures may be conducted concurrently with investigations required under the terms of this permit.

II.F.1.c. The Permittee may initiate IM at a SWMU or AOC by submitting the appropriate notification pursuant to Condition I.D.10. The Regional Administrator will process Permittee initiated IM by either conditionally approving the IM or imposing an IM Work Plan per Condition II.F.1.b. Permittee-initiated IM shall be considered conditionally approved unless the Regional Administrator specifically imposes an IM Work Plan within thirty (30) calendar days of receipt of notification of the Permittee initiated IM. The scope and success of Permittee initiated IM conditionally approved per Condition II.F.1.c. shall be subject to subsequent in-depth review; the Regional Administrator will either comment on or approve the Permittee initiated IM. Permittee initiated IM must follow the progress and final reporting requirements in Condition II.F.3.

II.F.1.d. The IM Work Plan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into any long-term solution at the facility. The IM Work Plan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

II.F.1.e. The IM Work Plan imposed under Condition II.F.1.b. must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan. If the Regional Administrator disapproves the IM Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the IM Work Plan's deficiencies and specify a due date for submission of a revised IM Work Plan, (2) revise the IM Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Work Plan, or (3) conditionally approve the IM Work Plan and notify the Permittee of the conditions.

II.F.2. <u>IM Implementation</u>

II.F.2.a. The Permittee shall implement the interim measures imposed under Condition II.F.1.a. in accordance with the approved IM Work Plan.

II.F.2.b. The Permittee shall give notice to the Regional Administrator as soon as possible of any planned changes, reductions or additions to the IM Work Plan imposed under Condition II.F.1.a. or initiated by the Permittee under Condition II.F.1.b.

II.F.2.c. Final approval of corrective action required under 40 CFR §264.101 which is achieved through interim measures shall be in accordance with 40 CFR §270.41 and Condition II.H. as a permit modification.

II.F.3. IM Reports

II.F.3.a. If the time required for completion of interim measures imposed under Condition II.F.1.a. or implemented under Condition II.F.1.b. is greater than one year, the Permittee shall provide the Regional Administrator with progress reports at intervals specified in the approved Work Plan or semi-annually for Permittee initiated interim measures. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of findings;

iii. Summaries of any deviations from the IM Work Plan during the reporting period;

iv. Summaries of any problems or potential problems encountered during the reporting period; and

v. Projected work for the next reporting period.

II.F.3.b. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of completion of interim measures conducted under Condition II.F., an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

i. A description of interim measures implemented;

ii. Summaries of results;

iii. Summaries of all problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.9.

II.G. CORRECTIVE MEASURES STUDY

II.G.1. Corrective Measures Study (CMS) Work Plan

II.G.1.a. The Permittee shall prepare and submit a CMS Work Plan for those units requiring a CMS within ninety (90) calendar days of notification by the Regional Administrator that a CMS is required. This CMS Work Plan shall be developed to meet the requirements of Condition II.G.1.b. The Permittee may seek approval from the Regional Administrator for concurrent RFI/CMS. The CMS may be performed concurrent with the RFI process if the Regional Administrator determines that sufficient investigative details are available to allow concurrent action.

II.G.1.b. The CMS Work Plan shall meet the requirements of Appendix C at a minimum. The CMS Work Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit deleted from the CMS Work Plan. Such deletion of a unit is subject to the approval of the Regional Administrator. The CMS shall be conducted in accordance with the approved CMS Work Plan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject to the approval of the Regional Administrator. The scope of the CMS Work Plan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR §264.101, §264.552, and §270.32(b)(2). The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition II.A.5.

II.G.1.c. The Regional Administrator shall either approve or disapprove, in writing, the CMS Work Plan. If the Regional Administrator disapproves the CMS Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CMS Work Plan's deficiencies and specify a due date for submittal of a revised CMS Work Plan, (2) revise the CMS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Work Plan and notify the Permittee of the conditions. This modified CMS Work Plan becomes the approved CMS Work Plan.

II.G.2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Work Plan, no later than fifteen (15) calendar days after the Permittee has received written approval from the Regional Administrator for the CMS Work Plan. Pursuant to Permit Condition II.G.1.b. the CMS shall be conducted in accordance with the approved CMS Work Plan.

II.G.3. CMS Report

II.G.3.a. The Permittee shall prepare and submit to the Regional Administrator a draft and final CMS Report for the study conducted pursuant to the approved CMS Work Plan and in accordance with Appendix C. The draft CMS Report shall be submitted to the Regional Administrator in accordance with the schedule in the approved CMS Work Plan. The final CMS Report shall be submitted to the Regional Administrator within thirty (30) days of receipt of the Regional Administrator's final comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. If a remedial alternative requires the use of a CAMU, the CMS report shall include all information necessary to establish and implement the CAMU. The CMS Report shall present all information gathered under the approved CMS Work Plan. The CMS Final Report must contain adequate information to support the Regional Administrator's decision on the recommended remedy, described under Permit Condition II.H.

II.G.3.b. If the Regional Administrator determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition II.G.3.a., the Regional Administrator may disapprove the CMS Final Report. If the Regional Administrator disapproves the CMS Final Report, the Regional Administrator shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date for submittal of a revised CMS Final Report. The Regional Administrator will notify the Permittee of any no further action decision.

II.G.3.c. As specified under Permit Condition II.G.3.b., based on preliminary results and the CMS Final Report, the Regional Administrator may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

II.H. REMEDY APPROVAL AND PERMIT MODIFICATION

II.H.1. A remedy shall be selected from the remedial alternatives evaluated in the CMS. It will be based at a minimum on protection of human health and the environment, as per specific site conditions and existing regulations. The selected remedy may include any interim measures implemented to date.

II.H.2. Pursuant to 40 CFR §270.41, a permit modification will be initiated by the Regional Administrator after recommendation of a remedy under Condition II.H.1. This modification will serve to incorporate a final remedy, including a CAMU if necessary, into this permit.

II.H.3. Within one hundred and twenty (120) calendar days after this Permit has been modified for remedy selection, the Permittee shall demonstrate financial assurance for completing the approved remedy.

II.I. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

II.I.1. If at any time the Regional Administrator determines that modification of the Corrective Action Schedule of Compliance is necessary, the Regional Administrator may initiate a modification to the Schedule of Compliance (Appendix D).

II.I.2. Modifications that are initiated and finalized by the Regional Administrator will be in accordance with the applicable provisions of 40 CFR Part 270. The Permittee may also request a permit modification in accordance with 40 CFR Part 270 to change the Schedule of Compliance.

II.J. WORK PLAN AND REPORT REQUIREMENTS

II.J.1. All work plans and schedules shall be subject to approval by the Regional Administrator prior to implementation to assure that such work plans and schedules are consistent with the requirements of this Permit and with applicable regulations. The Permittee shall revise all submittals and schedules as specified by the Regional Administrator. Upon approval the Permittee shall implement all work plans and schedules as written.

II.J.2. All work plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Regional Administrator based on the Permittee's demonstration that sufficient justification for the extension exists.

II.J.3. If the Permittee at any time determines that the SAR information required under Condition II.B., the CS Work Plan under Condition II.D., or RFI Work Plan(s) required under Condition II.E. no longer satisfy the requirements of 40 CFR §264.101 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended Work Plan(s) to the Regional Administrator within ninety (90) calendar days of such determination.

II.J.4. At least two (2) copies of all reports and work plans shall be provided by the Permittee to the Regional Administrator in care of the RCRA Branch Chief at the following address:

Chief, RCRA Programs Branch
Waste Management Division
U.S. Environmental Protection Agency
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

II.K. APPROVAL/DISAPPROVAL OF SUBMITTALS

II.K.1. The Regional Administrator will review the work plans, reports, schedules, and other documents ("submittals") which require the Regional Administrator's approval in accordance with the conditions of this permit. The Regional Administrator will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. Condition II.L. shall apply only to submittals that have been disapproved and revised by the Regional Administrator, or that have been disapproved by the Regional Administrator, then revised and resubmitted by the Permittee, and again disapproved by the Regional Administrator.

II.L. DISPUTE RESOLUTION

Notwithstanding any other provision in this permit, in the event the Permittee disagrees, in whole or in part, with the Regional Administrator's revision of a submittal or disapproval of any revised submittal required by the permit, the following may, at the Permittee's discretion, apply:

II.L.1.a. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Regional Administrator in writing within thirty (30) days of receipt of the Regional Administrator's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth the specific matters in dispute, the position the Permittee asserts should be adopted as consistent with the requirements of the permit, the basis for the Permittee's position, and any matters considered necessary for the Regional Administrator's determination.

II.L.1.b. The Regional Administrator and the Permittee shall have an additional thirty (30) days from EPA's receipt of the notification provided for in Condition II.L.1.a. to meet or confer to resolve any disagreement.

II.L.1.c. In the event agreement is reached, the Permittee shall comply with the terms of such agreement or if appropriate submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.

II.L.1.d. If agreement is not reached within the thirty (30) day period, the Regional Administrator will notify the Permittee in writing of his/her decision on the dispute, and the Permittee shall comply with the terms and conditions of the Regional Administrator's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Waste Management Division Director.

II.L.1.e. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the Regional Administrator determines are not affected by the dispute.

PART III - LAND DISPOSAL RESTRICTIONS

III.A. GENERAL RESTRICTIONS

III.A.1. 40 CFR Part 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR Part 268. Where the Permittee has applied for an extension, waiver or variance under 40 CFR Part 268, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

III.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

III.B.1. A restricted waste identified in 40 CFR Part 268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D are met.

III.B.2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 is prohibited unless the requirements of 40 CFR Part 268 Subpart E are met.

PART IV- ORGANIC AIR EMISSIONS REQUIREMENTS

IV.A. GENERAL INTRODUCTION

On December 6, 1994, EPA published the final rule for Phase II Organic Air Emissions Standards (40 CFR Parts 264 and 265, Subpart CC) for hazardous waste treatment, storage, and disposal facilities, including certain hazardous waste generators accumulating waste on-site in RCRA permit-exempt (90-day) tanks and containers. Major clarifications to the rule were published on February 9, 1996, November 25, 1996, and December 8, 1997. In general, under these standards air emissions controls must be used for tanks, surface impoundments, containers and miscellaneous units which contact hazardous waste containing an average organic concentration greater than 500 ppmw at the point of origination determined by the procedures outlined in 40 CFR § 264.1083(a), except as specifically exempted under 40 CFR § 264.1080 and § 264.1082.

IV.B. ORGANIC AIR EMISSION STANDARDS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to 40 CFR Part 264, Subpart CC, or modifying an existing process, waste handling or tank or container such that the unit(s) will become subject to 40 CFR Part 264 Subpart CC, the Permittee shall apply for a permit modification under § 270.42, and provide specific Part B application information required under 40 CFR §§ 270.14-17 and § 270.27, as applicable, with the modification request.

APPENDIX A

SOLID WASTE MANAGEMENT UNIT SUMMARY

A.1. List of solid waste management units (SWMUs) and areas of concern (AOCs) requiring a RCRA Facility Investigation (RFI):

SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment	Dates of Operation
CENTRAL PROCESS AREA			
1	Oil/Water Separator	Manages No. 2 diesel fuel, pentachlorophenol and oil. RFI Report Under Review.	Approximately. 1975 to Present
4	Boiler	Manages creosote byproducts, pentachlorophenol byproducts, impacted soils, bottom sediments and unreclaimed oil. RFI Report Under Review.	Approximately 1975 to Present
9	Chemical Unloading Area	Manages creosote, No. 2 diesel fuel. RFI Report Under Review.	Approximately 1975 to Present
10	Underground Storage Tank	Unknown, possibile creosote, pentachlorophenol, oil and wood debris. RFI Report Under Review.	Approximately 1970 to Present
MISCELLANEOUS UNITS			
6	Process Cooling Reservoir	Manages cooling water. RFI Report Under Review.	Approximately 1970 to Present
7	Container Storage Area	Manages creosote, pentachlorophenol, bottom sediments, impacted soils, and unreclaimed oil. RFI Report Under Review.	1980 to Present
8	Drip Track Area	Manages creosote, No. 2 diesel fuel, pentachlorophenol and oil. RFI Report Under Review.	1979 to Present

SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment	Dates of Operation
11[1]	Former Wastewater Lagoons	Managed creosote, No. 2 diesel fuel, pentachlorophenol, oil and wood debris. RFI Report Under Review.	Approximately 1970 to approximately 1980
12	North Waste Piles	Managed construction debris, treated and untreated scrap wood, railroad tires, other inert materials. RFI Report Under Review.	Unknown
13	South Wastes Piles	Managed untreated wood, empty railroad spike drums. RFI Report Under Review.	Unknown. Removal action performed prior to 1989
14[2]	Temporary Storage of Contaminated Soils	Managed excavated soil generated during upgrade of the tank process area. Removal Documentation Report Under Review.	October 1988 to May 1989. Removal action undertaken in 1996.
15[2]	Two Soil Containment Structures	Managed excavated soil generated during upgrade of the drip track area. Removal Documentation Report Under Review.	December 1990 to February 1991. Removal action undertaken in 1996.
16	Old Oil/Water Separator	Manages No. 2 diesel fuel, pentachlorophenol and oil. RFI Report Under Review.	1904 to 1988
17	Old South Drip Pad/Track	Managed drippage from newly treated ties/poles/etc. RFI Report Under Review.	1904 to 1994

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1 Interim Measures is required for this SWMU (see Condition II.F.1). These measures include containment actions to control the further discharge of dense nonaqueous phase liquids (DNAPL) into the Central Creek and some contaminated sediment removal from the Central Creek.

2 Inclusion of these SWMUs in this Appendix is necessary because of the Interim Measures which took place in 1996. The Removal Documentation Report for these SWMUs must be reviewed before a no further action decision can be made (see Condition II.F.1) .

A.2. List of solid waste management units (SWMUs) and areas of concern (AOCs) requiring no further action at this time:			
SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment and Basis for NFA	Dates of Operation
2[3]	Surface Impoundment	Managed creosote, No. 2 diesel fuel, pentachlorophenol and oil	Approximately 1975 to mid-1988
3[4]	Spray Irrigation Field	Managed creosote, No. 2 diesel fuel, pentachlorophenol and oil.	Approximately 1975 to mid-1988
5[5]	Boiler Ash Landfill	Managed K001 bottom sediments, boiler ash	Approximately 1975 to 1993

3 RCRA Regulated Unit covered under the Post-Closure Permit issued by the Mississippi Department of Environmental Quality

4 RCRA Regulated Unit covered under a Closure Plan by the State of Mississippi.

5 RCRA Regulated Unit covered under a Consent Order issued by the State of Mississippi.

A.3. **List of solid waste management units (SWMUs) and areas of concern (AOCs) requiring Confirmatory Sampling:**				
SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment	Dates of Operation	Potentially Affected Media
There are no units identified at this time as requiring Confirmatory Sampling (CS).				

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) OUTLINE

The purpose of the RFI portion of the RCRA corrective action process is to evaluate the nature and extent of the releases of hazardous wastes and/or hazardous constituents and to gather necessary data to support the Corrective Measures Study (CMS) and/or Interim Measures. Planning for the investigation is best accomplished through a logical progression of tasks:

1. gather information on the source of the release(s) to the environment (Source Characterization),
2. gather information on the physical aspects of the environment which will affect the migration and fate of the release and identification of exposure pathways for both humans and non-human members of the environment (Environmental Setting),
3. use Source Characterization and Environmental Setting to develop a conceptual model of the release which will be used to plan and conduct a program to define the nature, rate and extent of the release (Sampling and Analysis Plan).

An RFI Work Plan and RFI Report are generally required elements of the RCRA corrective action process. The requirements for a full, detailed RFI are listed in this Appendix. EPA recognizes that each facility is unique. Therefore, the scope and requirements of the RFI shall be focused to fit the complexity of the site-specific situation. The work plan requirements listed in this Appendix in no way limit the site-specific opportunities for a Permittee. For example, the RFI may be implemented in phases. Relevant information contained in previously developed documents, such as a RCRA Part B permit application, may be referenced as appropriate, but must be summarized in either the RFI Work Plan or the RFI Report. In addition, EPA understands that Risk Assessments are becoming more widely utilized to place characterization information into context and to aid in determining remedial solutions. If a Risk Assessment is expected to be performed in the future, note that Region 4 has developed a series of Risk Bulletins to provide Permittees and their contractors with the general format and process Region 4 expects a Risk Assessment to follow.

In some cases, it may be possible to implement the RFI concurrent with the CMS (also see Appendix C). This approach can save time and money because the earlier in the corrective action process potential remedies can be identified, the more effectively information gathering can be focused. The Agency anticipates that a concurrent RFI/CMS approach may be appropriate in the following types of situations, among others: facilities where removal remedies have been proposed by the owner/operator, facilities with straightforward remedial solutions or where presumptive remedies can be applied, facilities where few remedial options are available, and facilities where the remedy is phased. The Agency will determine on a case-by-case basis if a combined RFI/CMS is appropriate. Because of the unique data collection requirements necessary for a remedial solution which includes natural attenuation of contaminants in groundwater, if natural attenuation is expected to be part of the remedial solution, then the Sampling and Analysis Plan should be crafted to include monitoring of specific water quality parameters unique to natural attenuation (e.g., nitrites/nitrates, ferrous iron, sulfides, dissolved oxygen, methane, hydrogen, etc.).

I. RFI WORK PLAN REQUIREMENTS - ELEMENTS OF THE RFI WORK PLAN

The RFI Work Plan shall include, at a minimum, the following elements:

A. Introduction - Summary of any relevant existing assessment data

The Permittee shall describe the purpose or objective of the RFI Work Plan and provide a summary of any existing environmental data which is relevant to the investigation. The summary should provide the following items, at a minimum:

1. land ownership history,
2. facility operating dates,
3. facility's product(s),
4. raw materials used in facility operations, wastes generated,

5. nature and extent of any known contamination,
6. summary of an ongoing Interim Measures and past assessments,
7. summary of permit objective and how this objective will be satisfied.

B. Environmental Setting

The Permittee shall provide information on the environmental setting at the facility. The Permittee shall characterize the Environmental Setting as it relates to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units (SWMUs) and/or Areas of Concern (AOCs). Data gaps pertinent to characterization of releases shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. The Environmental Setting shall cover the following items, at a minimum:

1. <u>Hydrogeology</u>

The Permittee shall provide a summary of the hydrogeologic conditions at the facility. This discussion shall include, but not be limited to, the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:

I) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, metamorphic foliation, etc.);
iii) Depositional history;
iv) Regional and facility specific ground-water flow patterns (porous media, fracture media, karst media); and
v) Identification and characterization of areas and amounts of recharge and discharge (springs in karst terrane, base level streams and rivers).

b. An analysis of any topographic features that might influence the ground-water flow system (e.g., sinkholes and sinking streams in karst terranes).

c. Based on any existing field data, tests (e.g., pump tests, tracer tests), and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (I. e., the aquifers and any intervening saturated and unsaturated units), including:

I) Hydraulic conductivity and porosity (total and effective), groundwater flow velocity, groundwater basin discharge;
ii) Lithology, grain size, sorting, degree of cementation;
iii) An interpretation of hydraulic interconnections between saturated zones (i.e., aquifers) and surface waters; and
iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on data obtained from groundwater monitoring wells and piezometers installed upgradient, water wells and/or springs downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

I) Water-level contour and/or potentiometric maps, including seasonal variations;
ii) Hydrologic cross sections showing vertical gradients;
iii) The flow system, including the vertical and horizontal components of flow; and

iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences and for karst terrane, stormflow.

e. A description of man-made influences that may affect the hydrology of the site, identifying:

i) Local water-supply and production wells with an approximate schedule of pumping; and
ii) Man-made hydraulic structures (pipelines, french drains, ditches, roofs, runways, parking lots, etc.).

2. Soils

The Permittee shall provide an explanation of the soil and rock units above the water table in the vicinity of contaminant release(s). This summary may include, but not be limited to, the following types of information as appropriate:

i) Surface soil distribution;
ii) Soil profile, including ASTM classification of soils;
iii) Transects of soil stratigraphy;
iv) Hydraulic conductivity (saturated and unsaturated);
v) Relative permeability;
vi) Bulk density;
vii) Porosity;
viii) Soil sorption capacity;
ix) Cation exchange capacity (CEC);
x) Soil organic content;
xi) Soil pH;
xii) Particle size distribution;
xiii) Depth of water table;
xiv) Moisture content;
xv) Effect of stratification on unsaturated flow;
xvi) Infiltration;
xvii) Evapotranspiration;
xviii) Storage capacity;
xix) Vertical flow rate; and
xx) Mineral content.

3. Surface Water and Sediment

The Permittee shall provide a description of the surface water bodies in the vicinity of the facility. This summary may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
iii) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.
iv) Drainage patterns; and
v) Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:

i) Deposition area;
ii) Thickness profile; and
iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. <u>Air</u>

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. A description of the following parameters:

i) Annual and monthly rainfall averages;
ii) Monthly temperature averages and extremes;
iii) Wind speed and direction;
iv) Relative humidity/dew point;
v) Atmospheric pressure;
vi) Evaporation data;
vii) Development of inversions; and
viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricanes)

b. A description of topographic and man-made features which affect air flow and emission patterns, including:

i) Ridges, hills or mountain areas;
ii) Canyons or valleys;
iii) Surface water bodies (e.g., rivers, lakes, bays, etc.); and
iv) Buildings.

C. Source Characterization

For those sources from which releases of hazardous constituents have been detected, the Permittee shall provide analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e. g., facility security, and engineering barriers). Data gaps on source characterization shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. This summary shall include quantification of the following specific characteristics, at each source area:

1. <u>Unit/Disposal Area Characteristics:</u>

a. Location of unit/disposal area;
b. Type of unit/disposal area;
c. Design features;
d. Operating practices (past and present)
e. Period of operation;

f. Age of unit/disposal area;
g. General physical conditions; and
h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of wastes placed in the unit;

i) Hazardous classification (e. g., flammable, reactive, corrosive, oxidizing or reducing agent);
ii) Quantity; and
iii) Chemical composition.

b. Physical and chemical characteristics such as:

i) Physical form (solid, liquid, gas);
ii) Physical description (e.g., powder, oily sludge);
iii) Temperature;
iv) pH;
v) General chemical class (e.g., acid, base, solvent);
vi) Molecular weight;
vii) Density;
viii) Boiling point;
ix) Viscosity;
x) Solubility in water;
xi) Cohesiveness of the waste; and
xii) Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:

i) Sorption capability;
ii) Biodegradability, bioconcentration, and biotransformation;
iii) Photodegradation rates;
iv) Hydrolysis rates; and
v) Chemical transformations.

D. Potential Receptors

The Permittee shall provide data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Data gaps pertinent to receptor analysis shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. The following characteristics shall be identified at a minimum:

1. Current local uses and planned future uses of groundwater:

a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial);
b. Location of groundwater users, to include withdrawal and discharge wells and springs, within one mile of the impacted area.

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:

   a. Domestic and municipal (e.g., potable and lawn/gardening watering);
   b. Recreational (e.g., swimming, fishing);
   c. Agricultural;
   d. Industrial; and
   e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

   a. Recreation;
   b. Hunting;
   c. Residential;
   d. Commercial; and
   e. Relationship between population locations and prevailing wind direction.

4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within the area adjacent to the facility.

6. A general demographic profile of the people who use have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any known or documented endangered or threatened species near the facility.

E. Sampling and Analysis Plan(s) for Characterization of Releases of Hazardous Waste/Hazardous Constituents

The Permittee shall prepare a plan to document all monitoring procedures necessary to characterize the extent, fate and transport of releases (i.e., identify sampling locations, sampling procedures and sample analysis to be performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented). The sampling strategy and procedures shall be in accordance with EPA Region 4 Environmental Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP) (most recent version). Any deviations from this reference must be requested by the applicant and approved by EPA. If a Risk Assessment is expected to be performed once release characterization is complete or nearly complete, Data Quality Objectives (DQO) for a Human Health Risk Assessment requires a Data Quality Objective of Level 3 or greater.

The Sampling and Analysis Plan must specifically discuss the following unless the SOP procedures are specifically referenced.

1. Sampling Strategy

   a. Selecting appropriate sampling locations, depths, etc.;
   b. Obtaining all necessary ancillary data;
   c. Determining conditions under which sampling should be conducted;
   d. Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, subsurface gas);
   e. Determining which parameters are to be measured and where;
   f. Selecting the frequency of sampling and length of sampling period;
   g. Selecting the types of samples (e.g., composite vs. grab) and number of samples to be collected.

2. Sampling Procedures

a. Documenting field sampling operations and procedures, including;

i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);
ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
iii) Documentation of specific sample preservation method;
iv) Calibration of field instruments;
v) Submission of appropriate blanks (e.g., field, equipment, trip, etc.);
vi) Potential interferences present at the facility;
vii) Construction materials and techniques, associated with monitoring wells and piezometers;
viii) Field equipment listing and sampling containers;
ix) Sampling order; and
x) Decontamination procedures.

b. Selecting appropriate sample containers;

c. Sampling preservation; and

d. Chain-of-custody, including:

i) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.
iii) Chain-of-custody seals for sample containers and shipping coolers.

3. Sample Analysis

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods" (most recent version) or an alternate approved method. The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage (e.g., maximum holding times for constituents);

c. Sample preparation methods;

d. Analytical Procedures, including:

i) Scope and application of the procedure;

ii) Sample matrix;
iii) Potential interferences;
iv) Precision and accuracy of the methodology; and
v) Method Detection Limits; and
vi) Practical Quantitative Limits

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:

i) Method blank(s);
ii) Laboratory control sample(s);
iii) Calibration check sample(s);
iv) Replicate sample(s);
v) Matrix-spiked sample(s);
vi) "Blind" quality control sample(s);
vii) Control charts;
viii) Surrogate samples;
ix) Zero and span gases; and
x) Reagent quality control checks.

h. External quality control checks by EPA, including:

i) Spikes and blanks at sampling events for which EPA or its technical representative provides oversight; and
ii) The equivalent of a CLP data package for samples split with EPA or for which EPA specifically requests the package.

i. Preventive maintenance procedures and schedules;

j. Corrective action (for laboratory problems); and

k. Turnaround time.

F. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. <u>Data Record</u>

The data record shall include the following:

a. Unique sample or field measurement code;
b. Sampling or field measurement location and sample or measurement type;
c. Sampling or field measurement raw data;
d. Laboratory analysis ID number;
e. Property or component measures; and
f. Result of analysis (e.g. concentration, data qualifiers).

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;
b. Results for each medium, or for each constituent monitored;
c. Data reduction for statistical analysis, as appropriate;
d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
e. Summary data

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Display sampling location and sampling grid:
b. Indicate boundaries of sampling area, and area where more data are required;
c. Display geographical extent of contamination, both horizontally and vertically;
d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and
e. Indicate features affecting inter-media transport and show potential receptors.

G. Project Management Plan - Schedule of Implementation

Permittee shall prepare a Project Management Plan which will cover qualifications of personnel categories and the management control structure for the project. The Permittee shall also provide a schedule for completing the planned RFI activities. The schedule shall be as specific as possible (i.e., it should indicate the number of days/weeks/months required for each major work plan task).

II. RFI REPORT REQUIREMENTS - ELEMENTS OF THE RFI REPORT

The RFI Report shall include, at a minimum, the following elements:

A. Introduction

The Permittee shall describe the purpose of the RFI Work Plan and provide a summary description of the project.

B. Environmental Setting

The Permittee shall describe the Environmental Setting in and around the facility. The RFI Work Plan should contain some, if not all, of the information on the Environmental Setting. Any information collected during work plan implementation which clarifies or improves understanding of the Environmental Setting should be provided in this section.

C. Source Characterization

The Permittee shall summarize the sources of contamination and nature of releases identified at the facility. The RCRA Facility Assessment and the RFI Work Plan should contain some, if not all, of the information on Source Characterization. Any information collected during work plan implementation or obtained from the sources (e.g., voluntarily or from other Environmental Programs) which directly addresses Source Characterization should be provided in this section.

D. Sampling and Anaylsis Results

The Permittee shall present data results obtained pursuant to the RFI Work Plan. The Permittee shall identify any work plan proposals which were not completed and explain why such actions were not finished. The Permittee shall also present its analysis/interpretation of how the sampling data meet the RFI objective and how the sampling data fits or modifies the contaminant conceptual model. For all analytical data, the Permittee shall discuss the results of data quality/data review.

E. Data Quality Assurance/Data Quality Data Review

The Permittee shall perform a Quality Assurance/Quality Control data review on all data present in the RFI. The Quality Assurance/Quality Control data review shall be in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA-540/R94-013) and the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA-540/R94-012). The data review shall address the following, at minimum:

a. Holding times;
b. Blanks;
c. Laboratory Control Samples;
d. Field Duplicates;
e. Surrogate Recoveries;
f. Matrix Spike/Matrix Spike Duplicates
g. Data Assessment - Data Usability.

F. Conclusions

The Permittee shall summarize the major conclusions reached after analysis of the environmental setting, source characterization, sampling and analysis results and data quality. Any data gaps, needed to complete characterization of the scope and extent of the releases from SWMUs and/or AOCs or to refine further the contaminant conceptual model, shall be identified and recommendations made in the Recommendations Section of the report.

G. Recommendations

The Permittee shall provide its recommendations on what, if any, further action is needed to complete the characterization of release(s) from SWMUs and/or AOCs.

H. Work Plan for Additional Investigations

If further investigations are determined to be needed to complete the objective of the RFI, then the Permittee shall provide a work plan to complete characterization of the release(s).

APPENDIX C

CORRECTIVE MEASURE STUDY (CMS) OUTLINE

The purpose of the CMS portion of the RCRA corrective action process is to identify and evaluate potential remedial alternatives for the releases of hazardous constituents that have been identified at the facility through the RFI or other investigations to need further evaluation. The scope and requirements of the CMS are balanced with the expeditious initiation of remedies and rapid restoration of contaminated media. The scope and requirements of the CMS should be focused to fit the complexity of the site-specific situation. It is anticipated that Permittee's with sites with complex environmental problems may need to evaluate a number of technologies and corrective measure alternatives. For other facilities, however, the evaluation of a single corrective measure alternative may be adequate. Therefore, a streamlined or focused approach to the CMS may be initiated. Information gathered during any stabilizations or interim measures will be used to augment the CMS and in cases where corrective action goals are met, may be a substitute for the final CMS.

Regardless of whether a streamlined/focused or a detailed CMS is required, a CMS Work Plan and CMS Report are generally required elements. The requirements for a full, detailed CMS are listed below. The Agency has the flexibility not to require sections of the plan and/or report, where site-specific situations indicate that all requirements are not necessary. Additionally, the Agency may require additional studies besides these discussed in order to support the CMS.

I. Corrective Measures Study (CMS) Work Plan

A. Elements of the CMS Work Plan

The Corrective Measures Study (CMS) Work Plan shall include at a minimum the following elements:

1. A brief site-specific description of the overall purpose of the CMS;

2. A brief description of the corrective measure objectives, including proposed target media cleanup standards (e.g., promulgated federal and state standards) and preliminary points of compliance or a description of how a risk assessment will be performed (e.g., guidance documents);

3. A brief description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied;

4. A brief description of the general approach to investigating and evaluating potential corrective measures;

5. A detailed description of any proposed pilot, laboratory and/or bench scale studies;

6. A proposed outline for the CMS Report including a description of how information will be presented;

7. A brief description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, project schedules, budget and personnel. Include a description of qualifications for personnel directing or performing the work;

8. A project schedule that specifies all significant steps in the process and when key documents (*e.g.*, CMS Progress Reports, draft CMS Report) are to be submitted to the Agency;

9. A detailed Public Involvement Plan.

II. Corrective Measures Study (CMS) Report

The detail of a CMS may vary based upon the complexity of the site, on-going Interim Measures, etc. However, the CMS Report may include the following elements:

A. Introduction/Purpose

The Permittee shall describe the purpose of the CMS Report and provide a summary description of the project.

B. Description of Current Situation

The Permittee shall submit a summary and an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measures alternative(s). The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

C. Establishment of Proposed Media Specific Cleanup Standards

The Permittee shall describe the proposed media cleanup standards and point of compliance. The standards must be either background, promulgated federal and state standards or risk-derived standards. If media clean-up standards are not proposed, then the Agency will unilaterally propose setting media clean-up standards to either background, promulgated federal and state standards or the most conservative risk-derived standards.

D. Identification, Screening and Development of Corrective Measure Technologies

1. Identification: List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives. Include a table that summarizes the available technologies.

   The Permittee should consider innovative treatment technologies, especially in situations where there are a limited number of applicable corrective measure technologies.

2. Screening: The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

   Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

   a. Site Characteristics: Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

   b. Waste Characteristics: Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

c. Technology Limitations: During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

3. Corrective Measure Development: The Permittee shall assemble the technologies that pass the screening step into specific alternatives that have the potential to meet the corrective action objectives for each media. Options for addressing less complex sites could be relatively straight-forward and may only require evaluation of a single or limited number of alternatives. Each alternative may consist of an individual technology or a combination used in sequence (i.e., treatment train). Different alternatives may be considered for separate areas of the facility, as appropriate. List and briefly describe each corrective measure alternative.

E. <u>Evaluation of a Final Corrective Measure Alternative</u>

For each remedy which warrants a more detailed evaluation (i.e., those that passed through the screening step), including those situations when only one remedy is being proposed, the Permittee shall provide detailed documentation of how the potential remedy will comply with each of the standards listed below. These standards reflect the major technical components of remedies including cleanup of releases, source control and management of wastes that are generated by remedial activities. The specific standards are as follows:

1. Protect human health and the environment.
2. Attain media cleanup standards set by EPA.
3. Control the source of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment.
4. Comply with applicable standards for management of wastes.
5. Other factors.

In evaluating the selected alternative or alternatives, the Permittee shall prepare and submit information that documents that the specific remedy will meet the standards listed above. The following guidance should be used in completing this evaluation.

1. Protect Human Health and the Environment

Corrective action remedies must be protective of human health and the environment. Remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes. Therefore, the Permittee shall provide a discussion of any short term remedies necessary to meet this standard, as well as discuss how the corrective measures alternative(s) meet this standard.

2. Attain Media Cleanup Standards

Remedies will be required to attain media cleanup standards. As part of the necessary information for satisfying this requirement, the Permittee shall address whether the potential remedy will achieve the remediation objectives. An estimate of the time frame necessary to achieve the goals shall be included. Contingent remedies may be proposed if there is doubt if the initial remedy will be successful (*e.g.*, contingent remedies to innovative technologies).

3. Control of Sources of Releases

The Permittee shall address the issue of whether source control measures are necessary, and if so, the type of actions that would be appropriate. Any source control measure proposed should include a discussion on how well the method is anticipated to work given the particular situation at the facility and the known track record of the specific technology.

4. Comply With any Applicable Standards for Management of Wastes

The Permittee shall include a discussion of how the specific waste management activities will be conducted in compliance with all applicable state and federal regulations (e.g., closure requirements, LDRs)

5. Other Factors

There are five general factors that will be considered as appropriate by EPA in selecting/approving a remedy that meets the four standards listed above. These five decision factors include:

a. Long-term reliability and effectiveness;
b. Reduction in the toxicity, mobility or volume of wastes;
c. Short-term effectiveness;
d. Implementability; and
e. Cost.

Examples of the type of information to include are provided below:

a. Long-term reliability and effectiveness: The Permittee may consider whether the technology, or combination of technologies, have been used effectively under analogous site conditions, whether failure of any one technology in the alternative would have any immediate impact on receptors, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. In addition, each corrective measure alternative should be evaluated in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the level of effectiveness can be maintained.

b. Reduction in the toxicity, mobility or volume of wastes: As a general goal, remedies will be preferred that employ techniques that are capable of eliminating or substantially reducing the potential for the wastes in SWMUs and/or contaminated media at the facility to cause future environmental releases. Estimates of how the corrective measure alternative will reduce toxicity, mobility and or volume of the waste is required and may be accomplished through a comparison of initial site conditions to expected post-corrective measures conditions.

c. Short-term effectiveness: The Permittee shall evaluate each corrective measure alternative for short-term effectiveness. Possible factors to consider are fire, explosion, exposure to hazardous constituents and potential threats associated with the treatment, excavation, transportation and re-disposal or containment of the waste material.

d. Implementability: Information to consider when assessing implementability include:

i) The administrative activities needed to implement the corrective measure alternative (e.g. permits, rights of way, etc.) and the length of time these activities will take;
ii) The constructibility, time for implementation, and time for beneficial results;
iii) The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and

iv) The availability of prospective technologies for each corrective measure alternative.

e. Cost: The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. The capital costs shall include, but are not limited to, costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, etc. The operation and maintenance costs shall include labor, training, sampling and analysis, maintenance materials, utilities, waste disposal and/or treatment, etc. Costs shall be calculated as the net present value of the capital and operation and maintenance costs.

F. Justification and Recommendation of the Corrective Measure or Measures

The Permittee shall justify and recommend in the CMS Report a corrective measure alternative for consideration by the Agency. Such a recommendation should include a description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above. In addition, this recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Regional Administrator will select the corrective measure alternative or alternatives to be implemented based on the results presented in the CMS Report.

G. Preliminary Identification of the Financial Assurance Mechanism

The Permittee shall also tentatively identify the Financial Assuance mechanism to be utilized to eventually satisfy Condition II.H.3.

APPENDIX D

SCHEDULE OF COMPLIANCE SUMMARY

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs *Condition II.B.1. and* *Condition II.B.2.*	Within fifteen (15) calendar days of discovery
SWMU Assessment Report *Condition II.B.3.*	Within ninety (90) calendar days of notification
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs *Condition II.C.1.*	Within fifteen (15) calendar days of discovery
Confirmatory Sampling Work Plan for SWMUs identified under Condition II.B.4. or AOCs identified under Condition II.B.1. *Condition II.D.2.*	Within forty-five (45) calendar days of notification by the Regional Administrator (RA)
Confirmatory Sampling Report *Condition II.D.5.*	In accordance with the approved CS Work Plan
RFI Work Plan for SWMU(s) and AOC(s) Identified under Condition II.B.4., Condition II.C.2., or Condition II.D.5. *Condition II.E.1.b.*	Within ninety (90) calendar days after receipt of notification by Regional Administrator (RA) which SWMUs or AOCs require an RFI
Draft RFI Report *Condition II.E.3.a.*	In accordance with the approved RFI Work Plan
Final RFI Report *Condition II.E.3.c*	Within thirty (30) calendar days after receipt of RA's final comments on Draft RFI Report
RFI Progress Reports *Condition II.E.3.d.*	Quarterly, beginning ninety (90) calendar days from the start date specified by the RA *
Interim Measures for SWMU(s) and AOC(s) identified under Condition II. A.1. *Condition II.F.1.a.*	Dependent on the Interim Measures Stage of the SWMUs and AOCs (see Condition II.F.1.a.)
Interim Measures Work Plan *Condition II.F.1.b.*	Within thirty (30) calendar days of notification by RA
Interim Measures Progress Reports *Condition II.F.3.a.*	In accordance with the approved Interim Measures Work Plan ** or semi-annually for Permittee initiated IM

Schedule of Compliance	Due Date
Interim Measures Report *Condition II.F.3.b.*	Within ninety (90) calendar days of completion
CMS Work Plan *Condition II.G.1.a.*	Within ninety (90) calendar days of notification by RA that a CMS is required
Implementation of CMS Work Plan *Condition II.G.2.*	Within fifteen (15) calendar days after receipt of RA approval of Plan
Draft CMS Report *Condition II.G.3.a.*	In accordance with the schedule in the approved CMS Work Plan
Final CMS Report *Condition II.G.3.a.*	Within thirty (30) calendar days of RA's final comments on Draft CMS Report
Demonstration of Financial Assurance *Condition II.H.3.*	Within one hundred twenty (120) calendar days after permit modification for remedy
Noncompliance/Imminent Hazard Report *Condition I.D.14.*	Oral within 24 hours and written within fifteen (15) calendar days of becoming aware of the hazardous circumstances
Permit Modification for New Units Subject to Subpart CC Air Emission Standards *Condition IV.B.*	According to Permit Modification procedures in Part 270

The above reports must be signed and certified in accordance with 40 CFR §270.11.

* This applies to Work Plan execution that requires more than one hundred eighty (180) calendar days

** This applies to Work Plan execution that requires more than one year.

APPENDIX E

Action Levels

APPENDIX E

ACTION LEVELS

I. Definition

Action levels are conservative health-based concentrations of hazardous constituents determined to be indicators for the protection of human health or the environment. Action levels shall be set for all hazardous constituents, a subset of hazardous wastes, identified in the RFI Report(s) or for those hazardous constituents which the Regional Administrator has reason to believe may have been released from a solid waste management unit (SWMU) or Area of Concern (AOC) at the facility. Should the concentration of a hazardous constituent(s) in an aquifer, surface water, soils, or air exceed its action level for any environmental medium, the Regional Administrator may require the Permittee to conduct a Corrective Measure Study (CMS) to meet the requirements of permit Condition II.G., Appendix C, and 40 CFR §264.101. If the Regional Administrator determines that a constituent(s) released from a SWMU or AOC in quantities below its respective action level(s) may pose a threat to human health or the environment, given site-specific exposure conditions, cumulative effects, ecological concerns, etc., then the Regional Administrator has the authority to require a CMS to meet the requirements of permit Condition II.G., Appendix C, and 40 CFR §264.101.

Action levels shall be concentration levels which satisfy the following criteria:

A. 1. Is derived in a manner consistent with EPA guidelines for assessing human and environmental health risks from hazardous constituents; and

2. Is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act (TSCA) Good Laboratory Practice Standards, or equivalent; and

3. For human health action levels to address carcinogens, represents a concentration associated with an excess upper bound lifetime cancer risk of 1×10^{-6} for carcinogens due to continuous constant lifetime exposure; and

4. For human health action levels to address systemic toxicants, represents a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime.

B. For constituent(s) detected in groundwater, air, surface water, or soils, for which a concentration level that meets the criteria specified in section I.A.1 through I.A.4 of this appendix is not available or possible, the action level for the constituent(s) shall be the background concentration of the constituent(s).

II. Groundwater

A. Action levels for constituents in groundwater shall be concentrations specified as:

1. MCLs; or

2. For constituents for which MCLs have not been promulgated, a concentration which satisfies the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

B. In deriving human health action levels for constituents for which MCLs have not been promulgated, the recommended equations/assumptions shall be that followed by Region 3 in its Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

III. Surface Water

A. Action levels for constituents in surface water shall be concentrations specified as:

1. Water Quality Standards established pursuant to the Clean Water Act by the State in which the facility is located, where such standards are expressed as numeric values; or

2. Numeric interpretations of State narrative water quality standards where water quality standards expressed as numeric values have not been established by the State; or

3. MCLs for constituents in surface water designated by the State for drinking water supply, where numeric values or numeric interpretations, described in paragraphs 1 and 2, are not available; or

4. For constituents in surface waters designated by the State for drinking water supply for which numeric values, numeric interpretations, or MCLs are not available, a concentration which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated assuming exposure through consumption of the water contaminated with the constituent; or

5. For constituents in surface waters designated for use or uses other than drinking water supply and for which numeric values or numeric interpretations have not been established, a concentration established by the EPA Regional Administrator which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

B. In deriving human health action levels for constituents in surface water, the recommended equations/assumptions shall be that followed by Region 3 in its Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

IV. Air

A. Action levels for constituents in air shall be defined as concentrations which meet the criteria specified in section I.A.1 through I.A.4. The action levels for air shall be measured or estimated at the facility boundary, or another location closer to the unit if necessary to protect human health and the environment.

B. In deriving human health action levels for constituents in air, the RfC should be utilized as the action level, where available. The RfC includes exposure assumptions, and no calculations are necessary to calculate an action level. If a RfC is not available, the recommended methodology/assumptions shall be that followed in the Region 3 Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

V. Soils

A. Action levels for constituents in soils shall be concentrations which meet the criteria specified in section I.A.1 through I.A.4 of this appendix.

B. The calculation of human health action levels for soil includes several specific exposure routes which must be evaluated individually: 1) ingestion, 2) inhalation and 3) leachability to groundwater. In deriving action levels to address ingestion, inhalation and leaching, the methodology/assumptions found in the most recent Soil Screening Level Guidance should be reviewed for appropriate equations and assumptions. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

VI. Sediment

A. Action levels for constituents in sediment shall be based on whether human health or ecological health is the major concern. If ecological concerns are deemed to predominate, then action levels for constituents in sediment shall be concentrations based on the latest sediment screening values as calculated by Region 4. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

If an ecological sediment screening value for a constituent of concern has not been generated by Region 4 and cannot be generated using the criteria in sections I.A.1 and I.A.2, then the ecological action level for sediment shall be background. If human health is the prevailing concern, then the human health action level for sediment shall address all applicable exposures.

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800
Telephone (412) 227-2001
Fax (412) 227-2423

June 9, 1993

via UPS Next Day

David Peacock
Hazardous Waste Division
Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

Jaqualine Jack
U. S. EPA Region 4
RCRA and Federal Facilities Branch
Second Floor
345 Courtland Street
Atlanta, GA 30365

Re: Koppers Industries, Inc. Grenada Plant, Storm Water Pollution Prevention Plan, MSD 007 027 543

Mississippi Hazardous Waste Permit No. 88-543-08 and U. S. EPA HSWA Permit

Dear Mr. Peacock and Ms. Jack:

In accordance with Section I.D.10, Reporting Planned Changes, of the above referenced RCRA Hazardous Waste Permits, Koppers Industries, Inc. (KII) and Beazer East, Inc. (Beazer) are notifying you of intended activities at the KII Grenada Plant that are necessary to comply with new regulations which require industrial facilities to obtain Storm Water NPDES permits and to prepare and implement Storm Water Pollution Prevention Plans (SWPPP). KII has received a Storm Water NPDES General Permit from Mississippi Department of Environmental Quality (DEQ) for the Grenada wood preserving plant at Tie Plant, MS. This permit required KII to prepare and submit to DEQ a SWPPP by April 1, 1993. The permit further requires that KII implement this SWPPP by October 1, 1993. Implementation of the SWPPP will require on-site work including construction of detention ponds and construction and/or regrading of ditches.

Grenada Plant SWPPP Description

The format of the SWPPP requires an analysis of potential sources affecting storm water at the plant and a plan to mitigate migration from the sources. Wood preservative constituents present both in the treated wood products handled on-site and in surface soil could potentially affect storm water. Each plant surface outfall has been evaluated and site modifications, if considered necessary, are recommended for each.

In most cases, modification of existing low areas to act as detention ponds is recommended to enhance the gravity settling of suspended sediment on which most constituents are likely to adhere. Additionally, ditch and road improvements are recommended in some areas to reduce erosion and improve biofiltration.

The Grenada SWPPP was written as a new chapter to the plant's SPCC and Contingency plan. Enclosed for your reference is the SWPPP chapter of this plan. Note the site plan, Figure 2, which shows each outfall and recommended conceptual drainage system modifications.

KII has hired a local consulting civil engineer to provide surveying and design services. The engineer will use the conceptual plan as a basis for the final design. He will prepare a construction plan and contract bid package. KII hopes to complete the design in June, so that construction could begin in July. All work is to be complete by October 1, 1993.

RCRA Facilities and Activities

KII recognizes that some of the construction activities required to implement the SWPPP will involve Solid Waste Management Units (SWMUs) previously identified in the RCRA Facility Investigation (RFI). Additionally, storm water flowing to Outfall 5 flows adjacent to the closed surface impoundment, a RCRA-permitted unit which is in post-closure care.

KII and Beazer believe that the SWPPP can be implemented without jeopardizing the integrity of the permitted (closed) surface impoundment or requiring modification to the post-closure care plan, and without enhancing the potential for releases from SWMUs. This will be accomplished via the following management strategies.

Soil Management

Soil excavation will be minimal. All storm water diversions will utilize existing ditches and/or constructed berms. The berms will be constructed of suitable unstained soil produced during construction of other SWPPP features or of clean soil obtained from off-site. Detention basins will be formed from natural existing low areas by placing new berms of clean imported soil around the lower sides. Since the low areas are already lower than the areas to be drained, excavation will not be required.

No soil excavation will take place within SWMUs. Limited soil excavation will be required for installation of culverts which are outside of process or SWMU areas.

If any soil that is excavated is visibly stained with wood preservative, it will be managed as hazardous waste, F032/F034, and will be disposed off-site in a permitted facility. All clean excavated soil will remain on site to be used in construction of berms or as fill to improve yard drainage.

Debris Management

Debris including concrete, treated and untreated wood, and steel banding is known to exist at the detention basins at Outfalls 2 and 7. The debris at Outfall 7 comprises SWMU No. 12 (North Waste Piles). Where necessary in the construction of the detention basins, the debris will be removed and properly disposed. To the extent that any concrete or other rubble is stained with wood preservative, it will be handled and disposed as F032 and/or F034; treated wood will be handled likewise. Because there are currently no land disposal restrictions for these waste codes, these materials would not be characterized as hazardous debris. However, they may still qualify as hazardous waste, and will be managed accordingly, as a protective measure. All rubble and debris that do not contain wood preservative will be handled and disposed as non-hazardous wastes. Any soil associated with the SWMU's will be handled as described above for soil.

Surface Water Management

The SWPPP design will use only dry detention ponds. Thus, there will only be significant standing water within the ponds for a short time following storms, minimizing the chance for additional groundwater recharge. Generally, this time will be a few days or less. Soil borings indicate that most areas of the plant are underlain by about 5 feet of clayey soil, which will further minimize any recharge potential.

Conclusion

KII is required to implement the SWPPP. Thus, if you have comments or concerns about our planned approach as described in this letter, please call as soon as possible so that your concerns may be addressed in our design. If you like, a meeting can be arranged either at one of your offices or at the Grenada plant to review this project. Please call Stephen Smith at (412)227-2677 if you would like to schedule a meeting or discuss this letter.

Sincerely,

Stephen T. Smith/rhs

Stephen T. Smith
Environmental Program Manager
Koppers Industries, Inc.

Robert S. Markwell

Robert S. Markwell
Program Manager
Beazer East, Inc., Environmental Group

cc: Louis Lavallee, Chief, Industrial Storm Water Section, DEQ
Billie Flaherty, BEI, K-1001
Ron Murphey, KII, Grenada, MS
W. R. Donley, KII, K-1750
R. S. Ohlis, KII, K-1750
J. R. Batchelder, KII, K-1701

CONTINGENCY, SPCC, AND

POLLUTION PREVENTION PLAN

KOPPERS INDUSTRIES, INC.

GRENADA PLANT

TIE PLANT, MS

TABLE OF CONTENTS

5.0 STORM WATER POLLUTION PREVENTION PLAN

5.1 General

This section of the plan describes the pollution prevention procedures and facilities for this plant to minimize the impact of storm water runoff to the surrounding environment. This section specifically addresses the requirements of the Storm Water General NPDES Permit, including special requirements for wood preserving industrial operations.

5.2 Pollution Prevention Objectives and Process

The objectives of the storm water PPP are; 1) to identify potential sources affecting pollution of storm water and 2) describe and implement practices to minimize and control pollutants in storm water discharges and ensure permit compliance. In the preamble to the Federal Register which finalized the EPA storm water general permits, EPA described the permit program as "intended to facilitate a process whereby the operator of the industrial facility thoroughly evaluates potential pollution sources at the site and selects and implements appropriate emasures designed to prevent or control the discharge of pollutants in strom water runoff." That process includes the following:

1) Form a Pollution Prevention Team,
2) Assess sources,
3) Select and implement practices and controls, and
4) Conduct periodic evaluations.

5.3 Pollution Prevention Team

The pollution prevention team is responsible for developing this pollution prevention plan and assisting in its implementation, maintenance, and revision. The team consists of the following:

STORM WATER POLLUTION PREVENTION TEAM

NAME	POSITION	RESPONSIBILITIES
Ron Murphey	Plant Manager	Overall plant compliance
Mark Good	Environmental Supervisor	Plan development and coordination, Routine inspections and enforcement.
Stephen Smith	Corporate Environmental Manager	Plan development and engineering certification, regulatory advise.
Billy Vance	North Pole Yard	Provide operational perspective for source identification and control measures.
Lloyd Sivley	South Yard	Provide operational perspective for source identification and control measures.
Robert Reed	Utility Operator	Responsible for yard maintenance.
Broderick Spencer	Loader Operator	Provide equipment operator perspective in source identification and control measures.
Allan Horton	Peeler Supervisor	Provide pole peeler perspective for source indentification and control measures.

5.4 Description of Potential Sources

This section describes activities, materials, and physical features potentially contributing to pollution.

5.4.1 Plant Drainage

Drainage patterns are shown on the Storm Water Management Plan, Figure 2. Generally, the central portion of the plant, which includes the preserving process area and maintenance shop, drains into the mid plant ditch. The north quarter of the plant, including the pole peeler yard, drains north to the north ditch and the south end of the yard drains south to the south ditch.

Significant plant features are identified on the Storm Water Management Plan, including the preserving process area, maintenance shop, drip pad, fuel tanks, material storage, loading, and unloading areas, and other process operations.

Pollutants most likely to be detected in storm water and likely sources are as follows:

Wood preservatives, including pentachlorophenol and creosote (which includes primarily various polycyclic aromatic hydrocarbons (PAHs)), may be detected in soil and storm water at many locations on the plant. Wood preserving has been conducted on this property since the early 1900s. Preservative may be present due to past waste disposal practices, past wood preserving practices, drippage from treated wood, preservative spills, and rain runoff from treated wood in storage.

Fuel, lubricating, and hydraulic oils are used on plant mobile equipment, trucks, and most fixed manufacturing equipment. Drips, leaks, or spills may contribute oil to storm water runoff.

Boiler and waste water treatment chemicals are used in the process area, but are kept in contained areas and are unlikely to impact storm water.

Other organic matter, generally from wood, may also be present in runoff from piles or stacks of wood poles, ties, or peeler shavings.

5.4.2 Inventory of Exposed Materials

Significant materials stored in exposed locations at the Koppers plant include untreated and treated wood poles and railroad ties, wood waste fuel, and yard waste materials. Typical inventory levels of these materials are:

Untreated RR ties:	160,000 pcs.
Creosote treated ties:	6,000 pcs.
Barky poles:	100 pcs.
Untreated poles:	3,700 pcs.
Penta treated poles:	9,000 pcs.
Creosote treated poles and piling:	3,000 pcs.
Untreated Switch Ties:	16,000 pcs.
Creosote Switch Ties:	4,000 pcs.
Untreated Lumber:	3,000 pcs.
Creosote Lumber:	3,000 pcs.
Yard waste:	5 bins
Peeler Shavings:	8 tons

All treated and untreated wood is stored in piles in the yard. Contact with rain is not controlled. Current practices to minimize impacts include:

Preservative cycles are designed to minimize drippage and produce clean surfaces on the treated product. These include extended vacuums, cleaning as needed, and proper preservative temperatures. Treated wood is kept on the concrete drip track until any drippage has ceased.

Yard inspections are conducted daily, except when not treating, to detect and respond to preservative drippage, in accordance with Operating Procedures.

Treated wood is stacked on skids to prevent it from sitting in puddled surface water.

Preservative storage and process tanks and equipment are all located within containment facilities as described in Section 3 of this plan.

5.4.3 Significant Spills and Leaks

Within the last three years there have not been any significant spills or leaks which resulted in any remaining site contamination. A few spill incidents have occured in this time, generally consisting of small incidents. Appenix A includes copies of all spill reports for spills occuring during or after 1989. These reports include a description of actions taken to prevent similar events.

5.4.4 Non-Storm Water Discharges

All process water is collected and pretreated on-site prior to discharge to the POTW. Process water includes wood water from boultonizing, preserving process condensate, vacuum seal water, rain and wash water collected within process containments, boiler and cooling tower blowdown, and vehicle and equipment wash water from the shop. Surface drainages have been inspected by members of the Team for flow during dry weather and no dry weather flows were occuring. Certification is provided in Appendix C by use of a completed Non-Storm Water Discharge Evaluation and Certification, Mississippi Worksheet 2C.

5.4.5 Sampling Data

There is no storm water sampling data at this time. Sample results will be maintained at the plant in a Storm Water Monitoring Results file.

5.5 Measures and Controls

5.5.1 Good Housekeeping

The need and reasons for good housekeeping will be communicated and emphasized to each employee and contractor working on the plant. Housekeeping practices will be part of each persons job, with emphasis on preventing contamination over cleaning contamination after it has occurred. Each supervisor is responsible for assuring that housekeeping is completed as part of each person's job.

Good housekeeping practices, including but not limited to the following, will be required at Koppers Industries:

* When cutting treated wood, collect sawdust and cutoff pieces. Do not leave waste on the ground.
* Do not drive loaders or trucks through ditches or standing water. Stay

on established roadways.

* Mobile equipment will not be operated with significant oil or hydraulic leaks. If major leaks develop, such as a hydraulic line breaking, equipment will be shut off in place and repairs made before returning equipment to service.
* Drippage or leakage from equipment will be thoroughly cleaned, with contaminated soil being properly disposed.
* Stationary hydraulic equipment will be maintained to minimize leaks and leakage will routinely be cleaned and properly disposed.
* Waste developed during work will be placed in proper containers for disposal directly rather than placing on the ground to be collected later.
* Recycle scrap metal as generated and do not accumulate it on the ground.

5.5.2 Preventive Maintenance

Storm water management devices, such as detention basins and outlet structures, will be inspected at least monthly and after storms producing significant runoff. These will be inspected for signs of erosion, excess collected silt from runoff, and collection of debris which could interfere with discharge monitoring or flow. Records of inspections will be kept in the plant's operating records. See appendix B for inspection form.

On-site drainages will be inspected for signs of erosion or high silt loads or turbidity during runoff events. Such inspections will be made at least four times a year, depending on storm events. Sources of turbidity or silt will be identified and potential remedial actions identified. Corrective actions which should be considered include; rerouting of plant traffic, paving or gravel surfacing roads, ditch modifications, culvert additions or changes, changing yard activity or material storage locations, changing vegetation management, and yard grading. Inspections and actions taken will be documented on the Storm Water Management Facilities Inspection Record, shown in Appendix B.

Production equipment, including loaders, trucks, and fixed equipment, will be inspected weekly by the people operating the equipment. Inspections will include checks for oil or hydraulic leaks, accumulations of oil soaked dirt, pump, valve, and cylinder packings, and any other devises which could cause or contribute to leaks. Identified needs will be either repaired by the operator or will be identified to the maintenance department.

Maintenance needs identified by inspections will be accomplished on a schedule appropriate for each situation. Leaking mobile equipment will not be operated on the yard until the leaks are repaired.

5.5.3 Spill Prevention and Response

Spill prevention procedures and equipment are fully described in section 3 of this plan. Procedures for responses to spills or other emergencies are described in section 4 of this plan.

5.5.4 Inspections

This section will describe inspection procedures for storm water pollution prevention. In addition, there are also inspection requirements which also further support pollution prevention under various other programs, including:

* Process area tank and containment inspections required by the SPCC provisions of this plan,
* Hazardous waste facility inspections required by RCRA,
* Drip pad inspections required by RCRA and the drip pad operating procedures, and
* Storage yard inspections of treated inventory required by RCRA and the storage yard contingency plan.

Storm water pollution prevention devices, such as detention basins and outlet structures will be inspected quarterly and after storms producing significant runoff. Upgradient ditches and drainage systems will be inspected at least four times a year during runoff events. These inspections will be performed by the Environmental Supervisor. In his absence, another member of the Team will conduct the inspections. Other Team members will participate as appropriate. A Storm Water Pollution Prevention Inspection Form will be used to document each inspection. Maintenance or repair needs will be identified on the form. The form will also be used to document when and how identified needs are corrected. A blank form is included in this plan in Appendix B. Completed inspection forms will be maintained at the plant per Section 5.5.5 of this plan.

5.5.5 Record Keeping and Internal Reporting Procedures

Record keeping and reporting procedures for spills are described in section 4 of this plan.

All completed Storm Water Pollution Prevention Inspection Forms will be maintained by the Environmental Supervisor. He will also be responsible for tracking maintenance or repair work to assure that needed work is completed and documented.

Maintenance and repair needs identified by inspections and which cannot be corrected by the inspector will, at a minimum, be reported to the Plant Manager and function Supervisor, as appropriate. Where priorities need to be determined, evaluation by the Pollution Prevention Team may be involved. The Plant Manager is responsible for setting work priorities and schedules.

5.5.6 Sediment and Erosion Control

The plant site is generally flat to slightly rolling. Soil does not tend to erode, except where vehicle traffic keeps the surface loose and prevents vegetation. Erosion is a problem where storm water runs or puddles in areas of active traffic. This section describes **prevention** type procedures for sediment and erotion control.

Erosion prevention mainly involves the design and maintenance of plant roads, drainages, and storage areas and procedures to assure these are properly used. Main roads, drainages, and storage areas are identified on the Storm Water Management Plan. Planned improvements to road and drainage areas now known to be causing erosion are identified on the Plan. Additional improvements will be made as necessary based on future inspections.

Existing drainage system - The existing yard drainage design has been reviewed by the plant pollution prevention team. The plant has the equipment and manpower to do most of the drainage work required, but may need some engineering or surveying support. The goal is to not create mud. Designs will separate ditches from traffic. Culverts will be added where needed. Gentle side slopes, such as three horizontal to one vertical, will be used so that grass can grow and be mowed. This means that a two foot deep ditch requires 12 feet of total width.

5.5.7 Management of Runoff

The plant drainage system has been designed to maximize its potential to mitigate or improve the quality of storm water runoff. Mitigation involves equipment and procedures to minimize the off-site affect of erosion and other activities occuring on-site. These generally include use of grassy swales or drainages to help filter sediment from runoff water and detention basins to enhanse gravity settling and filtration by plants to remove sediment from the runoff water.

Planned sediment and erosion control mitigation measures are described below for each discharge point and are shown on the Storm Water Management Plan.

Discharge 1 - This discharge to the south flows under a road through a culvert. The sampling point will be at the culvert inlet. There is no sign of erosion or silt deposition in this drainage. Thus, no work is recommended. Inspection results will be used to evaluate any need for future improvements.

Discharge 2 - This includes runoff from approximately the north half of the south yard. The plan includes the installation of culverts under tracks to consolidate three discharge points to one. Construction of berms or low dams just south of the existing ditch will create detention basins. An outlet structure at the east side will provide for slow discharge of accumulated runoff and allow overflow during large storms. The detention provision will allow for settling of sediment, which will improve water quality. If costs of installing culverts under the tracks is prohibitive, three separate discharges should be considered.

Discharge 3 - Storm water catch basins around the shop area now drain via culverts to a ditch which discharges as shown. There are two short pieces of culvert that this water flows through before flowing into the mid-plant ditch. Effluent should be sampled at the inlet to the second culvert. A new small ditch should be constructed from southeast of the shop to approximately the outlet of the collection culvert near the transformer pad, as shown. This will assure that all runoff from the shop area is monitored. Excavation in the lower areas at the existing ditch should be minimized in this area.

Discharge 4 - This discharge includes runoff from much of the wood preserving process area and could, in case of a spill, contain spilled preservative chemicals. The existing emergency spill pond will be expanded to be a detention basin by construction of a berm south of the cooling pond and north of the mid-plant ditch as shown. A new outlet structure will be installed in the berm. A culvert will need to be installed across the main plant entrance to intercept runoff from the southwest part of the north yard, as shown. This culvert will discharge into the existing ditch, just west of the cooling water pond.

Discharge 5 - A berm will be constructed along the east property boundary as shown to form a detention basin. This area is now quite flat and lower than the plant areas draining into it so that local ponding occurs following rains.

Plant areas draining to this discharge include some of the most intense traffic in the yard, including truck loading and unloading, kiln loading and unloading, and treated pole storage. Eroded soil from the plant has been deposited in the area of the planned basin. Additionally, storm water from the housing to the east also drains into this area. The berm should be constructed, probably of imported soil, to separate water from the plant from water from off plant areas and provide detention of the plant runoff water. An outlet structure will be installed.

Discharge 6 - A relatively small part of the north yard drains to this ditch, but erosion of plant soils along the road and pole bins is evident. Construction of a small detention basin with an outlet structure will provide for some sediment removal.

Discharge 7 - Runoff from most of the north half of the north yard runs into the north ditch, but via several discharge points. Construction of a detention basin and intercept ditches will combine these into one discharge point and provide for sediment removal. The pole peeler yard is included in this drainage and could be a source of considerable floating debris from heavy runoff. Filter fences may need to be installed to intercept this material.

Detention basins should be designed to hold at least an average storm event, which is about one inch rainfall, and preferably be able to contain runoff from a two inch rainfall, recognizing that the runoff coefficient is probably about .3 to .5. This will allow for total containment of most storms to maximize water quality benefit at minimum cost and also mean that only a grab sample from the basins would be required, rather than collecting and testing both first flush and composite samples.

Outlet structures - Outlet structures must meet several needs, including; provide for flow monitoring, provide a location for sampling, retain water for most storm events, allow slow release of water over one to several days, pass large storm flows as overflow without damage to structure or dams, allow for flow shutoff in case of a spill within the plant, and be easy to maintain.

Wet detention versus dry detention - Wet detention basins, in which at least a portion of the basin is a permanent pond, provide more potential for biological treatment and generally longer hydraulic holding time for the water than dry detention basins, which completely drain following storm events. However, wet basins also present special problems. The permanent ponds can present safety or liability problems, mosquito breeding can be a nuisance, maintenance is more difficult, the long term ponding of potentially contaminated water can pose groundwater questions, and initial cost is greater. The dry detention basins require less excavation, thus less cost, and, since they are actually dry most of the time, present much less hazard. Additionally, a dry basin can later be made into a wet basin by digging part of it deeper. Thus, dry detention basins will be installed. If monitoring results indicate a need for water quality improvement which could be achieved by a wet pond, then modifications will be implemented as needed.

All new construction will be seeded and mulched to establish a native mix of annual and perennial plants to control erosion and provide filtration.

5.6 Comprehensive Site Compliance Evaluations

Comprehensive site compliance evaluations (Evaluations) are required by the General Permit and are intended as self-audits of the plant storm water pollution prevention program. The Evaluations will be conducted to:

1) Confirm the accuracy of descriptions of sources contained in the PPP,
2) Determine if all storm water pollution prevention measures are accuratedly identified in the plan, in place, and working properly, and
3) Assess compliance with the storm water NPDES permit.

Evaluations will be made at least annually. The plant manager is the individual responsible for the evaluations and will sign each evaluation. Other members of the team may be involved in the evaluation, as requested by the plant manager. Each Evaluation must be documented. Documentation should include the date of the Evaluation, names of persons involved, a listing of areas inspected, major observations, deficiencies noted, and the signature of the plant manager. Documentation will consist of the Mississippi Part VII evaluation form and will be kept in the plant operating records. The storm water pollution prevention plan will be revised within two weeks after the Evaluation inspection and those revisions must be implemented in a timely manner and not later than 12 weeks after the inspection.

5.7 Special Requirements for EPCRA Section 313 Facilities

There are special requirements for facilities which store, process, or otherwise handle Section 313 listed chemicals. This plant uses pentachlorophenol and creosote, which are such chemicals and reports releases of these annually on the Form R reports. These materials are stored in tanks and used in the process area where full secondary containment is provided. Thus, all storm water which could come in contact with the chemicals is contained. All liquids, including storm water, from the containment areas is processed in the waste water treatment system and discharged to the POTW. No water from process or tank secondary containment is discharged with storm water runoff.

The procedures and equipment, as described in Section 3 of this plan and relating to Section 313 chemicals, assure that the standards of good engineering practice are met.

5.8 Monitoring and Reporting Requirements

Monitoring of storm water runoff is required by the General Permit for specified parameters and results of monitoring are to be reported to the State in accordance with that permit. These requirements are summarized in this section.

5.8.1 Parameters and Sample Types

Operations contributing to each outfall are substantially the same, ie. wood preservation, so each outfall must be monitored for the same constituents. The following parameters are to be measured in the units noted:

Parameter	Units	Sample Types
pH		Grab
Total Suspended Solids (TSS)	mg/l	Grab + Composite
Oil and Grease	mg/l	Grab
Total Phenols	mg/l	Grab + Composite
Pentachlorophenol	mg/l	Grab + Composite

In addition, the following will be determined and reported:
* The date and duration (in hours) of the storm(s) sampled;
* Rainfall measurements or estimates (in inches) of the storm which generated the sampled runoff;
* The druation between the storm sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm; and
* An estimate of the total discharge (gallons) for the storm sampled.

5.8.2 Frequency of Monitoring

Sampling will be conducted at least one time per year, except as exempted in the permit for concentrations below indicated values or for substantially identical discharges.

5.8.3 Outfall Information Summary

OUT-FALL NO.	LOCATION	INDUSTRIAL OPERATIONS IN RUNOFF AREA	AREA AND RUNOFF COEF.	SAMPLING METHODS
1	South end of south yard	Treated and untreated wood storage, closed ash landfill	15.9 Acres C= 0.3	report outfall 2 data
2	North end of south yard	Treated and untreated wood storage, switch tie mill	25.2 Acres C= 0.3	composite grab from detention pond
3	Maintenance shop area	Vehicle and equipment maintenance, washing	2.8 Acres C= 0.5	30 min. grab + composite from ditch
4	Southwest 1/4 of north yard	Treated and untreated wood storage, hazardous waste storage, boiler, wood treating process, preservative tanks, cooling water pond	24.1 Acres C= 0.3	composite grab from detention pond
5	Southeast 1/4 of north yard	Treated and untreated wood storage, dry kiln, truck loading, closed surface impoundment	26.2 Acres C= 0.3	composite grab from detention pond
6	Northeast 1/4 of north yard	Treated and untreated wood storage	9.5 Acres C= 0.3	report outfall 5 data
7	Northwest 1/4 of north yard	Treated and untreated wood storage, pole peeler, bark storage	13.2 Acres C= 0.3	composite grab from detention pond

5.8.4 Criteria for Sampling

A) For discharges from detention ponds with a retention period greater than 24 hours, (estimated by dividing the volume of the detention pond by the estimated volume of water discharged during the 24 hours previous to the time that the sample is collected) one composite grab sample will be taken.

B) For all other discharges, both a grab sample and a composite sample will be taken.

All such samples shall be collected from the dischage resulting from a storm event that is greater than 0.1 inch in magnitude and that occurs at least 72 hours from the previously measureable (greater than 0.1 inch rainfall) storm event. The grab sample will be taken during the first 30 minutes of the discharge. The composite sample will be either flow-weighted or time-weighted in accordance with the General Permit.

5.8.5 Substantially Identical Outfalls

Discharge from outfall 1 is substantially identical to discharge from outfall 2. Yard activities which could impact storm water runoff and soil conditions are similar. Additionally, there are no activities in area 1 that would make it's discharge be more impacted than are occuring in area 2. Both areas contain some treated wood, but mostly untreated wood and both areas have similar levels of vehicle traffic.

Discharge from outfall 6 is substantially identical to discharge from outfall 5. Yard activities in area 6 are the same as in 5, including storage and handling of treated wood, loading of trucks, intensity of vehicle traffic, and soil type. Additionally, both areas discharge through detention ponds.

Discharge sampling is not required for outfall 1 or 6, provided that effluent levels determined for outfalls 2 and 5, respectively, are reported for these outfalls.

5.8.6 Reporting

Annual Comprehensive Site Compliance Evaluation inspection reports and annual Discharge Monitoring Reports will be submitted to the following location and must be postmarked no later than January 28 for the previous report year.

Chief, Industrial Wastewater Branch
Office of Pollution Control, Dept. of Environmental Quality
P. O. Box 10385
Jackson, Mississippi 39289-0385

5.9 Compliance Schedule

Activity Description	Complete by
Complete Storm Water Pollution Prevention Plan and submit to State	April 1, 1993
Implement SWPPP, including construction of detention ponds and drainage changes	October 1, 1993

5.10 Record Keeping

5.10.1 Retention of Records: A NPDES Storm Water Pollution Prevention File will be maintained at the plant. Records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the General Permit, periodic inspection reports, annual compliance evaluations, and records of all data used to complete the Notice of Intent will be maintained in the file for a minimum of three (3) years from the date of the measurement, report, or application.

5.10.2 Records Content: Records of monitoring information shall include:

a. The date, exact place, and time of sampling or measurements;

b. The initials or name(s) of the individual(s) who performed the sampling or measurements;

c. The date(s) adn time(s) analysese were performed; and

d. Complete laboratory reports, including references or procedures for analytical methods used, results of such analyses and blank, duplicate, or method spike results.

6.0 TRAINING

All plant employees shall receive training on the content of this plan. Supervisors will each receive a copy and become thoroughly familiar with it through training, discussion, and self study. Supervisors will train their employees in the overall plan and in the specific needs of their work areas.

Training will, at a minimum, include programs to ensure that facility personnel understand basic procedures for pollution prevention and good housekeeping and are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, as applicable to each employee's job function:

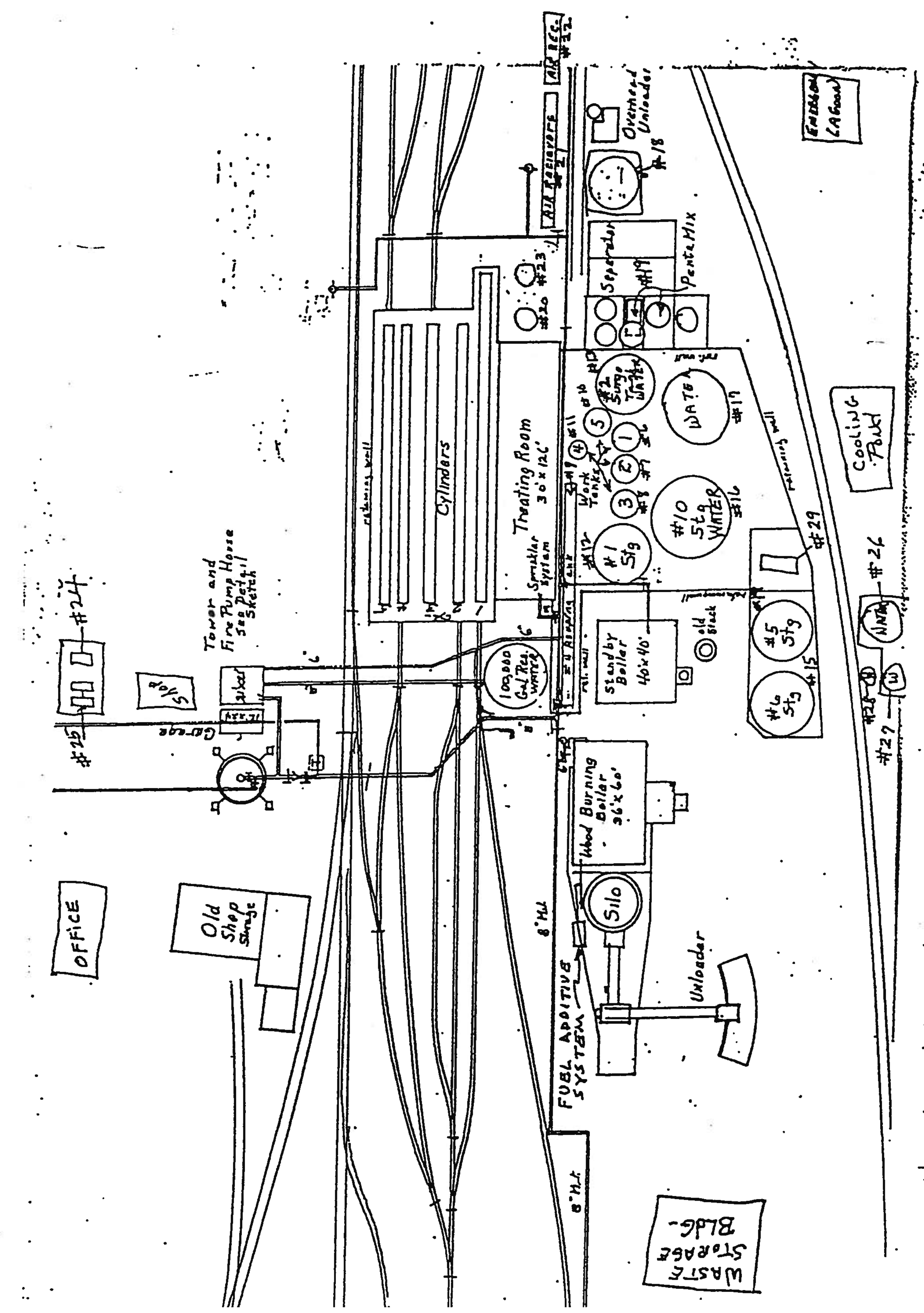
* Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
* Key parameters for automatic waste feed cut-off systems;
* Communications and alarm systems;
* Response to fires or explosions;
* Response to ground-water or surface water contamination incidents;
* Shutdown of operations;
* Methods for the safe handling of hazardous materials;
* Procedures for coordination with local emergency response organizations;
* Use and location of medical supplies;
* Use of emergency response equipment and supplies appropriate to work areas; and
* Emergency response procedures and plans contained within this SPCC and Contingency Plan.

Refresher training will be provided at least annually. New employees will not work in unsupervised positions until they have completed all training required for those positions. Supervisors will provide training to their employees and management will assure that supervisors are properly trained.

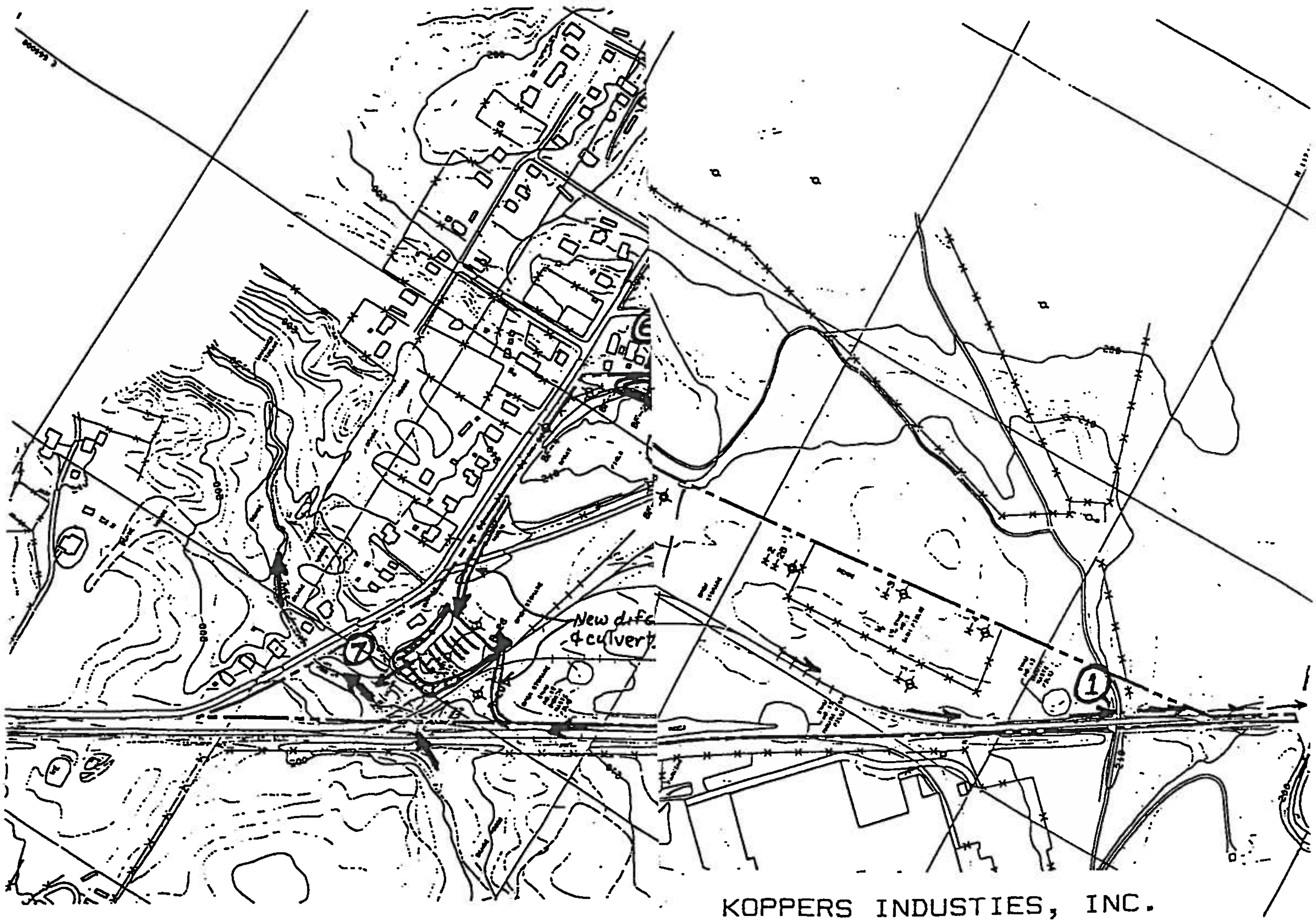
Employees with specific additional job related training needs will also be given that training, such as hazardous waste handling training as required by RCRA and State regulations, hazardous waste operating procedures for fuel additive to the boiler, storm water pollution prevention, and waste water operations.

This training may be coordinated and take place concurrent with Hazard Communication and RCRA training, safety meetings, and annual updates.

FIGURES



SITE PLAN
FIGURE 1



KOPPERS INDUSTIES, INC.
GRENADA, MS PLANT
STORM WATER MANAGEMENT PLAN
DRAFT – February 4, 1993

0 100 200 300 400 500 FT

FIGURE 2

APPENDIX B

STORM WATER MANAGEMENT FACILITIES INSPECTION RECORD BLANK FORM

STORM WATER MANAGEMENT
FACILITIES INSPECTION RECORD
KOPPERS INDUSTRIES, INC.

Plant: Grenada, MS   Year: 19 _ _   Page: _____

Inspector's Name	Initials

LEGEND
O - Indicates OK
X - Indicates Problem
Note all problems, observations, and actions taken in Section II of Inspection Record on back.

I. INSPECTION

DATE (m/d)->										
TIME (hr/min)->										
OUTFALL 001 **										
OUTFALL 002										
-Outlet Structure *										
-Ponds & Inflow Ditches **										
Outfall 3 **										
OUTFALL 004 -Outlet Structure *										
-Ponds & Inflow Ditches **										
OUTFALL 005 -Outlet Structure *										
-Pond & Ditches **										
OUTFALL 006 -Outlet Structure *										
-Pond & Ditches **										
OUTFALL 006 -Outlet Structure *										
-Pond & Ditches **										

Frequency: * Monthly ** Quarterly AND after significant storms.

Look for damage, debris, or erosion that indicates or could cause malfunction of outlet structure, excessive sedimentation in ponds, erosion or loss of vegetation, treated wood debris, sources of contamination or muddy water, damaged culverts, and general housekeeping.

Enter observations and remedial actions on back of this form.

II. OBSERVATIONS AND REMEDIAL ACTIONS

Date	Description	Initials

APPENDIX C

STORM WATER DISCHARGE EVALUATION AND CERTIFICATION MISSISSIPPI WORKSHEET #2c

NON-STORM WATER DISCHARGE EVALUATION AND CERTIFICATION

Worksheet #2c

Outfall No.	Date of Evaluation	Method Used to Test or Evaluate Discharge	If Evaluation is Impossible Give Reason	Is Non-Storm Water Being Discharged? (Yes/No)	List Likely Sources of Non-Storm Water Discharges	Person(s) Who Conducted the Test or Evaluation
1	2-2-93	VISUAL	NA	NO	NONE	STEVE Smith MARK Good
2	2-2-93	VISUAL	NA	NO	NONE	STEVE Smith MARK Good
3	2-2-93	VISUAL	NA	NO	NONE	STEVE Smith MARK Good
4	2-2-93	VISUAL	NA	NO	NONE	STEVE Smith MARK Good
5	2-2-93	VISUAL	NA	NO	NONE	STEVE Smith MARK Good
6 & 7	2-2-93	VISUAL	NA	NO/NO	NONE	STEVE Smith MARK Good

CERTIFICATION

I certify under penalty of law that is, to the best of my knowledge and belief, true, accurate, and complete (see permit Part V.G.).

A. Name & Official Title (type or print)
Stephen T. Smith, Mgr. Environmental

B. Area Code and Telephone No.
412-227-2677

C. Signature Stephen T. Smith

D. Date Signed
3-31-93

(Make additional copies of this form as needed)

ThermoRetec Corporation
9 Damonmill Square, Suite 3A
Concord, MA 01742-2851

ThermoRetec
Smart Solutions. Positive Outcomes.

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March 24, 1999

Mr. C. Wayne Stover, Jr.
Mississippi Department of Environmental Quality
Environmental Permits Division
2380 Highway 80 West
Jackson, MS 39204

RE: Post-Closure Permit Renewal Application
Notice of Deficiency
Koppers Industries, Inc.
Grenada Facility
Grenada, Mississippi
EPA I.D. Number: MSD 007 027 543

Dear Mr Stover:

On behalf of Beazer East, Inc. (Beazer) ThermoRetec Consulting Corporation (ThermoRetec) has revised the Post-Closure Permit Renewal Application prepared by Fluor Daniel GTI, Inc. in December 1997 and revised in April 1998.

As we discussed in our March 8, 1999 telephone conversation, we have revised Section E-6b Sampling and Analysis and the Sampling and Analysis Plan provided as Appendix E-5 to address comments in your correspondence to Fluor Daniel dated July 20, 1998 and October 21,1998. We have also revised Section E-6d Statistical Evaluation and Appendix E-6 Statistical Procedures per our phone conversation. As we discussed, Beazer will use MDEQ policy to determine if there is evidence of a potential release at the site.

Additionally, Appendix E-6 has been revised to include MDEQ policy as it applies to SW-846 Method 8270C for analyzing semivolatile organic constituents. SW-846 lists Estimated Quantitation Limits (EQLs) for constituents analyzed using Method 8270C rather than Method Detection Limits (MDLs as listed for Method 8310) and does not list Practical Quantitation Limits. The empirical comparison will be based on analytical results detected above EQLs and Laboratory Limits-of-Quantitation (LOQs) as detailed in Appendix E-6.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 26 1999

4WD-RPB

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: NOTI on Interim Measures Work Plan
EPA I.D. Number: MSD 007 027 543
Internal EPA RCRIS Code: CA620

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has completed its review of the January 1999, Interim Measures Work Plan. This letter is a formal follow-up to the February 9, 1999, meeting between EPA and Beazer East on Interim Measures. As you know, this plan is the culmination of a process begun back in 1994. Specifically, Beazer East responded in 1994 to an earlier EPA request for voluntary review of possible stabilization actions which could be taken to address known contamination at the Grenada facility. By 1996, after a focused assessment of the most highly contaminated portion of the site, a conceptual design to voluntarily cover the former wastewater treatment lagoons and install a vertical containment barrier had been concurred with by EPA. However, this original plan was not immediately implemented, and the plan was subsequently expanded during permit reissuance in 1998 to also include measures to address both onsite and offsite contaminated sediments found in the adjacent Central Ditch. With the eventual inclusion of necessary actions at other contaminated media (e.g., measures to address groundwater contamination and its migration), EPA believes that the proposed Interim Measures should be consistent with a conditional remedy as defined in the 1990 Proposed Subpart S Rule.

Review of the work plan led to several comments. Some of the comments contained in this letter were brought up at the meeting while others were not generated until formal review of the work plan (see Enclosure 1). An adequate response to these comments is needed before final approval can be granted.

Within forty-five (45) calendar days from receipt of this letter, a response to comments must be submitted. Please include two (2) copies of the response to comments. The above documents should be mailed to both Mr. Narindar M. Kumar and Mr. Jerry Cain at the following addresses:

Mr. Narindar Kumar
Chief, RCRA Programs Branch
Waste Management Division
U.S. Environmental
Protection Agency
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303
ATTN: South Programs Section

Mr. Jerry Cain, Chief
Environmental Permit Division
Mississippi Department of
Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385
ATTN: Timber and Wood
Products Branch

If you have any questions, then please contact Wesley S. Hardegree of my staff at (404) 562-8486.

Sincerely,

Caron B. Falconer for

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

cc: Wayne Stover, MSDEQ
R.K. Collins, Vice President, Koppers Industries

EPA COMMENTS ON THE INTERIM MEASURES WORK PLAN
KOPPERS/BEAZER EAST - GRENADA PLANT
EPA I.D. NUMBER: MSD 007 027 543
February 1999

Comment #1: 2.1, Basis of Design

The work plan states that "[s]ignificant further down cutting in the reach within one mile of the bogue is not likely." Since the plan is to reproduce the existing ditch grade after excavation, this assumption seems reasonable. However, Beazer East should be aware that the Interim Measures Report must include a long term monitoring plan for not only the cover/vertical barrier/leachate removal structure (see Section 6.5) but also the grade control structure and the downgradient ditch. For example, part of the long term monitoring plan will be to confirm that erosion of the clean fill does not occur downstream of the grade control structure (i.e., the performance of the drop structure must be monitored). If such monitoring detects adverse erosion and re-exposure of contaminated sediment, then corrective measures may be necessary.

Comment #2: Section 2.2.1, Excavate Sediment From Central Ditch

Although Beazer East has stated in the past that the material in the ditch is not "free flowing" (i.e., it is Residual NAPL or NAPL Staining as defined in Section 2.5.2.2 of the RFI Report), the work plan must include a contingency management plan for exclusion of free flowing material from inclusion under the cover.

Comment #3: 3.2.2, Berm Construction

According to the work plan, onsite soils are proposed in part to serve as the berm material. The work plan must acknowledge that contaminated onsite soils from beyond the area of contamination identified as SWMU 11 must not be used in the berm construction.

Comment #4: 3.2.3, Sediment Placement and Compaction

As mentioned in the February 9, 1999, meeting, the work plan fails to mention how the excavated sediment will be transported in a manner which prevents further contamination during transport. The plan also fails to mention or identify the decontamination procedures which will be followed for hauling vehicles leaving SWMU 11. The work plan must be revised to address these observations.

Comment #5: 3.2.4, Low Permeability Cover

a) The original objective listed in the 1996 Predesign and Investigation Report and Conceptual Design was to cover SWMU 11 for exposure control. With the inclusion of the contaminated sediments into SWMU 11, the cover's objective is now "...to reduce precipitation infiltration to the saturated zone and thereby reduce the groundwater hydraulic gradient toward the ditch." Although not directly mentioned in the work plan, exposure control is still satisfied by the proposed cover.

EPA notes that there are no performance standards listed to meet Beazer's hydraulic gradient objective nor an analysis/estimate of the cover's impact on hydraulic gradient. In other words, there is no discussion of any estimates made to confirm that the GCL will meet the objective of reducing the groundwater hydraulic gradient toward the ditch. Is it assumed that any reduction in infiltration at SWMU 11 will initiate a corresponding reduction in groundwater hydraulic gradient? Clearly, part of long term monitoring will include future monitoring to confirm that the hydraulic gradient is reduced. There is also no mention of a possible secondary outcome of the cover - to reduce leachate formation. Based on the nature of the contaminated sediments, is leachate formation within this monofill expected?

EPA conceptualizes two basic objectives for the cover installed over the consolidated contaminated media: main objective - containment and exposure control, secondary objective - limit infiltration of potentially leachate-producing liquids and hydraulic gradient reduction.

b) The work plan includes an eight (8) inch structural layer above the geosythetic clay liner (GCL). However, it is not clear if this layer is to also function as a drainage layer (EPA Guidance on RCRA Caps recommends a drainage layer of twelve (12) inches with geomembrane to prevent clogging). The work plan also does not list a minimum hydraulic conductivity and slope requirements for the eight (8) inch structural layer. EPA also questions whether the vegetative cover is thick enough to prevent the formation of rills and gullies. The work plan must address the above concerns.

c) EPA Guidance on RCRA Caps utilizes both a flexible membrane liner (FML) and a low permeability soil layer underneath the flexible membrane liner to cut down on leaching. The proposal relies completely on a geosynthetic clay liner (GCL) for the low permeability layer. Given that the hydraulic conductivity of the GCL is greater than 5×10^{-7}

cm/sec, this seems reasonable. EPA may have missed it in the work plan, but what will be the complete thickness of the GCL for the cover? How thick is the woven geotextile?

Comment #6: Figure 7

As mentioned in the February 9, 1999, meeting, EPA and Beazer East will have to agree on the location of future monitoring wells within the cover. EPA's review of the proposed wells was focused on trying to ensure that an adequate network will exist across the cover. EPA also looked wants to new network to adequately reproduce the main detections observed by the existing network prior to well abandonment.

EPA's preliminary review of the monitoring well network within the covered area concludes that an upper and lower sand monitoring well nest near R96-6 may be needed to serve as part of the line of wells paralleling the DNAPL recovery wells. Similarly, to replace groundwater data previously obtained from R96-7, R96-9 and R96-10, an additional lower sand well may be needed in the general area of R96-9.

Please review the overall monitoring scheme to check and see that the future well network within SWMU 11 will adequately monitor groundwater quality under the cover while also reproducing the key "hits" previously observed in the 1990's.

Comment #7: Public Participation Plan

The work plan needs to acknowledge that a press release is planned shortly before work begins (i.e., the Koppers' press release of the Fact Sheet drafted by Beazer East). The plan also needs to acknowledge that additional project updates to the press will be made as the project proceeds.

Comment #8: Cleanup Numbers in the Central Ditch

As Beazer East knows, site-specific cleanup numbers have not been calculated for the ditch removal action. Instead, the ditch excavation is taken with the objective of removing the highly contaminated (visually contaminated) sediment within the ditch. At the close of the February meeting, Beazer East stated its intent to remove contaminated sediment in a manner which would be equivalent with a final remedy. EPA and Beazer East then agreed that the concentrations remaining in the sediment should be low, but EPA failed to recognize at the time that the residual concentrations may still exceed Region 4's sediment screening levels.

In the absence of site-specific cleanup levels, EPA will utilize its Region 4 sediment screening levels to determine whether further action will be needed after the removal is completed. In CERCLA terms, the Region 4 sediment screening levels are functioning as preliminary cleanup goals.

A portion of the ditch which will undergo deep excavation along with replacement of clean fill (T-7 to T-22). In this ditch section, although some residual contamination will remain above the Region 4 sediment screening levels, the residual contamination will be under approximately 3 to 5 feet of clean fill. Therefore, with the placement of clean fill, exposure to the residual contaminated present above EPA's Region 4 sediment screening levels can be considered for the most part interrupted. However, long term monitoring will be needed to confirm that the remaining residual contamination is not re-exposed.

Between T-22 and T-24, about one foot is expected to be removed with no fill replacement. Because there is no analytical data available for the interval below the planned removal, after removal of the highly contaminated sediment, total PAH concentrations **may** remain at the surface above the Region 4 sediment screening levels. Residual contamination remaining in the biologically active zone above the Region 4 Sediment Screening Level (i.e., the Preliminary Cleanup Goal) would necessitate a site specific risk analysis. Such a risk analysis may or may not conclude that the remaining concentrations are protective. Even if refilling is proposed for this area, EPA seriously questions whether the shallow refilling would be thick enough to consider the ecological exposure pathway broken.

Because no concentration data is currently available or planned to be collected on the exposed sediment to be left in place, EPA is concerned that the Interim Measures for the ditch may ultimately fail as a remedy. To ensure that the Interim Measures has the best chance to serve as a remedy, post-excavation sampling must be performed prior to the completion of the removal action and compared to the Region 4 sediment screening levels.

W5Y.

HSI GEOTRANS
A TETRA TECH COMPANY

46050 Manekin Plaza
Suite 100
Sterling, Virginia
20166

703-444-7000 FAX 703-444-1685

March 10, 1999

MAR 1999
Received
OPC

Mr. Narindar Kumar
Chief, RCRA Programs Branch
Waste Management Division
U.S. Environmental Protection Agency
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303
ATTN: South Programs Section

and

Mr. Jerry Cain, Chief
Environmental Permit Division
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385
ATTN: Timber and Wood Products Branch

Reference: Response to Comments on the Interim Measures Work Plan, Koppers/Beazer East, Grenda, MS
EPA I.D. Number: MSD 007 027 543
HSI GeoTrans Project No. N913-102

Dear Messrs. Kumar and Cain:

Thank you for your timely review of the Interim Measures Work Plan. We have attached two copies of the responses corresponding with each of your comments. Responses to Comments #1, #5b, #6, and #8 include references to additional work and discussions with EPA during and after implementation of the IM. The additional tasks referenced are related to monitoring, maintenance and confirmation of the IM effectiveness and not the implementation itself. We believe that this approach is consistent with our cooperative relationship, and it will allow us to address the issues with the information gathered during the implementation.

If you have any questions regarding our responses please contact me or Mike Bollinger.

Sincerely,

Peter A. Rich, P.E.
Principal Engineer

PAR/eb
Attachments: 2 Copies
cc: M. Bollinger, Beazer East (copy w/attachment)
P. Anderson, Ogden (copy w/attachment)
M. Wheeler, Jr., Sevenson (copy w/attachment)

D:\BEAZER\ltr005.wpd
March 10, 1999

EPA COMMENTS AND RESPONSES ON THE INTERIM MEASURES WORK PLAN
KOPPERS/BEAZER EAST - GRENADA PLANT
EPA I.D. NUMBER: MSD 007-027-543

Comment #1: Section 2.1, Basis of Design

The work plan states that "[s]ignificant further down cutting in the reach within one mile of the bogue is not likely." Since the plan is to reproduce the existing ditch grade after excavation, this assumption seems reasonable. However, Beazer East should be aware that the Interim Measures Report must include a long term monitoring plan for not only the cover/vertical barrier/leachate removal structure (see Section 6.5) but also the grade control structure and the downgradient ditch. For example, part of the long term monitoring plan will be to confirm that erosion of the clean fill does not occur downstream of the grade control structure (i.e., the performance of the drop structure must be monitored). If each monitoring detects adverse erosion and re-exposure of contaminated sediment, then corrective measures may be necessary.

Response #1:

An Operations and Monitoring Plan (O&M Plan) will be prepared as part of the Interim Measure Final Report. The O&M Plan will present the monitoring requirements for the remediated Central Ditch and if necessary, corrective measures.

Comment #2: Section 2.2.1, Excavate Sediment From Central Ditch

Although Beazer East has stated in the past that the material in the ditch is not "free flowing" (i.e., it is Residual NAPL or NAPL Staining as defined in Section 2.5.2.2 of the RFI Report), the work plan must include a contingency management plan for exclusion of free flowing material from inclusion under the cover.

Response #2:

If any free-flowing NAPL is encountered during IM sediment excavation or other activities, it will be collected, placed in containers and managed per regulatory requirements.

Comment #3: Section 3.2.2, Berm Construction

According to the work plan, onsite soils are proposed in part to serve as the berm material. The work plan must acknowledge that contaminated onsite soils from beyond the area of contamination identified as SWMU 11 must not be used in the berm construction.

Response #3

No impacted materials from beyond the limits of SWMU 11 will be used during the berm construction.

Comment #4: Section 3.2.3, Sediment Placement and Compaction

As mentioned in the February 9, 1999 meeting, the work plan fails to mention how the excavated sediment will be transported in a manner which prevents further contamination during transport. The plan also fails to mention or identify the decontamination procedures which will be followed for hauling vehicles leaving SWMU 11. The work plan must be revised to address these observations.

Response #4:

Trucks with water-tight beds will be used to transport sediment from offsite to the SWMU 11 impoundment, thus spillage of impacted material will be minimized. Any spillage will be collected as soon as possible after the occurrence. The right of way (ROW) that the trucks will travel on will be inspected daily to ensure that impacted sediments are not present.

Upon exit from the SWMU 11 impoundment to offsite locations the trucks will be cleaned at a decontamination pad to prevent the tracking of contamination onto the offsite ROW. Wash water from the pad will be collected and infiltrated within SWMU 11.

Comment #5: Section 3.2.4, Low Permeability Cover

a. The original objective listed in the 1996 Predesign and Investigation Report and Conceptual Design was to cover SWMU 11 for exposure control. With the inclusion of the contaminated sediments into SWMU 11, the cover's objective is now "...to reduce precipitation infiltration to the saturated zone and thereby reduce the groundwater hydraulic gradient toward the ditch." Although not directly mentioned in the work plan, exposure control is still satisfied by the proposed cover.

   EPA notes that there are no performance standards listed to meet Beazer's hydraulic gradient objective nor an analysis/estimate of the cover's impact on hydraulic gradient. In other words, there is no discussion of any estimates made to confirm that the geosythetic clay liner (GCL) will meet the objective of reducing the groundwater hydraulic gradient toward the ditch. Is it assumed that any reduction in infiltration at SWMU 11 will initiate a corresponding reduction in groundwater hydraulic gradient? Clearly, part of long term monitoring will include future monitoring to confirm that the hydraulic gradient is reduced. There is also no mention of a possible secondary outcome of the cover to reduce leachate formation. Based on the nature of the contaminated sediments, is leachate formation within this monofill expected?

EPA conceptualizes two basic objectives for the cover installed over the consolidated contaminated media: main objective - containment and exposure control, secondary objective - limit infiltration of potentially leachate-producing liquids and hydraulic gradient reduction.

b. The work plan includes an eight (8) inch structural layer above the GCL. However, it is not clear if this layer is to also function as a drainage layer (EPA Guidance on RCRA Caps recommends a drainage layer twelve (12) inches with geomembrane to prevent clogging). The work plan also does not list a minimum hydraulic conductivity and slope requirements for the eight (8) inch structural layer. EPA also questions whether the vegetative cover is thick enough to prevent the formation of rills and gullies. The work plan must address the above concerns.

c. EPA Guidance on RCRA Caps utilizes both a flexible membrane liner (FML) and a low permeability soil layer underneath the flexible membrane liner to cut down on leaching. The proposal relies completely on a GCL for the low permeability layer. Given that the hydraulic conductivity of the GCL is greater [less] than 5×10^{-7} cm/sec, this seems reasonable. EPA may have missed it in the work plan, but what will be the complete thickness of the GCL for the cover? How thick is the woven geotextile?

Response #5:

a. The objectives of the cover are containment, exposure control and infiltration reduction. The designed cover will effectively reduce infiltration to approximately one inch per year (see attached HELP model run). This reduction was modeled with the installation of the sheet pile wall to prevent DNAPL migration to the Central Ditch. The attached groundwater model description, including potentiometric surface figures, shows the reduced hydraulic gradient towards the ditch and the lack of a groundwater mound in the area. The reduced infiltration will also limit the volume of water contacting the impacted sediments and the in-situ SWMU 11 materials.

b. The minimum slope of the structural fill layer will be 2%, like the minimum slope of the finished cover. Based on the gradation, the structural-fill layer will have an estimated hydraulic conductivity of 5.8×10^{-3} cm/sec and will thus serve as a drainage layer. (see attached HELP model run). This layer will allow drainage so that the average head on the GCL will be less than the layer thickness. The drainage layer will discharge to the perimeter drainage channel so that the infiltrated water can be transmitted from the cover. The 4-inch vegetative layer will be generally sufficient to prevent the formation of rills and gullies. Maintenance of the cover will include inspection and correction of erosion or any lack of vegetation. Cover maintenance requirements will also be detailed in the O&M Plan

c. The GCL thickness is typically 7 to 10 millimeters thick (Geosynthetic Research Institute). The geotextile thickness is one to two millimeters depending on specified weight.

Comment #6: Figure 7

As mentioned in the February 9, 1999 meeting, EPA and Beazer East will have to agree on the location of future monitoring wells within the cover. EPA's review of the proposed wells was focused on trying to ensure that an adequate network will exist across the cover. EPA also looked wants to new network to adequately reproduce the main detections observed by the existing network prior to well abandonment.

EPA's preliminary review of the monitoring well network within the covered area concludes that an upper and lower sand monitoring well nest near R96-6 may be needed to serve as part of the line of wells paralleling the DNAPL recovery wells. Similarly, to replace groundwater data previously obtained from R96-7, R96-9, and R96-10, an additional lower sand well may be needed in the general area of R96-9.

Please review the overall monitoring scheme to check and see that the future well network within SWMU 11 will adequately monitor groundwater quality under the cover while also reproducing the key "hits" previously observed in the 1990's.

Response #6:

Beazer intends to install new monitor wells following the IM construction. The wells proposed in the IM Work Plan will provide potentiometric information necessary to evaluate the effectiveness of the IM. The details of the monitoring plan, including sampling frequency and parameters, will be presented in the O&M plan and included in the IM Final Report.

Comment #7: Public Participation Plan

The work plan needs to acknowledge that a press release is planned shortly before work begins (i.e., the Kopper's press release of the Fact Sheet drafted by Beazer East). The plan also needs to acknowledge that additional project updates to the press will be made as the project proceeds.

Response #7:

A project Fact Sheet will be issued to the local press when a construction start date has been finalized. At least one additional update will be issued when project milestones (e.g., excavation within the ditch completed) are reached.

Comment #8: Cleanup Numbers in the Central Ditch

As Beazer East knows, site-specific cleanup numbers have not been calculated for the ditch removal action. Instead, the ditch excavation is taken with the objective of removing the highly contaminated (visually contaminated) sediment within the ditch. At the close of the February meeting, Beazer East stated its intent to remove contaminated sediment in a manner which would be equivalent with a final remedy. EPA and Beazer East then agreed that the concentrations remaining in the sediment should be low, but EPA failed to recognize at the time that the residual concentrations may still exceed Region 4's sediment screening levels.

In the absence of site-specific cleanup levels, EPA will utilize its Region 4 sediment screening levels to determine whether further action will be needed after the removal is completed. In CERCLA terms, the Region 4 sediment screening levels to determine whether further action will be needed after the removal is completed. In CERCLA terms, the Region 4 sediment screening levels are functioning as preliminary cleanup goals.

A portion of the ditch which will undergo deep excavation along with replacement of clean fill (T-7 to T-22). In this ditch section, although some residual contamination will remain above the Region 4 sediment screening levels, the residual contamination will be under approximately three to five feet of clean fill. Therefore, with the placement of clean fill, exposure to the residual contaminated present above EPA's Region 4 sediment screening levels can be considered for the most part interrupted. However, long term monitoring will be needed to confirm that the remaining residual contamination is not re-exposed.

Between T-22 and T-24, about one foot is expected to be removed with no fill replacement. Because there is no analytical data available for the interval below the planned removal, after removal of the highly contaminated sediment, total PAH concentrations may remain at the surface above the Region 4 sediment screening levels. Residual contamination remaining in the biologically active zone above the Region 4 Sediment Screening Level (i.e., the Preliminary Cleanup Goal) would necessitate a site specific risk and analysis. Such a risk analysis may or may not conclude that the remaining concentrations are protective. Even if refilling is proposed for this area, EPA seriously questions whether the shallow refilling would be thick enough to consider the ecological exposure pathway broken.

Because no concentration data is currently available or planned to be collected on the exposed sediment to be left in place, EPA is concerned that the Interim measures for the ditch may ultimately fail as a remedy. To ensure that the Interim Measures has the best chance to serve as a remedy, post-excavation sampling must be performed prior to the completion of the removal action and compared to the Region 4 sediment screening levels.

Response #8:

The Work Plan indicates that the top foot of sediments below T-22 will be removed. Beazer recognizes that a strict interpretation of this approach might lead to the conclusion that all sediments deeper than one foot will be left in place, regardless whether evidence of PAH exists or not (i.e., staining). It is Beazer's intention to remove any sediment that is deeper than one foot and visibly stained will be removed during the interim measure. Therefore, no visibly stained sediments will remain on the surface of the Central Ditch after the interim measure is completed.

Based upon the data collected to date in the Central Ditch, one can derive a concentration of total PAH in the first visibly clean interval of sediment. When this is done using the data collected from Transects 15 to 24 during last August, total PAH concentrations of about 26 and 37 mg/kg are derived assuming that non-detects are equal to either zero or one half the detection limit, respectively. Both of these concentrations are above the Region 4 screening concentration for total PAH. However, Beazer does not believe that the Region 4 screening concentration was intended for use as a final cleanup level. It represents a concentration at which adverse effects are almost certain not to occur. Thus, sediments with concentrations of total PAH equal to or less than the screening concentration are assumed not to pose a risk to benthic biota and do not require further evaluation. Sediments with concentrations of total PAH greater than the screening concentration may or may not pose a potential risk to benthos. Further evaluation is required to do determine whether or not a potential risk exists.

Based on Beazer's experience with PAH in sediments at several other wood-treating sites, we are confident that the concentrations of total PAH that may remain in surface sediments between transects 22 and 24 following completion of the interim measure, (i.e., between 26 and 37 mg/kg), will not pose an unacceptable risk to benthic biota in the Central Ditch. As discussed during the telephone conference call on Friday, February 26, Beazer believes sufficient time exists between now and completion of the interim measure to develop a procedure to evaluate the potential risks associated with PAH that may remain in sediments between transects 22 and 24. Beazer would like to meet with EPA to discuss the various options for evaluating total PAH in Central Ditch sediments at your convenience.

HELP MODEL RUN
ATTACHMENT

```
******************************************************************************
******************************************************************************
**                                                                          **
**                                                                          **
**            HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                 **
**              HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                  **
**               DEVELOPED BY ENVIRONMENTAL LABORATORY                      **
**                 USAE WATERWAYS EXPERIMENT STATION                        **
**           FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                **
**                                                                          **
**                                                                          **
******************************************************************************
******************************************************************************


PRECIPITATION DATA FILE:    C:\HELP3\JCKSNP.D4
TEMPERATURE DATA FILE:      C:\HELP3\JCKSNT.D7
SOLAR RADIATION DATA FILE:  C:\HELP3\JCKSNSR.D13
EVAPOTRANSPIRATION DATA:    C:\HELP3\JCKSNET.D11
SOIL AND DESIGN DATA FILE:  c:\help3\BEAZR15.D10
OUTPUT DATA FILE:           C:\HELP3\beazr15.OUT


TIME: 16:37    DATE:  3/ 3/1999


******************************************************************************

   TITLE:  Beazer Greneda Cap - GCL barrier; lat drain

******************************************************************************


   NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
          COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                             LAYER  1
                             --------

                  TYPE 1 - VERTICAL PERCOLATION LAYER
                     MATERIAL TEXTURE NUMBER  9
       THICKNESS                 =     4.00   INCHES
       POROSITY                  =     0.5010 VOL/VOL
       FIELD CAPACITY            =     0.2840 VOL/VOL
       WILTING POINT             =     0.1350 VOL/VOL
       INITIAL SOIL WATER CONTENT =    0.4855 VOL/VOL
       EFFECTIVE SAT. HYD. COND.  =  0.190000006000E-03 CM/SEC
     NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  3.00
```

FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.

LAYER 2

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 2
THICKNESS = 8.00 INCHES
POROSITY = 0.4370 VOL/VOL
FIELD CAPACITY = 0.0620 VOL/VOL
WILTING POINT = 0.0240 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.4370 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.579999993000E-02 CM/SEC
SLOPE = 3.40 PERCENT
DRAINAGE LENGTH = 400.0 FEET

LAYER 3

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 0
THICKNESS = 0.34 INCHES
POROSITY = 0.7500 VOL/VOL
FIELD CAPACITY = 0.7470 VOL/VOL
WILTING POINT = 0.4000 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.7500 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.499999997000E-08 CM/SEC

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 3
THICKNESS = 6.00 INCHES
POROSITY = 0.4570 VOL/VOL
FIELD CAPACITY = 0.0830 VOL/VOL
WILTING POINT = 0.0330 VOL/VOL
INITIAL SOIL WATER CONTENT = 0.1457 VOL/VOL
EFFECTIVE SAT. HYD. COND. = 0.310000009000E-02 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT
SOIL DATA BASE USING SOIL TEXTURE # 9 WITH A
FAIR STAND OF GRASS, A SURFACE SLOPE OF 3.%
AND A SLOPE LENGTH OF 400. FEET.

SCS RUNOFF CURVE NUMBER = 81.60
FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT
AREA PROJECTED ON HORIZONTAL PLANE = 2.000 ACRES
EVAPORATIVE ZONE DEPTH = 12.0 INCHES
INITIAL WATER IN EVAPORATIVE ZONE = 5.438 INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE = 5.500 INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE = 0.732 INCHES
INITIAL SNOW WATER = 0.000 INCHES
INITIAL WATER IN LAYER MATERIALS = 6.563 INCHES
TOTAL INITIAL WATER = 6.563 INCHES
TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
JACKSON MISSISSIPPI

STATION LATITUDE = 32.33 DEGREES
MAXIMUM LEAF AREA INDEX = 2.00
START OF GROWING SEASON (JULIAN DATE) = 61
END OF GROWING SEASON (JULIAN DATE) = 328
EVAPORATIVE ZONE DEPTH = 12.0 INCHES
AVERAGE ANNUAL WIND SPEED = 7.40 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 74.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 73.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 78.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 77.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR JACKSON MISSISSIPPI

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
5.00	4.48	5.86	5.85	4.83	2.94
4.40	3.71	3.55	2.62	4.18	5.40

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR JACKSON MISSISSIPPI

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
45.70	49.10	56.30	65.10	72.50	79.20
81.90	81.20	76.40	65.00	54.90	48.60

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR JACKSON MISSISSIPPI
AND STATION LATITUDE = 32.33 DEGREES

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 50

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	5.14	4.79	5.71	5.08	4.80	2.75
	4.37	3.61	3.04	2.99	3.98	5.80
STD. DEVIATIONS	2.54	1.91	3.22	2.88	3.08	1.50
	1.93	1.91	1.71	2.17	1.97	2.70
RUNOFF						
TOTALS	2.695	2.101	2.236	1.217	0.824	0.037
	0.062	0.082	0.099	0.350	0.756	2.984
STD. DEVIATIONS	2.248	1.778	2.624	1.706	1.488	0.097
	0.140	0.247	0.271	0.840	1.199	2.592
EVAPOTRANSPIRATION						
TOTALS	1.602	2.057	3.183	3.840	5.067	3.785
	3.813	3.561	2.470	1.539	1.069	1.241
STD. DEVIATIONS	0.177	0.178	0.451	0.974	0.945	1.566
	1.458	1.366	1.221	0.561	0.145	0.143
LATERAL DRAINAGE COLLECTED FROM LAYER 2						
TOTALS	0.6993	0.6396	0.6595	0.5720	0.3965	0.0776
	0.0275	0.0532	0.0597	0.1877	0.4075	0.6454
STD. DEVIATIONS	0.0370	0.0296	0.0602	0.0859	0.1637	0.0974
	0.0530	0.0828	0.1051	0.2215	0.2074	0.1269
PERCOLATION/LEAKAGE THROUGH LAYER 3						

```
-------------------------------
 TOTALS            0.1646  0.1484  0.1441  0.1177  0.0810  0.0161
               0.0059  0.0112  0.0127  0.0396  0.0888  0.1522

 STD. DEVIATIONS      0.0167  0.0153  0.0226  0.0232  0.0357  0.0195
               0.0106  0.0163  0.0214  0.0461  0.0481  0.0365

PERCOLATION/LEAKAGE THROUGH LAYER  4
-------------------------------
 TOTALS            0.1412  0.1491  0.1564  0.1345  0.1226  0.0853
               0.0430  0.0269  0.0204  0.0151  0.0222  0.0667

 STD. DEVIATIONS      0.0454  0.0140  0.0163  0.0213  0.0220  0.0271
               0.0120  0.0089  0.0114  0.0142  0.0342  0.0606

-------------------------------------------------------------------
      AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)
-------------------------------------------------------------------

DAILY AVERAGE HEAD ON TOP OF LAYER  3
-------------------------------
 AVERAGES          10.1175 10.0098  8.8152  7.3894  4.8366  0.9394
               0.3182  0.6159  0.7242  2.3289  5.5254  9.3280

 STD. DEVIATIONS      1.0589  1.0316  1.4332  1.5207  2.2371  1.1935
               0.6123  0.9601  1.3170  2.8304  3.1247  2.3167

*******************************************************************************


*******************************************************************************

   AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS   1 THROUGH   50
-------------------------------------------------------------------
                          INCHES          CU. FEET     PERCENT
                      --------------    ----------    -------
PRECIPITATION              52.07   (  8.823)   378013.7    100.00

RUNOFF                   13.445  ( 6.3880)   97613.00    25.823

EVAPOTRANSPIRATION          33.227  ( 3.4248)   241224.70    63.814

LATERAL DRAINAGE COLLECTED    4.42558 ( 0.61439)   32129.680   8.49961
 FROM LAYER  2

PERCOLATION/LEAKAGE THROUGH    0.98239 ( 0.14444)    7132.183    1.88675
 LAYER  3

AVERAGE HEAD ON TOP          5.079 (   0.759)
 OF LAYER  3

PERCOLATION/LEAKAGE THROUGH    0.98328 ( 0.12863)    7138.598    1.88845
 LAYER  4
```

CHANGE IN WATER STORAGE -0.013 (0.8074) -92.33 -0.024

****

```
*******************************************************************************

          PEAK DAILY VALUES FOR YEARS    1 THROUGH   50
------------------------------------------------------------------------
                                       (INCHES)     (CU. FT.)
                                       ----------   -------------
PRECIPITATION                             5.97        43342.199

RUNOFF                                   5.960        43269.8281

DRAINAGE COLLECTED FROM LAYER  2        0.02343        170.09949

PERCOLATION/LEAKAGE THROUGH LAYER  3    0.006266        45.49112

AVERAGE HEAD ON TOP OF LAYER  3          12.000

MAXIMUM HEAD ON TOP OF LAYER  3          19.118

LOCATION OF MAXIMUM HEAD IN LAYER  2
    (DISTANCE FROM DRAIN)                81.0 FEET

PERCOLATION/LEAKAGE THROUGH LAYER  4    0.006629        48.12522

SNOW WATER                                4.44        32236.6855


MAXIMUM VEG. SOIL WATER (VOL/VOL)               0.4583

MINIMUM VEG. SOIL WATER (VOL/VOL)               0.0610

*** Maximum heads are computed using McEnroe's equations.  ***

    Reference:  Maximum Saturated Depth over Landfill Liner
                by Bruce M. McEnroe, University of Kansas
                ASCE Journal of Environmental Engineering
                Vol. 119, No. 2, March 1993, pp. 262-270.

*******************************************************************************
```

****

FINAL WATER STORAGE AT END OF YEAR 50

LAYER	(INCHES)	(VOL/VOL)
1	1.3503	0.3376
2	3.4960	0.4370
3	0.2512	0.7500
4	0.8298	0.1383

SNOW WATER 0.000

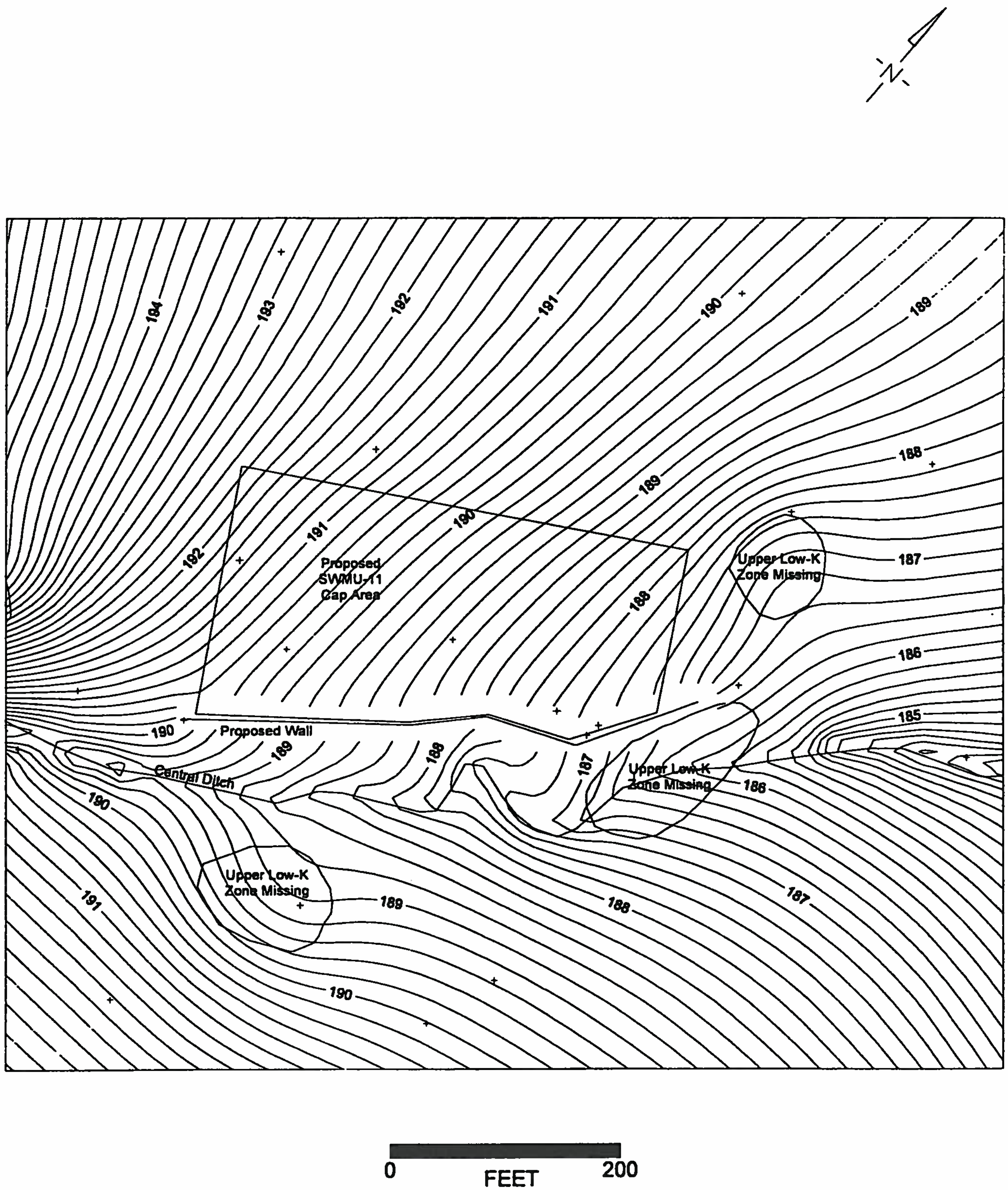
****
****

GROUNDWATER MODELING
ATTACHMENT

Groundwater Modeling

HSI GeoTrans performed numerical simulations to evaluate potential hydraulic effects of the proposed cap and cut-off wall at SWMU-11. A three-dimensional groundwater flow model was constructed using the U.S. Geological Survey MODFLOW code and calibrated by adjusting input parameters to match groundwater elevation, stream flow, and aquifer test drawdown data. A simulation representative of the proposed interim remedial measures, including a partially-penetrating cut-off wall and a cover over SWMU-11 that reduced recharge to 1-in/yr, indicates that the proposed interim measures will result in the following: (a) minor increases in horizontal groundwater velocity immediately below the wall and at each end of the wall (Figures 1 and 2); and (b) decreased downward groundwater flow in the SWMU-11 area (Figure 3).

The simulation analysis demonstrates that the proposed interim remedial strategy of constructing a low-permeability cover and a containment wall at SWMU-11 should reduce DNAPL seepage to the Central Ditch without promoting downward DNAPL migration or DNAPL flow below or around the wall. Groundwater velocity increases at the ends of the wall are expected to be within the range of natural velocity fluctuation; and thus, should have little, if any, effect on chemical transport. The relatively minor increase in groundwater velocity that will likely develop in the Upper Sand Zone immediately beneath the wall will dissipate within a short distance. Finally, mobile DNAPL that may collect beneath the Central Ditch will be removed by the underdrain and sump system that will be constructed during the remediation.

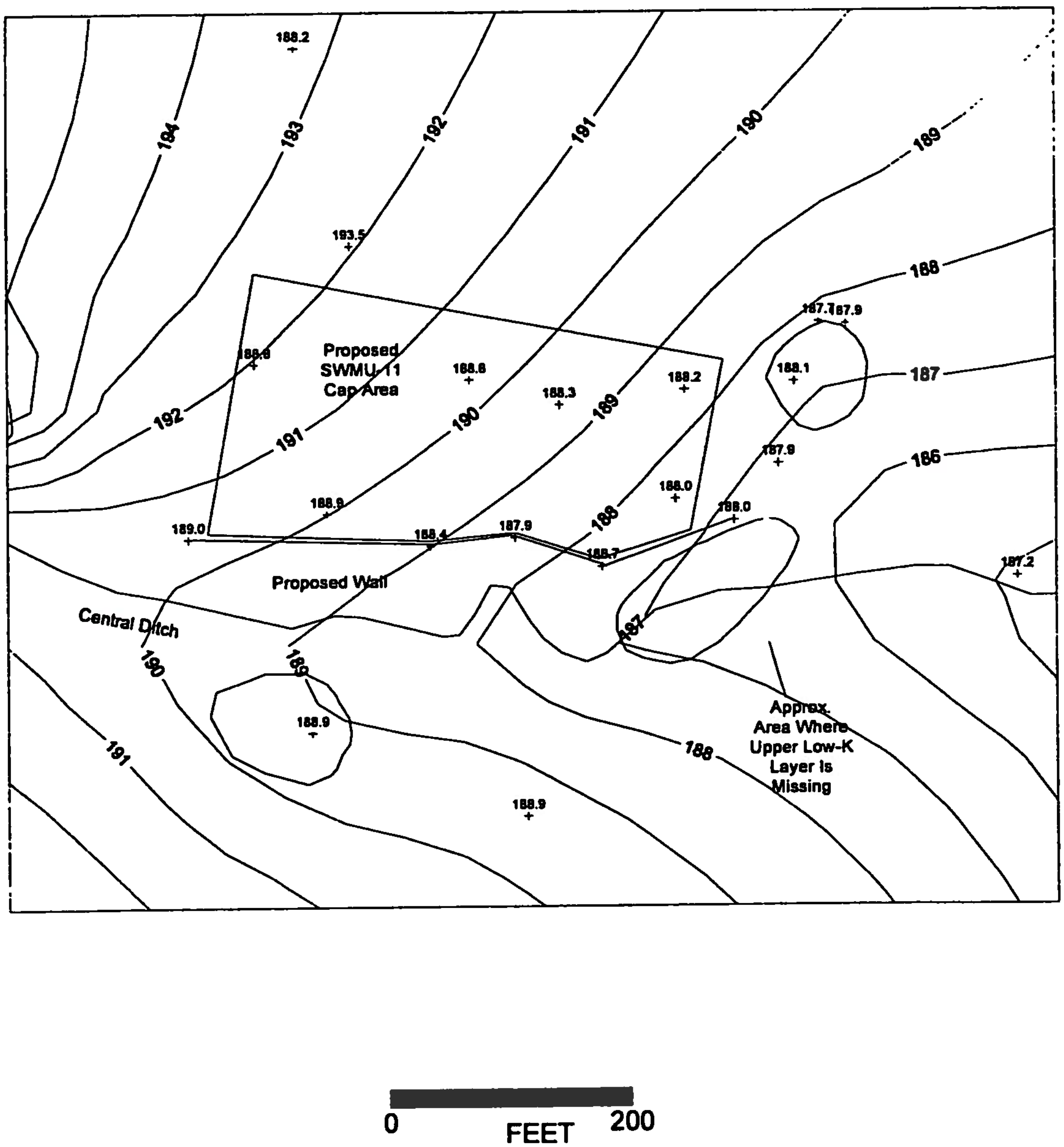


TITLE: Simulated hydraulic heads (in feet > MSL) in the Upper Sand zone (layer 1) for run 4c (5-ft gap below wall; with cap).

LOCATION: Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi

HSI GEOTRANS
A TETRA TECH COMPANY

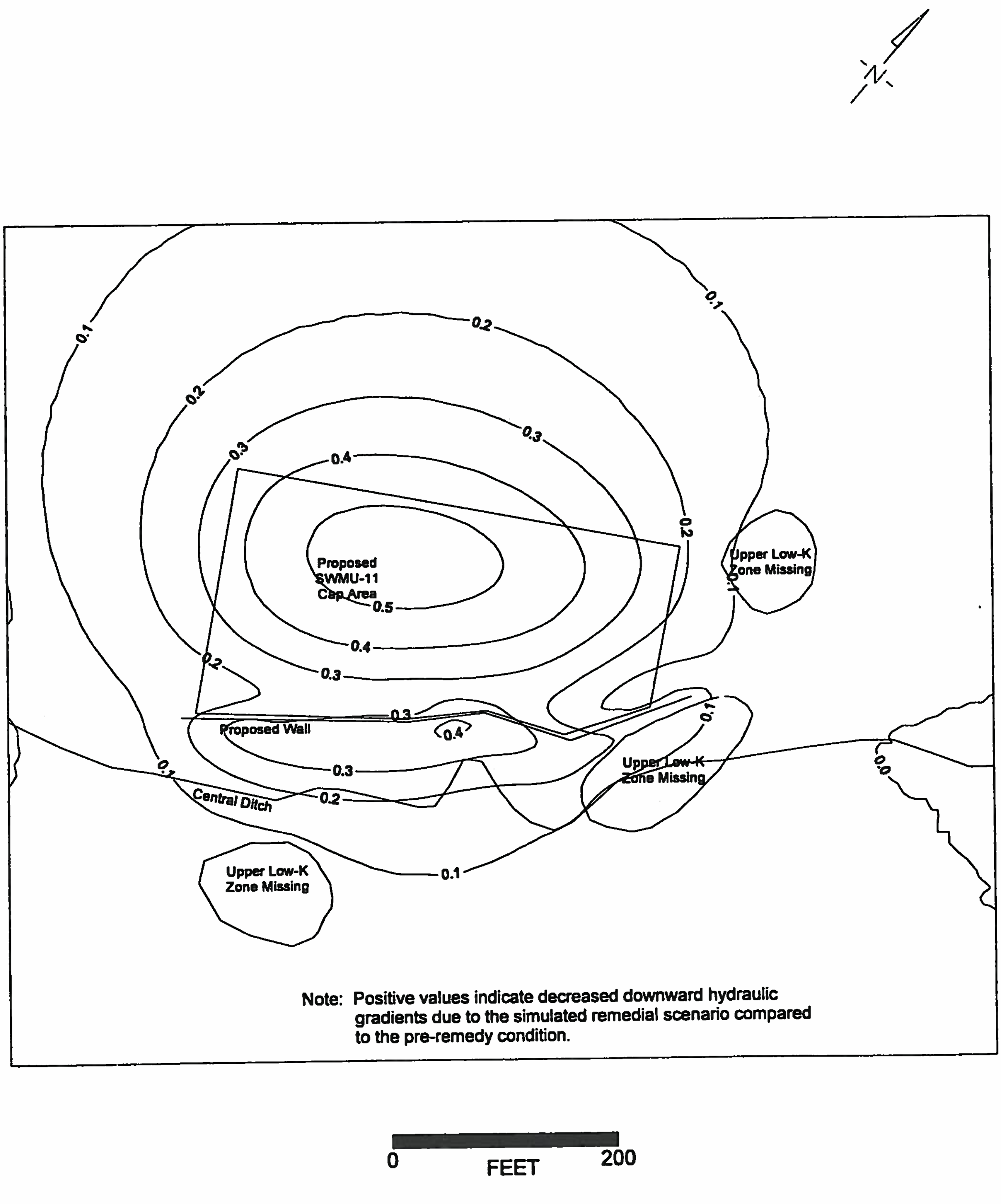
CHECKED:	RMC	FIGURE:
DRAFTED:	RMC	1
FILE:	fig-21.srf	
DATE:	7/28/97	



TITLE:	Simulated pre-remedy hydraulic heads in layer 1 (Upper Sand zone) in the SWMU-11 area and Upper Sand zone groundwater elevations measured in May 1997 (posted values). Values in ft>MSL.
LOCATION:	Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi

HSI GEOTRANS
A TETRA TECH COMPANY

CHECKED:	RMC	FIGURE:
DRAFTED:	RMC	2
FILE:	fig-10.srf	
DATE:	7/28/97	



TITLE: Simulated change in hydraulic head difference (feet) between the Upper Sand zone and the Lower Sand zone: pre-remedy run difference minus run 4c run difference.			
LOCATION: Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi			
HSI GEOTRANS A TETRA TECH COMPANY	CHECKED:	RMC	FIGURE: 3
	DRAFTED:	RMC	
	FILE:	fig-23.srf	
	DATE:	7/28/97	

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800

Telephone: (412) 227-2001
Fax: (412) 227-2423

October 27, 1998

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

RECEIVED
OCT 30 1998
Dept. of Environmental Quality
Office of Pollution Control

Mr. Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division
U. S. Environmental Protection Agency
61 Forsyth Street, SW
Altanta, Georgia 30303-8909

RE: KII Comments on EPA's NOTI on the RFI Phase III Report
Koppers Industries/Beazer East
Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Kumar:

I reviewed your August 27, 1998 letter to Beazer East, Inc. (BEI) with comments on the RFI Phase III report they submitted on January 23, 1998. I noted that the comments on the Risk Assessment, pages 17-28, referenced Koppers Industries, Inc. (KII), as the party responsible for correcting the report. Please be advised that KII has not been involved in drafting or preparing either the risk assessment or the RFI report.

As you know, KII purchased the Grenada Plant from BEI in December 1988. Although, as the property owner, KII is a co-permittee, BEI has assumed responsibility for investigating and remediating historical contamination at the plant. Because BEI is in the lead on the RFI process, KII does not wish to take any action that might interfere and impede the RFI. However, KII is very interested in participating in decisions regarding employee health and our ability to use the property or expand our business.

Please call if you have any questions. I can be reached at (412) 227-2248.

Sincerely,

Thomas E. DuPlessis
Environmental Manager

c: Michael W. Bollinger, BEI
Jerry Cain, MDEQ
Randall D. Collins, K-1700
Tom Henderson, Grenada Plant
Steve Smith, K-1800

FLUOR DANIEL GTI

CONFIDENTIAL FACSIMILE TRANSMISSION

TO: Wayne Starnes FAX No: 501-374-6615

DATE: Aug 26, 1998

FROM: Mary Anna Babich

SUBJECT: Post Closure Permit

NUMBER OF PAGES (including cover sheet): 3

If you do not receive all pages in good condition, please call (412) 823-5300

MESSAGE:

Wayne,

Attachment A will be sent with original hard copy. If you have any questions please give me a call

Mary Anna

p:\staff\roberts\faxcov.wpd

637 Braddock Avenue / East Pittsburgh, PA 15112 USA (412) 823-5300 Fax (412) 824-7213

FLUOR DANIEL GTI

August 25, 1998

Via Facsimile/Airborne Express

Mr. C. Wayne Stover, Jr.
Mississippi Department of Environmental Quality
Environmental Permits Division
2380 Highway 80 West
Jackson, MS 39204

RE: Post-Closure Permit Renewal Application
Notice of Deficiency
Koppers Industries, Inc.
Grenada Facility
Grenada, Mississippi
EPA I.D. Number: MSD 007 027 543

Dear Mr. Stover:

On behalf of Beazer East, Inc. (Beazer). Fluor Daniel GTI, Inc. has prepared the following responses to the Mississippi Department of Environmental Quality (MDEQ) correspondence dated July 20, 1998 and received on July 24, 1998 regarding the December 1997 Post-Closure Permit Renewal Application (Application) for the Koppers Industries, Inc. (KII) facility located in Grenada, Mississippi. Per our request on August 7, 1998, MDEQ approved a submittal extension to August 25, 1998 for these responses.

Based on recent conversations with MDEQ, Beazer understands that the Request for Modification of the Post-Closure Care Permit for Closed Surface Impoundment (Fluor Daniel GTI, February 1997) document has not been reviewed by MDEQ. Beazer herein requests that MDEQ review this document prior to issuance of the Permit Renewal as it provides support for the responses set forth in this letter. A copy of the document is provided as Attachment A.

The following responses address MDEQ comments on the Application.

COMMENT #1: E.5d Statistical Procedures

> **MDEQ policy to determine if there has been a release from the facility during detection monitoring is as follows:**
>
> **For compounds that are not naturally occurring and/or those compounds that are not consistently detected in background samples (that is, less than 10% of the data is above the PQL), the following conditions will constitute significant evidence of a release (subject to QA/QC checks and confirmation by retesting) during detection monitoring:**
>
> - **A target compound is detected in a groundwater sample above the PQL in a sampling event;**

637 Braddock Avenue / East Pittsburgh, PA 15112 USA (412) 82[illegible] (412) 824-72[illegible]

- More than one target compound is detected in a groundwater sample above the MDL but below the PQL in a single event;

- A target compound is detected in a groundwater sample above the MDL but below the PQL in two consecutive sampling events;

- A target compound is detected above the MDL and below the PQL, and a review of data shows trends or indications that a release has occurred. Such a review of available data; including graphical and spatial analyses, must be documented by the facility owner/operator either at the next scheduled monitoring event or as otherwise required by permit condition, regulation, or law.

A retest will consist of analyzing two additional samples. Such samples must be collected in independent events. Confirmation of a detect will occur if analyses of either sample collected during the retest detects the compounds found in the original sample. If additional or different compounds are found in a retest further sampling may be necessary to determine if a release of additional constituents has occurred.

Reply: *MDEQ's approach as stated in the comment for determining if a release from the unit has occurred is not in accordance with the Mississippi Hazardous Waste Regulations which incorporate by reference the federal regulations in 40 CFR Part 264.*

Pursuant to 40 CFR 264.97(h), an appropriate statistical method must be used to evaluate the groundwater quality to be protective of human health and the environment, and must comply with the performance standards outlined in Part 264.97(l). The statistical methods proposed in Section E.5d of the Application are from the United States Environmental Agency's (EPA) guidance document, Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (1992). The proposed methods identified in the Application comply with the performance standards outlined in Part 264.97(l), and provide the technical justification for determining if the groundwater quality downgradient of the RCRA-regulated unit has had a significant increase.

Beazer proposes to use the statistical approach set forth in 40 CFR 264.

Comment #2 **E.6b Sampling and Analysis**

Beazer will analyze for constituents listed in 261 Appendix VII - Basis for Listing Hazardous Waste K001 Constituents:

pentachlorophenol	chrysene
phenol	naphthalene
2-chlorophenol	fluoranthene
p-chloro-m-cresol	benzo(b)fluoranthene
2,4-dimethylphenyl	benzo(a)pyrene
2,4-dinitrophenol	indeno(1,2,3-cd)pyrene
trichlorophenols	benz(a)anthracene
tetrachlorophenols	dibenz(a)anthracene
creosote	acenaphthalene

Beazer will continue to collect samples on a semiannual basis.

Beazer will not be allowed to terminate groundwater sampling if demonstrated that the groundwater quality downgradient of the closed surface impoundment has not exceeded background for a period of three consecutive years.

Reply: *Beazer will analyze for the constituents listed in 261 Appendix VIII. However, Beazer maintains that the groundwater sampling should be terminated following the demonstration that the groundwater quality downgradient of the closed SI has not exceeded background quality for a period of three consecutive years.*

In accordance with 40 CFR270.41(a)(2), if information or data that justify a change to a permit condition becomes available after the time of permit issuance, the permittee may request a permit modification. Based on this regulation and the extensive database generated since the issuance of the Permit, Beazer submitted the <u>Request for Modification of the Post-Closure Care Permit for the Closed Surface Impoundment</u> (Fluor Daniel GTI, February 1997). This document provides the technical justification to support a permit modification that reduces the post-closure care period of the closed surface impoundment. In accordance with 40 CFR 264.117(a)(2)(i), the Administrator can shorten the post-closure care period for the hazardous waste unit if it is found that the unit is closed, and if the owner finds that the reduced period is sufficient to protect human health and the environment. As stated in the <u>Request for Modification of the Post-Closure Care Permit for the Closed Surface Impoundment</u>, based on the removal of waste material, capping of the unit in accordance with the closure plan, the subsequent certification of closure, the extensive analytical data base (10 years of monitoring data), and the statistical evaluations completed to date indicating the absence of unit-related constituents in the groundwater, the closed SI has not, and will not, adversely impact groundwater, and subsequently human health and the environment.

<u>Comment #3</u> **<u>Appendix E-5</u>**

2.4 Target Compounds - Beazer will analyze for constituents listed in 261 Appendix VII Basis for Listing Hazardous Waste K001 Constituents.

Reply: *Beazer will analyze for the constituents listed in 261 Appendix VII - Basis for Listing Hazardous Waste K001 Constituents.*

2.7 Schedule - Beazer will not be allowed to terminate groundwater sampling if demonstrated that the groundwater quality down gradient of the closed surface impoundment has not exceeded background quality for a period of three consecutive years.

Reply: *Beazer has petitioned MDEQ as set forth in the regulations to terminate groundwater monitoring if demonstrated that the groundwater quality downgradient of the closed surface impoundment has not exceeded background quality for a period of three consecutive years. Refer to the introduction of this letter and the reply for Comment #2 above.*

4.2.1 Groundwater Level - Groundwater levels must be read to the nearest .01 of a foot.

Reply: *Beazer will read groundwater levels to the nearest 0.01 of a foot.*

5.2.1 Groundwater- Monitoring wells will be sampled semiannually

Reply: *Beazer will sample the monitoring wells semiannually. However, as stated above, if the groundwater quality has not exceeded background quality for three consecutive years, Beazer may reduce the post-closure care period in accordance with 40 CFR 264.117.*

Should you have any comments, questions, or care to have a discussion with the appropriate parties regarding the above information, please do not hesitate to contact Mr. Robert Markwell of Beazer at (412) 208-8812.

Sincerely,
Fluor Daniel GTI, Inc.

Mary Anna Babich

Mary Anna Babich
Project Manager

cc: R. Markwell - Beazer (w/o attachment)
M. Bollinger - Beazer (w/o attachment)
W. Giarla - Beazer (w/o attachment)

P:\PROJECTS\BEAZER\GRENADA\RESPPERM.WPW

Steve

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

RECEIVED
AUG 31 1998
Dept. of Environmental Quality
Office of Pollution Control

AUG 27 1998

4WD-RPB

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: NOTI on the RFI Phase III Report
Koppers Industries/Beazer East
Grenada Plant
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) has reviewed the January 23, 1998, RCRA Facility Investigation (RFI) Phase III Report. Review led to the generation of comments on the report (Enclosure 1). Although there are numerous comments provided, EPA feels that these comments are constructive and designed to explain EPA's general position on remedies and to chart the course for eventual remedy selection at the Koppers' plant. While reading the comments, please keep the following EPA goals for the RFI Report in mind:

1) The report should adequately summarize all of the pertinent work performed to date (i.e., establish complete release characterization).
2) The report's release characterization will be used in the evaluation of the environmental risks posed by media contamination.
3) The report's risk evaluation will establish general Corrective Action Objectives which will be carried over to the Corrective Measures Study (CMS) where further evaluation will occur.

The Agency's review found some areas of contamination which appear to need further soil and groundwater characterization, most notably the need for deeper groundwater assessment. Therefore, the report needs to be revised to propose some additional work. Because natural attenuation data and attendant discussions were included in the RFI Phase III Report, some of the enclosed comments directly or indirectly address the natural attenuation data and/or additional data needs if natural attenuation is to be part of the remedy.

Within sixty (60) calendar days from receipt of this letter, please mail two (2) copies of your response to comments and the revised report or individual pages to Mr. Kumar and one

(1) copy of the require documents to Mr. Cain at the following addresses:

Mr. Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division
U.S. Environmental
Protection Agency
61 Forsyth Street SW
Atlanta, Georgia 30303
ATTN: South Programs Section

Mr. Jerry Cain, Chief
Environmental Permits Division
Mississippi Department of
Environmental Quality
Post Office Box 10385
Jackson, MS 39289-0385
ATTN: Timber and Wood Products
Branch

If there are any questions regarding the enclosures or a desire for a meeting to further discuss the comments, please contact Wesley Hardegree of the South Programs Section (SPS) at (404) 562-8486.

Sincerely,

Ken Williams

for Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

cc: Jerry Cain, MDEQ (with enclosure)
R.D. Collins, Vice President, Koppers Industries (with enclosure)

EPA COMMENTS ON THE RFI PHASE II REPORT
KII/BEAZER EAST - GRENADA PLANT
EDA ID NUMBER: MSD 007 027 543
August 1998

General Comments

The RFI Report is utilized to provide a foundation for determining if further corrective action work, either assessment or remediation, is needed. The following general comments attempt to address some concerns which naturally arise when moving from the RFI to the Corrective Measures Study (CMS).

The first general comment addresses a difference of opinion between Beazer East and EPA on overall strategy and triggers for groundwater remediation. The second comment outlines those corrective action objective (CAOs) which EPA feels need to be carried into the CMS analysis. The third general comment tries to give some direction to what is needed if natural attenuation is to be used as part of the proposed remedy (i.e., identifies some further information/evaluation needs if a remedial alternative which includes-monitored natural attenuation is to be proposed).

General Comment #1: Groundwater Contamination

Based on the extensive groundwater data presented in the report, it is clear that groundwater contamination exceeds respective maximum contaminant levels (MCLs) for several constituents (e.g., benzene, pentachlorophenol). As explained more fully below, exceedance of MCLs in a potential drinking water aquifer negates the underlying position found throughout the report that no action is needed to address groundwater contamination. Specifically, with regard to groundwater, the RFI Report seems to take the position that no current exposure to contaminated groundwater equals no risk; hence, groundwater need not be included in the risk assessment nor remediated. **The facility's overall strategy for future remediation seems to be linked solely to the output of the risk assessment which fails to consider other equally important remediation trigger factors (e.g., the Classification of Groundwater, EPA's Strategy on Groundwater Contamination).**

One aspect of final cleanup levels and risk assessments which requires further clarification relates to how EPA views groundwater contamination and when groundwater remediation is required. In October of 1996, EPA issued a directive entitled *Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water At CERCLA Sites* (Directive 9283.1-12, EPA 540/R-96/023).[1] The groundwater strategy includes the following provisions which are to be applied at all situations where groundwater contamination is present:

1. prevent exposure to contaminated groundwater,
2. prevent further migration of contaminant plume,

1 www.epa.gov/superfund/oerr/gwguide/guidesc.htm.

3. prevent further migration of contaminants from source materials to groundwater, and
4. return groundwater to its expected beneficial uses wherever practicable (aquifer restoration).

The first three criteria are quite self-explanatory and little controversy should erupt over these three requirements. The fourth requirement, however, can be quite contentious. Aquifer restoration, and hence final cleanup levels, is based on relative use and value of groundwater.[2] For EPA, the beneficial use of groundwater is established through the groundwater classification system. In the EPA 1986 guidance entitled *Guidelines for Ground-Water Classification under the EPA Ground-Water Protection Strategy,* EPA outlines a groundwater classification system based on drinking water as the beneficial use of groundwater (Class I, II and III).[3] If the groundwater classification is Class I or II, then promulgated drinking water standards (i.e., MCLs) apply. Beneficial uses of groundwater **other than** drinking water may also exist. For example, groundwater provides baseflow for surface water and/or recharge to other aquifers. These non-drinking water beneficial uses must also be protected.

Although there is a federal classification system, as stated in the *Presumptive Response Strategy* ..."[d]etermination of current and expected future beneficial uses should consider state ground-water classifications or similar designations." Although Mississippi does not have an EPA endorsed Comprehensive State Groundwater Protection Plan (CSGWPP), which could replace the 1986 Classification system, Mississippi has stated that all freshwater aquifers in the State should be protected for drinking water use.

Although restoration of groundwater to drinking water standards is the ultimate remedial objective for EPA cleanups in Class I and Class II aquifers, the timing of when to meet this objective is unspecified. The need for rapid restoration is obvious in contaminated Class I and IIA aquifers because, by definition, Class I aquifers are **special** groundwaters and Class IIA aquifers are **currently** being used as a drinking water source. However, timing or the need for aggressive aquifer restoration is less clear when the aquifer classification is Class IIB. If available, EPA utilizes a state's groundwater resource priorities for those aquifers which have the potential to be used as a drinking water source. As explained in the April 4, 1997, EPA guidance entitled *Role of CSGWPP in EPA Remediation Programs* (OSWER Directive 9283.1-09), establishment of groundwater priorities can lead to an

2 Groundwater is valued in three ways: 1) current use, 2) future or reasonably expected use, and 3) intrinsic value.

3 **Class I** - Special Groundwater
Class IIA - Current Source of Drinking Water
Class IIB - Potential Source of Drinking Water and Water having other Beneficial Uses
Class III - Not a Potential Source of Drinking Water

overall strategy for addressing groundwater contamination. Such a strategy should take into account parameters such as:

1) the expected time frame of future use;
2) likelihood of use within a certain time period;
3) relative priority or value;
4) relative vulnerability of groundwater.

Once an assessment utilizing these parameters has been completed, the urgency of restoring a Class IIB aquifer can be better gauged and timing of remedial solutions designed for aquifer restoration can be determined. **Hence, it is at this point in the corrective action process that cleanup levels can selected or, if needed, calculated given the groundwater classification(s) applicable to the site.** Note that risk management decisions in EPA Region 4 have resulted in final cleanup levels at MCLs, when available, and appropriate media concentrations which meet the overall remediation trigger level and/or any applicable state remediation requirements (see the November 1995, EPA Region 4 Risk Bulletins - No. 5 and the April 22, 1991 OSWER Directive 9355:0-30; Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions).

Summary Point: The contaminated groundwater at Koppers meets Class II criteria. The Corrective Action Objectives (CAOs) for groundwater must address the full EPA Groundwater Strategy (also see General Comment #2). EPA recognizes that complete aquifer restoration throughout the plume may not be possible at the Koppers facility due to the presence of subsurface dense non-aqueous phase liquids (DNAPLs) (see General Comment #3).

General Comment #2: Corrective Action Objectives (CAO)

In several places within the report, Beazer East states its Corrective Action Objective (CAO) for the CMS (e.g., Section 6.2, page 6-8). The only CAO proposed by Beazer East is to "manage DNAPL to the extent technically practical to mitigate discharge to the Central Ditch." EPA disagrees with limiting the CAO to just controlling DNAPL migration to the creek. The RFI Report needs to reflect or acknowledge the CAOs for all contaminated media (i.e., groundwater, soil, sediment and surface water). For example, EPA's main CAOs for each contaminated medium include the following general points:

1. Control Exposures (i.e., abate current risk, install and maintain long-term exposure controls),
2. Attain Media Cleanup Standards (including standards to cover long term cleanup (e.g., aquifer restoration),
3. Perform source control (including both source removal and elimination or minimization of contaminant migration)

The report must be revised to acknowledge these general CAOs and to briefly apply these CAOs to every contaminated medium at the Koppers facility (e.g., exposure control of onsite groundwater contamination will be addressed by institutional controls; groundwater restoration will be sought for all or part of the plume; groundwater migration will be halted, especially where aquifer restoration is not possible). Details on how these general CAOs will be satisfied at this facility can be further delineated in the CMS.

General Comment #3: Natural Attenuation

a) EPA suspects that Beazer East will utilize a combination of exposure control and natural attenuation as the remedial alternative of choice for groundwater. Because of the ongoing interest in natural attenuation, or more accurately, monitored natural attenuation, EPA Headquarters and EPA Region 4 have both recently issued guidance on this subject.[4] Region 4's guidance contains practical guidance on demonstrating that monitored natural attenuation is applicable at the facility. As stated in the National Contingency Plan (NCP) and reiterated in the Region 4 guidance on page 1, monitored

> "[n]atural attenuation is generally recommended only when active restoration is not practicable, cost effective or warranted because of site-specific conditions (e.g., Class III ground water or ground water which is unlikely to be used in the foreseeable future and therefore can be remediated over an extended period of time), or where natural attenuation is expected to reduce the concentration of contaminants in the ground water to the remediation goal levels determined to be protective of human health or sensitive ecological environments in a reasonable time-frame. Further, in situations where there would be little likelihood of exposure due to the remoteness of the site, alternate points of compliance may be considered, provided contamination in the aquifer is controlled from further migration. The selection of natural attenuation by EPA does not mean that the ground water has been written off and not cleaned up but rather that biodegradation, dispersion, dilution, and adsorption will effectively reduce contaminants in the ground water to concentrations protective of human health in a time frame comparable to that which could be achieved through active restoration (p. 8734)."

Before natural attenuation is proposed as a remedy or part of the remedy, Beazer East will have to "...assess the contributions of sorption, dilution, and dispersion to natural attenuation of contaminated groundwater, [and demonstrate] a very detailed understanding of aquifer hydraulics, recharge and discharge areas and

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4 a) Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (Draft OSWER Directive Number 9200.4-17).

b) Draft EPA Region 4 Suggested Practices for Evaluation of a Site for Natural Attenuation (Biological Degradation) of Chlorinated Solvents (see www.epa/region4/wastepgs/aftecser/aftecser.htm).

volumes and chemical properties..." (Headquarters guidance on Natural Attenuation). To aid in this analysis, the Region 4 guidance lists three (3) lines of evidence which can be used to get at biological degradation:

1. observed reduction in contaminant concentrations along the flow path;
2. documented loss of contaminant mass (e.g., decreasing parent compound concentrations, increasing daughter compound concentrations, depletion of electron acceptors and donors, etc.);
3. microbial laboratory or field studies.

For every monitored natural attenuation remedy, at least the first two lines of evidence are needed. The second and third lines of evidence provide important rate constants. The report submitted by Beazer East does not directly address in detail any of these lines of evidence. However, on page 4-23, the report does state that "[t]he nutrient concentrations for all the 1997 samples are relatively low which could limit the rate of indigenous biodegradation."

Summary point: Evaluating the effectiveness of biodegradation requires the quantification of groundwater flow, solute transport and transformation processes, including **rates** of natural attenuation. If natural attenuation is to be proposed as a remedy or part of a remedy, then the protocol outlined in the Region 4 guidance should be reviewed and followed as needed to meet the general guidance offered in the draft Headquarters Guidance on Monitored Natural Attenuation (i.e., Beazer East needs to approach each main constituent or constituent group and apply the three (3) Region 4 lines of evidence to support natural attenuation). **If natural attenuation is to be part of any future remedy, then a long term monitoring program should be established now.**

b) Since Beazer East will apparently place emphasis on natural attenuation, the following are some issues which must be addressed in any future proposed remedy which includes monitored natural attenuation as a component to the remedy.

The EPA Headquarters Guidance on Monitored Natural Attenuation makes some clear statements on groundwater and the role of natural attenuation in cleanup. For example:

> "Contaminated groundwater should be returned to their "beneficial uses" wherever practicable, within a time frame that is reasonable given the particular circumstances. When restoration is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated groundwater and evaluate further risk reduction.""

> "Source control actions should use treatment to address "principal threat" wastes wherever practical, and engineering controls such as containment for wastes that pose a relatively low long-term threat or where treatment is impracticable."

Clearly, remediation or, when applicable, containment of the contamination sources is critical to the success of aquifer restoration efforts. Beazer East will have to delineate zones of groundwater remediation (i.e., DNAPL zone - groundwater containment; Residual DNAPL zone - aquifer restoration or groundwater containment; Dissolved Phase zone - aquifer restoration).

c) The Beazer East report fails to adequately consider onsite soil contamination and its potential to impact groundwater quality (CAO - source control; see General Comment #2). As stated in the EPA Headquarters' guidance, "Contaminated soil should be remediated to achieve an acceptable level of risk to human and environmental receptors, and to prevent any transfer of contaminants to other media that would result in an unacceptable risk or exceed required cleanup levels." Furthermore, the need for source control extends beyond the concern over controlling any unacceptable soil leaching which is occurring. For example, detectable flowing DNAPL should be removed from wells or other technologies used to remove subsurface DNAPL. Containment of further subsurface DNAPL migration, especially into the Central Ditch - as already proposed - is also warranted.

Specific Comments

Specific Comment #1: Executive Summary, pages ES-3 and 4
Section 4.5 Natural Attenuation Potential

Beazer East seems to base its natural attenuation argument on three lines of evidence (see page ES-3 and 4):

1) low concentrations in all media of pentachlorophenol, which readily bioderades and benzene, which volatilizes and biodegrades,
2) a substantial decrease in groundwater impacts near detection limits within approximately 450 feet from the source areas,
3) a relatively small areal extent of the groundwater impacts, given more than 90 years of site operation and an average groundwater flow velocity of 0.11 ft/day for the Upper Sand Zone (the shallowest aquifer unit).

With regard to these lines of evidence, EPA does not consider a 900 ft by 600 ft pentachlorophenol plume with concentrations well above the pentachlorophenol MCL in both the Upper Sand Zone and Lower Sand Zone to be small or the concentrations low. Neither does EPA consider a 1,650 ft by 700 ft benzene plume in the Upper Sand Zone and a 1,500 ft by 900 ft benzene plume in the Lower Sand Zone with concentrations well above its respective MCL to be small or the concentrations low. The same can be said for the plume designated by Total PAHs. Furthermore, EPA is quite concerned with the fact that all of the main constituent plumes have migrated offsite.

The decrease in concentrations provide part of the information needed for the first line of evidence listed by Region 4's Guidance on Monitored Natural Attenuation. Another component in addition to chemical data is geochemical data (e.g., depletion of electron acceptors and donors, increasing metabolic byproduct concentrations or conservative tracer data which can be used to calculate biological decay rates). EPA fails to see substantial decreases relative to detection limits within 450 ft from all source areas (i.e., Wastewater Treatment System, Central Processing Area, Drip Track Area). Admittedly, there is a point where the contamination decreases, but it is not 450 ft for every constituent of concern and major source areas.

With regard to Beazer East's third line of evidence, the long length of facility operations coupled with the high concentrations still observed at the site strongly suggests that a substantial subsurface source remains. For example, the mere fact that benzene, a most highly biodegradable volatile, is still present well above its MCL is evidence enough that natural attenuation is limited due to the existence of a continuing source(s).

Summary point: From the three lines of evidence provided by Beazer East, EPA concludes that natural attenuation is worthy of further analysis, if needed. If natural attenuation is to be proposed as a remedy or part of a remedy, then evaluation of natural attenuation will have to be expanded on pursuant to the Region 4 and Headquarters's Guidance (see General Comment #3).

Specific comment #2: Section 2.4.1 Regional Hydrogeology, page 2-11

The report mentions that "...the potentiometric surface in the deeper aquifers [Meridian-Upper Wilcox aquifer] may have been lowered by withdrawal from wells in the vicinity of the Site during recent years." The report fails to mention in Section 2.4.1 where these wells are located. Furthermore, Section 5.1.1 mentions that no wells are known to exist in the vicinity of the site. However, the report fails to mention what evidentiary sources were used to make this determination or what distance was evaluated.

Figure 3-3 from the **Phase II** RFI Report does present water supply wells for the surrounding area. However, all of the wells are not identified in the legend. Furthermore, the zone each well is pulling from is not identified. Where are the "town wells" for Tie Plant and Grenada? Figure 3-3 mentions a Tie Plant School well, but not water supply wells strictly listed for Tie Plant. If EPA is reading the Figure's notes correctly, the USGS is the source of the data on Figure 3-3. Is this correct? If so, then the data is 15 years old. Has there been an update to the well survey in the ensuing 15 years?

Summary Point: The report must be revised to include a complete well survey which is based on the survey from the Phase II RFI Report. The well survey should be updated if existing data is in fact 15 years old.

Specific Comment #3: Section 3.1.3, page 3-7

The report must be revised to reflect the conditions which existed when the surface water samples were collected. Was the ditch running under baseflow conditions or had there been a recent storm event?

Specific Comment #4: Section 3.1.4.3 Constant Rate Test, page 3-10
Section 4.3.2 Constant Rate Aquifer Test, page 4-13

The RFI Phase III Report should include a potentiometric map to present the drawdown measured in the monitoring wells during the pump test. This will show pictorially what the zone of influence looked like during the test. It also might visually identify a zone of higher conductivity along the Central Ditch. This type of representation will be useful in visualizing the effect of a pump and treat remedial system aimed at either aquifer restoration or containment.

Specific Comment #5: Section 4.1.2.1 Central Process Area, page 4-4

As some location within the RFI Report, details of the soil removal which took place at the Central Process Area must be provided (e.g., volume of soil removed, any confirmatory sampling data).

Specific Comment #6: Section 4.1.2.3 Drip Track Area (SWMU 8), page 4-5

a) Was there any removal of contaminated soil prior to the installation of the new drip pad? If so, please explain this removal action in the RFI Report.

b) In the past, the treatment cylinders opened at both ends. Drip Track sampling to date has focused on the northern drip track. EPA can find only a few soil samples at the southern track (e.g., S-7). EPA questions whether there is enough soil characterization on the south end of the treatment cylinders. For example, given that visually impacted soil was noted at the "northern" Drip Track Area to a depth of 26 feet bgs, EPA is concerned that the south drip track, along with the Drip Track Area, the Former Wastewater Treatment System and the Central Process Area, may be an additional source which could continue to contaminate groundwater.

Summary point: The report must be revised to include proposals for further soil sampling in this area as needed. The sampling must provide some indication of soil concentrations and DNAPL occurrence within the southern drip track.

Specific Comment #7: Section 4.6.2 Central Ditch, page 4-24

EPA is concerned with the surface water concentrations in the Central Ditch. The concentrations could be from at least three different sources. First, the surface water concentrations could be from discharging contaminated groundwater. Second, the surface water concentrations could be from contaminated surface runoff or, less likely if proper sampling procedures were followed, from contaminated sediment disturbed during surface water collection. These three sources may be acting independently or in conjunction with each other to raise surface water concentrations. Based solely on the location of the highest contaminated samples to date, surface water contamination seems to be best correlated with discharging contaminated groundwater.

Summary point, As part of future remedial effectiveness monitoring, the surface water must be analyzed to see if the groundwater concentrations decrease along the Former Wastewater Treatment System.

Specific Comment #8: Section 4.7.1 Northern Stream, page 4.25

EPA is not fully satisfied with the benchmark utilized for ecological screening (see Risk Comment #17). Therefore, the sediment contamination in the northern stream is still an ecological concern for EPA deserving further attention. The risk assessment must also be revised to include a residential scenario for exposure to the contaminated sediment.

Specific Comment #9: Section 4.8 Updated Site Conceptual Model, page 4-29

The report states that the Upper Low-Permeability Zone impedes the downward migration of DNAPL. This statement seems to be based on the fact that only one location has been measured with DNAPL below the Upper Low-Permeability Zone. According to Figures 6-4 through 6-8 in the Interim Measures Predesign Report, there are several locations where DNAPL or its residual signature have migrated into and below the Upper Low-Permeability Zone (e.g., D96-5, R96-10, R-12C and R96-12). Furthermore, NA-2 and NA-3 both indicate DNAPL at a depth of 35 and 38 feet below land surface, respectively. This depth would place the observed DNAPL just below the Upper Low-Permeability Zone. Table 3-11 also lists DNAPL measured in wells within the Lower Sand Zone. EPA concludes that DNAPL has migrated through the Upper Low-Permeability Zone and contaminated the Lower Sand Zone to an extent previously unacknowledged by Beazer East.

Summary point: The report's text must be revised to more accurately reflect the actual location of DNAPL measured in wells, the points and locations where DNAPL/residual DNAPL was encountered during well installation. This presentation should conclude with a complete analysis of the overall depth of DNAPL's vertical migration relative to local stratigraphy. Some of the key cross sections from the Interim Measures Report should also be included in this RFI Phase III Report (also see Specific Comment #12).

Specific Comment #10: Section 4.8.2 Potential Source Area, page 4-29

The report focuses on exposure control and fails to acknowledge that source control is important. For example, the report mentions that migration to groundwater is a concern. However, the report only views soil contamination as a medium to which to apply exposure controls. The report fails to fully verify that remaining contamination in the soil is not acting as a continuing source for groundwater contamination. In fact, soil contamination seems to be quite widespread, and this contaminated soil might be acting as a source to contaminate groundwater.

Summary point: The report must consider soil contamination as a potential source of further groundwater contamination. The report must provide quantitative evaluation of the extent to which the soil is or is not contaminating underlying groundwater.

Specific Comment #11: Section 4.8.3, page 4-31

The report states that "[i]t is apparent that natural attenuation has significantly limited, and stabilized, the dissolved plumes, given the 90 year history of plant operations and groundwater flow velocity of 0.11 ft/day." If contamination at the location of the treatment cylinders, a likely point of initial contamination, reached the groundwater within the first year of operation, then groundwater contamination should have migrated horizontally 3,722 ft. Pentachlorophenol, benzene and total PAHs have actually migrated horizontally approximately 900 ft, 1,500 feet and 1,500 ft, respectively. These constituents have also migrated vertically. Although EPA acknowledges that natural attenuation is worth further analysis, EPA is unable to concur with the statement that natural attenuation has "stabilized" the dissolved plume. There simply is not enough monitoring data available to draw this conclusion.

Summary point: Until natural attenuation is evaluated further, the RFI Report should caveat any concluding-type statements on the success of natural attenuation with statements that additional analysis of any remedy which includes a natural attenuation component will be studied as part of the Corrective Measures Study (CMS).

Specific Comment #12: Figure 2-5

This figure fails to capture the complete complexity of the Upper Low Permeability Zone. For example, R96-14/15 failed to detect the Upper Low Permeability Zone, and the Upper Low Permeability Zone is absent both to the northeast of the Former Wastewater Treatment System and under (?) and the south of the Central Ditch. None of this complexity is adequately reflected in Figure 2-5. From Figure 6-5 (Interim Measures Pre-design Report), EPA also questions the interpretation that the Upper Low Permeability Zone exists from R96-6 to R96-18. Note that the section from R96-6 to R96-18 also corresponds to an area where DNAPL is present within the Upper Low Permeability Zone. Basically, it looks like the Upper Low Permeability Zone is less pronounced along Section D-D', and more distinguishable along a portion of Section C-C'.

Summary point: The report's summary discussion on the Low Permeability Zone must be updated to include the valuable information contained in the Interim Measures Predesign Report. This includes adding Figures 6-4 through 6-8 from the Interim Measures Predesign Report. The report must acknowledge the limited ability of the Upper Low Permeability Zone to completely stop DNAPL migration (also see Specific Comment #9).

Specific Comment #13: Figure 4-2 - Pentachlorophenol in Soil
Figure 4-3 - Total PAHS in Soil

a) In order to enhance the existing presentation of the extent of contamination and risks posed by pentachlorophenol and other constituents in surface soils, the following presentation should be added to the report. Contours based on industrial risk levels (i.e., 10-4 to 10-6 risk levels) should be drawn for each constituent or groups of constituents. Note that there seems to be a hotspot near some of the workup/raw material storage tanks in the Central Processing Area.

b) In reference to the Central Process Area and Drip Track Area, the report states on pages 4-4 and 4-5, respectively, that "[v]isually impacted soils were noted to extend from the surface to that saturated zone in many of the borings." EPA was unable to find the boring logs for those borings which detected visual contamination. In order to more fully present the soil characterization data shown on Figures 4-2 through 4-4, a figure must be developed which indicates every location where visually contaminated soil was noted per depth. Color contours for visually impacted soils, as included in the Phase II Report, should also be presented.

Specific Comment #14: Figure 4-8

Figure 4-8 shows the DNAPL measurements as of May 1997. However, other DNAPL has been identified by earlier measurements (see the summaries on pages 2-20 and 2-21). A historical summary of which wells contain measurable DNAPL must be provided in the revised report. This information will be useful in appraising the significance of those wells which in 1997 were "not measured" for DNAPL. Information on DNAPL occurrence will also be useful in meeting the source removal CAO. Figure 4-8 must be revised to distinguish between Upper and Lower screened wells.

Specific Comment #15: Constituent Figures 4-11 through 4-16

Only characterization figures for benzene, pentatchlorophenol and total PAHs were generated. However, toluene, xylenes and ethylbenzene were also detected in groundwater. In order to see the areal distribution of these constitutes, the report must be revised to include characterization figures for these three constituents.

Specific Comment #16: Figure 4-12

Beazer East offers a qualitative explanation for differences between contaminant concentrations and extent in the Upper Sand and Lower Sand Zones. EPA fails to see significant differences in concentration and extent between benzene and total PAHs in the Upper and Lower Sand Zones which require great explanation. However, EPA is interested in why benzene is migrating to the Lower Sand Zone in concentrations basically equivalent to that found in the Upper Sand Zone while pentachlorophenol is not. Beazer East attributes the decrease of pentachlorophenol between sand zones to a more rapid biodegradation of pentachlorophenol when compared to the biodegradation of benzene and total PAHs. Alternatively, benzene could be associated with the DNAPL and/or pentachlorophenol could be adsorbed in the Upper Sand Zone because pentachlorophenol has a higher Kow (5.01) than benzene (2.13).[5] However, the supposition that the benzene might be present in the DNAPL is not supported by the sole DNAPL sample analyzed in the laboratory. This DNAPL sample indicated the presence of pentachlorophenol but not benzene. Is it possible that the Lower Sand Zone's geochemistry is so different from the Upper Sand Zone that biodegradation of pentachlorophenol is occurring in the Lower Sand Zone but not benzene?

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5 Natural attenuation processes include a variety of physical, chemical or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. The in-situ processes include biodegradation; dispersion, dilution, sorption; volatilization; radioactive decay; and chemical or biolgoical stability, transformation, or destruction of contaminants. When relying on natural attenuation processes for site remeidtion, EPA prefers those processes that degrade contaminants; hence contaminant migration must be low.

Summary point: In any natural attenuation remedy, further analysis will be needed of the fate and transport differences between pentachlorophenol, benzene and total PAHs in all monitored water bearing zones.

Specific Comment #17: Figure 4-15

Generally speaking, the high molecular weight PAHs tend to have low aqueous solubilities so they usually do not travel far from the initial site of contamination. Is this the case at this facility? In partial response to this question, plots of specific "tracer" PAH constituents must be generated to add to the information already provided by the total PAH plot shown in Figures 4-15 and 4-16. Such plots will give an indication of which PAHs are present in the groundwater and where they are located. This will compliment the existing oxygen data. For example, degradation of the initial pulse of released PAHs by native organisms can deplete the dissolved oxygen in the aquifer so that conditions for further degradation become anaerobic. Note that compounds such as naphthalene, anthracene, and phenanthrene are-relatively easily degraded aerobically whereas compounds like pyrrole and pentamethyl carbazoles degrade more slowly. These five constituents should be included in plots of specific "tracer" PAHs.

Specific Comment #18: Figure 4-13

Given the fact that benzene contamination has reached to at least the location of well cluster GW-7 (37 ppb - Upper Sand Zone; 34 ppb Lower Sand Zone), why was the geoprobe sampling not extended beyond the location of well cluster GW-7 in order to determine extent of contamination above benzene's MCL (i.e., 5 ppb)? A proposal must be included in the report which characterizes the extent and scope of downgradient groundwater contamination in all water zones.

Specific Comment #19: Figure 4-14

The Lower Sand Zone is approximately 30 feet below land surface at the Former Wastewater Treatment System and approximately 132 to 138 feet thick (see page 2-9). Most of the wells in the Lower Sand Zone only cover the upper 10 to 20 feet of the Lower Sand Zone. Given that wide contamination has been detected in the upper part of the Lower Sand Zone, EPA is concerned about groundwater quality deeper within the Lower Sand Zone. Despite the fact that DNAPL contamination within the confines of the Lower Sand Zone has been established by borings and wells (e.g., CPT series, D96-5, R96-12) and the fact that groundwater quality has been shown to exceed certain MCLs, little deep groundwater sampling within the Lower Sand Zone seems to have occurred. Unless more groundwater data on the deeper sections of the Lower Sand Zone are already available, deeper characterization is needed.

Summary point: A proposal must be included in the RFI Report to address vertical migration and characterization of groundwater contamination. This includes proposals for deeper groundwater sampling within the Lower

Sand Zone.

Specific Comment #20: Figures 4-13 through 4-19

There are no boundary "Non-Detect" wells to the southeast on which to base the 5 ppb contour line drawn in Figure 4-13 or, for that matter, similar contour lines in Figures 4-14 through 4-19. The report must be revised to include hatched lines to indicate the lack of information or areas where assumption have been made. This type of presentation may identify areas where characterization is incomplete.

Specific Comment #21: Figure 4-17 and Section 4.5 Natural Attenuation, page 4-23

a) With regard to pentachlorophenol, biodegradation is performed aerobically and anaerobically, and under certain conditions biodegradation can be a part of a remedy. Evaluation of natural attenuation as a remedy must address both of these mechanisms. For example, in order to understand what happens to pentachlorophenol that has been subjected to anaerobic conditions in an aquifer, a description of the transport and fate of pentachlorophenol and all eleven daughter products should be presented and additional sampling plans proposed as needed. For example, under anaerobic conditions transformation has been shown to go to trichlorophenol and tetrachlorophenol. Reductive dechlorination has also been identified to produce 2,3,5,6-tetrachlorophenol, 2,3,5-trichlorophenol, 3,5-dichlorophenol, 3-chlorophenol and phenol. Any natural attenuation demonstration should investigate the transformations of pentachlorophenol. This description may include modeling that includes transport, sorption/desorption rates, and anaerobic degradation.

Note that at the fringe areas of the anaerobic plume, where oxygen penetrates and the anaerobic bacteria are sparse, pentachlorophenol and its daughter products are degraded aerobically. Rates of aerobic degradation of pentachlorophenol and the eleven daughter products have been determined using acetate as the substrate. The rate of degradation is inversely proportional to the amount of chlorine present in the compounds - the more chlorine present, the slower the rate of degradation.

b) The report must be revised to contour oxygen content for each aquifer separately.

c) Although the low microorganism plate counts and low dissolved oxygen strongly indicate that aerobic degradation is limited, the report fails to present a demonstration that anaerobic degradation is occurring. The report must be revised to include more detail on natural attenuation. For example, Figure 4-17 shows oxygen concentrations in groundwater. Generally, oxygen concentrations greater than 1 ppm O_2 is aerobic and less than 1 ppm O_2 anerobic. However, the concentrations between 0.5 and 1 ppm is a gray area. The O_2 concentrations in the aquifer make EPA question whether aerobic biodegradation is occurring. It may have occurred in the past and depleted the electron acceptor (oxygen) to the point where another biodegradation process may take over (e.g., methanogensis). This is a crucial point because it is possible that the ongoing source of benzene will not be further biodegraded near the source because of a lack of electron acceptors or a lack of anerobic biodegradation. However, at the edge of the plume where the aquifer becomes more aerobic, more aerobic treatment occurs.

EPA notes that the half-lives of many PAHs are long. Hence, intrinsic biological degradation may not be reasonable. If concentrations of PAHs are found to be decreasing at a site, an interpretation which is currently unclear at Koppers given the lack of long term groundwater monitoring data, then the facility should identify the mechanism(s) at work. EPA suspects that adsorption or advection/dilution are probably more important for PAHs than biodegradation. However, for PAHs, biodegradability is inversely related to the number of aromatic rings and the number of alkyl groups, which affects their solubility and thus, bioavailability. Compounds such as naphthalene, anthracene,and phenanthrene are relatively easily degraded aerobically whereas compounds like pyrrole and pentamethyl carbazoles degrade more slowly. The presence of insufficient quantities of electron acceptors (e.g., oxygen) in the area of contamination largely limits the rate of biodegradation and so it is not surprising that breakdown of creosote is significantly retarded or nonexistent in anaerobic environments. However, transformations of oxygen containing aromatics is known to occur under methanogenic, denitrifying, and sulfate reducing conditions.

d) Since natural attenuation will apparently be a component of Beazer East's groundwater remedial plan, a long-term monitoring plan must be proposed. Groundwater under this plan should be sampled for at least the following parameters: dissolved oxygen (DO), oxidation-reduction potential, pH, temperature, conductivity, alkalinity, nitrate, sulfate, sulfide, ferrous iron, carbon dioxide, methane and chloride. There needs to be a good background well set up to determine these parameters. Note that R-10 and R-10B may be fairly good background wells. The O_2 concentrations in these wells are the highest reported onsite. DO less than background levels is indicative of anaerobic biodegradation through denitrification and sulfanogensis. A data base must be created from which a contour map of bioedegradation can be generated (e.g., aerobic, anaerobic denitrrification, anaerobic sulfanogensis, etc.).

Summary point: The report can update some of its data presentation on natural attenuation. If natural attenuation is to be pursued as the remedy or part of the remedy, then a more detailed constitute analysis must be performed, including long-term monitoring.

Specific Comment #22: Table 1.1

This table reflects that of the SWMUs identified to date, the earliest operating date for any SWMU is 1970. What were the waste management practices prior to 1970 dating back to startup which occurred in 1904?

The RFI Report should also acknowledge the presence/location of the solid waste management units recently identified in the draft HSWA Permit.

Specific Comment #23: Appendix EE, Boring Logs

Where is the location of the NA series of wells, particularily NA-2 which noted DNAPL and NA-3 which noted creosote odor?

EPA COMMENTS ON SECTION 5
(RISK ASSESSMENT)

RISK GENERAL COMMENTS

Risk Comment #1

In January 1998, EPA issued Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part D). RAGS Part D's goal is to assist facility coordinators, risk assessors and members of the public by standardizing risk assessment planning, reporting and review. Although EPA recognizes that the risk assessment was written prior to release of the recent EPA guidance and EPA cannot require that RAGS Part D be followed in full or partially, EPA believes that use of the summary tables (see Tables 1 through 10.1) could make presentation of the risk assessment more transparent and straightforward for all involved. Please consider using the summary tables in RAGS Part D. Example tables are also provided in the EPA Region 4 Human Health Risk Assessment Bulletins, October 1996.

Risk Comment #2

Section 5 of the report is entitled "Baseline Human Health Risk Assessment and Preliminary Ecological Evaluation." A Baseline Risk Assessment analyzes the main exposure scenarios assuming the site is completely uncontrolled (assumes no remediation in place and no institutional controls). In fact, the report states on page 5-1 that "[t]he purpose of the human health evaluation is to estimate potential risks to human health, if any, that may be posed by the Site assuming that no remedial action is undertaken." However, the submitted risk assessment does not analyze the risk for an uncontrolled, unremediated site. Rather, exposure scenarios or controls are assumed to exist and serve as a basis for removing certain exposure pathways from further analysis. Although a valid site specific approach, such an analysis does not constitute a **Baseline** Risk Assessment (also see Risk Comments #3 and #4). Instead, EPA believes that the risk analysis performed by Beazer East could more accurately be termed a Site-Specific Risk Assessment.

Summary point: Just because there is an agreement to limit the exposure pathways covered under a Site-Specific Risk Assessment does not automatically mean that that pathway is eliminated from risk management opportunities during remedy evaluation (also see General Comment #2).

Risk Comment #3

During the identification of potential exposure scenarios (Sections 4.8.4 and 5.1.3.1) and several other areas of the Baseline Human Health Risk Assessment (BHHRA), it is noted that Koppers Industries, Inc., the Co-Permittee who is onsite and operating the treatment of railroad ties, has no plans to cease operations at the Grenada facility site, to install a groundwater well in the foreseeable future, or to conduct construction activities which would excavate subsurface soil. Therefore, the only potential current and future exposure scenario, a local resident teenage (age 10 to 18) trespasser, is consistent with the current and future use of the property as an operating wood-treating facility.

U.S. Environmental Protection Agency (EPA) Region 4 human health risk assessment guidance (Human Health Risk Assessment Bulletins, October 1996) suggest that a future residential scenario be included in the baseline risk assessment unless there is strong reason to do otherwise and prior approval from the EPA Facility Coordinator in consultation with the Office of Health Assessment (OTS) should be obtained. In other words, unless there is a restriction on future land use on the property precluding the future residential scenario from evaluation, the BHHRA must evaluate this scenario. EPA envisions that the effective HSWA Permit will serve as an acceptable enforceable institutional control from which to monitor future land use at the Koppers facility. Therefore, EPA is willing to allow the residential land use scenario to be dropped from the onsite risk assessment. At the time of remedy evaluation, EPA and Koppers/Beazer East can discuss risk management measures to preclude residential scenarios from occurring (see General Comment #2). **However, because of the absence of offsite exposure restrictions, the risk assessment must include an analysis for current and future contact to all offsite contamination (e.g., groundwater, sediment) using the residential land use scenario.**

Additionally, the BHHRA indicates that the lateral and vertical extent of constituent impacts in soils, groundwater, surface water, and sediments have been sufficiently defined for the risk assessment. However, only soil, surface water, and sediment were quantitatively assessed for the potential receptor because it was considered highly unlikely that the groundwater would be used as a drinking water source and, therefore, not a complete exposure pathway. From the available groundwater analytical data presented in the document, benzene, pentachlorobenzene, total polyaromatic hydrocarbons (PAHs), and carcinogenic PAHs exceeded their respective maximum concentration levels (MCLs) by orders of magnitude, indicating that there is potential concern if these constituents are consumed by human receptors. Koppers Industries, Inc. needs to defensibly demonstrate that onsite and offsite groundwater use now and in the future will not occur by implementing institutional controls (e.g., a restricted covenant) that precludes groundwater use. Although Koppers does control well installation onsite and the information supplied to EPA indicates that no one is utilizing groundwater wells within the known plume area, there is a substantial groundwater plume which has migrated offsite, and hence is beyond Koppers' control. **Because of the absence of exposure restrictions for the offsite portion of the plume, current and future contact (e.g., ingestion) to groundwater is required in the risk assessment to evaluate upper-bound estimates of risk.**

Note that elimination of groundwater from some risk analysis does not negate the need to pursue EPA's groundwater strategy and remedy evaluation criteria. For example, exposure controls for groundwater are needed to eliminate groundwater from the risk assessment and to meet the mandate to protect human health and the environment found in both the first component of the groundwater protection strategy and the first threshold criteria for remedies (see General Comment #1).

The BHHRA excluded the quantitative evaluation of subsurface soil because the facility is not planning on any construction activities in the future. If Koppers Industries, Inc. intends to restrict land use in certain areas where high levels of contamination in the subsurface soil were detected, this needs to be clearly stated in the document and direct contact to subsurface soil need not be evaluated. **In the absence of such restrictions, EPA typically considers future contact to subsurface soils to evaluate upper-bounds estimates of risk.**

Risk Comment #4

An on-site current and future worker was excluded from the quantitative risk assessment because they "...are protected from direct contact by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) which requires them to wear long pants, long-sleeved shirts and gloves as well as additional protective equipment." Citing FIFRA implies that the only onsite workers would be those applying pesticides. This is not accurate. In addition, the use of personal protective equipment (PPE) for on-site workers is a risk management measure. There is always the potential for an on-site worker to not wear the proper PPE, or not wear the PPE properly, or the PPE may malfunction (e.g., gloves tear). **The potential exposure routes due to an onsite worker's exposure to all contaminated media (e.g., surface soil, subsurface soil, groundwater, surface water, sediment) must be evaluated under both the current and future scenarios to determine upper-bound risk estimates.** At the time of remedy evaluation, Koppers/Beazer East and EPA can discuss risk management measures such as the use of PPE.

Risk Comment #5

The BHHRA indicates that the potential intake rates, exposure frequencies and duration assumed in the risk assessment were very conservative. This is not necessarily a correct statement in comparison with a future residential family exposure. When a comparison was made of the conservativeness of the trespassing teen versus a residential family, the exposure intake was 1000 fold greater for the child resident and 100 fold greater for an adult resident. While the resident teenage trespasser scenario did not result in total hazard indices greater than one and estimated potential carcinogenic risks were within the EPA's target risk range (1E-06 to 1E-04), it appears that the resident family receptor would result in unacceptable risk and hazard.

Additionally, EPA Region 4 Human Health Risk Assessment Bulletins recommend evaluating an adolescent trespasser aged 7-16 (10-year exposure duration) with a body weight of 45 kg as representative of this age range. A recommended surface water ingestion rate (while swimming) of 50 mL/hour is also recommended for this receptor by both U.S. EPA RAGS and EPA Region 4 Human Health Risk Assessment Bulletins. The BHHRA quantitatively evaluated a teen trespasser from age 10 to 18 (exposure duration of 8 years) and an average body weight of 50 kg. A surface water ingestion rate of 10 mL/hour was assumed (see page 5-18) cited as based on the RCRA Facility Investigation (RFI) guidance (EPA, 1989a). No surface water ingestion rate was recommended in the RFI guidance, nor was the body weight assumption for children in this age group as also cited on page 5-18. The cited reference for the trespassers body surface area could not be obtained and the presented values could not be verified. It was not justified why a document which is not EPA guidance would be used when more recent EPA documents are available (i.e., Exposure Factors Handbook August 1997, Dermal Exposure Assessment January 1992).

The BHHRA exposure parameters for the adolescent trespasser receptor are less conservative than those recommended by both the U.S. EPA RAGS and the EPA Region Human Health Risk Assessment Bulletins. Koppers Industries, Inc. must provide solid justification for assuming less conservative exposure parameters and the use of not current or non-EPA recommended exposure parameter. Alternatively, Koppers must reevaluate the adolescent trespasser receptor with the recommended exposure parameters. For example, the skin surface areas, body weight, soil and water ingestion rates do not reflect current EPA recommended values. Additionally, correct citations must be provided for exposure parameters.

Risk Comment #6

The document presented the analytical data from 1991 and 1997 sampling events in different tables and in different formats making it difficult to follow how the exposure point concentrations were determined for use in the risk assessment (Tables 5-11, 5-12, and 5-13). Koppers Industries, Inc. must present the analytical sampling results in a more consistent manner and in a manner which facilitates the review of data used in risk-related calculations (see Risk General Comment #1).

Risk Comment #7

It is not clear in the BHHRA why the four separate areas (Central Process Area, Central Ditch, Process Cooling Reservoir, Northern Stream) are evaluated separately. It is not likely that a trespassing youth would roam in only one area of the Koppers Granada facility. The separation of areas for performing remedial activities is acceptable, but for evaluating on-site risk, it is necessary to calculate risk on a site-wide basis. It appears that if the risk was calculated on a site-wide basis, the noncarcinogenic hazard would remain below 1, but the cancer risk would most likely fall in the 1E-04 range (not including risks due to inhalation). Koppers Industries, Inc. must evaluate the risk to the receptors on a site-wide basis.

Risk Comment #8

The BHHRA has not included a description on the selection of constituents of potential concern (COPCs). It appears that the risk assessment included as COPCs (displayed in Table 5-11) the entire suite of detected chemicals (displayed in Table 5-1), calculated exposure point concentrations, and carried the list of COPCs through the quantitative portion of the risk assessment. A description of the selection process for COPCs must be included in the BHHRA.

SPECIFIC RISK COMMENTS

Risk Specific Comment #1: Section 4.1.2.2 Container Storage Area (SWMU 7)

Page 4-5: Several times in this paragraph it is stated that constituents were detected at concentrations of less than a detection limit (i.e., pentachlorophenol at <2.0 mg/kg in surface soil; total xylenes at <0.5 mg/kg in surface soil). This also occurred in the next section [Section 4.1.2.3 Drip Track Area (SWMU 8)] with total xylenes detected in one surface soil sample at <0.01 mg/kg. Koppers Industries, Inc. must clarify how these values were detected below their detection limit, or indicate that they were not detected, include the detection limit, and treat the data as other non-detects.

Risk Specific Comment #2: Section 5.1.1 Hazard Identification

Page 5-1: It is identified in the first paragraph in this section that in the Hazard Identification step, COPCs are selected for quantitative risk assessment and that Appendix GG presents the available analytical data for surface and subsurface soil. Appendix GG presents the concentrations of detected constituents in surface soil but does not include information on how the COPCs were selected and presents no subsurface soil data. Koppers Industries, Inc. must revise the text to accurately reflect what is presented in the appendix. In addition, the facility must provide a discussion which describes the methodology used in selecting COPCS (refer also to General Risk Comment No. 8).

Risk Comment #3: Page 5-1

The first paragraph in this section is inconsistent with the details of the 35 constituents detected in surface soil. PAHs, dioxins, phenolics, and benzene, toluene, ethylbenzene, and xylenes (BTEX) are listed as categories, but styrene is not listed as a COPC in surface soil. Koppers Industries, Inc. should be consistent in their presentation of the COPCs.

Risk Specific Comment #4: Section 5.1.2 Toxicity Assessment

Page 5-3: According to the EPA Region 4 Human Health Risk Assessment Bulletins (October, 1996), the most recent update of the EPA Health Effects Assessment Summary Tables (HEAST) should be consulted for sources of toxicity values. Koppers Industries, Inc. cites the 1995 HEAST update for this submission. The most recent update is July, 1997 (EPA 540/R-97-036). Koppers Industries, Inc. must review this most current HEAST update and revise toxicity values accordingly.

Risk Specific Comment #5: Section 5.1.3 Exposure Assessment

Page 5-7: The description of the trespasser receptor changes throughout the document. For example, on page 5-8, last paragraph, the text states "...the current Site use scenario includes local children or teenagers trespassing...." The rest of the document uses such terminology as "local resident" (page 5-17, first paragraph) and "local resident teenager" (page 6-7, second paragraph, and page 5-39, Section 5.3, first paragraph), among others. Koppers Industries, Inc. should be consistent with the receptor name throughout the BHHRA.

Risk Specific Comment #6: Page 5-13

Koppers Industries, Inc. has quantitatively evaluated the risk from particulates using dioxins as a conservative estimate and determined that further evaluation of inhalation of particulate emissions from the Site is not warranted because the estimated potential risk is approximately 9E-07, lower than EPA's target risk range (1E-06 to 1E-04). While this is a conservative estimate based on a residential receptor, the estimated risk is high enough to potentially result in an unacceptable cumulative risk to the receptor. Additionally, although constituents adsorbed onto particulate (dust) emissions were evaluated using the Cowherd, et al., (1985) model, volatilization due to volatile organics in soils was not evaluated. While only a few volatile-organics were detected in the soil, this would increase the inhalation of COPCs and, thus, the risk. Koppers Industries, Inc. must include the inhalation pathway as a potential exposure pathway due to its potential to contribute to a cumulative risk.

Risk Specific Comment #7: Page 5-19

The first paragraph on this page states that potential exposure point concentrations are not estimated for constituents detected in subsurface soil, however, page 5-1 states that Appendix GG presents analytical data used in the quantitative risk assessment for subsurface soil. Koppers Industries, Inc. must correct this discrepancy.

Risk Specific Comment #8:. Page 5-23

The equation presented in the Methodology for Estimating Exposure Point Concentration (Section 5.1.3.4) on this page assumes normal distribution of the data to derive the 95% upper confidence limit (UCL) on the arithmetic mean. Both U.S. EPA (Supplemental Guidance to RAGS: Calculating the Concentrations Term, May 1992) and EPA Region 4 Human Health Risk Assessment Bulletins state that a lognormal distribution must be assumed unless statistical tests support the assumption of a normal distribution. The BHHRA did not provide justification for assuming normal distribution of the analytical data. Koppers Industries, Inc. must provide justification for assuming normal distribution of the analytical data or reevaluate the 95% UCL assuming a lognormal distribution.

Additionally, the above mentioned EPA guidance documents recommend that at least 10 samples per exposure area are needed to provide an adequate estimate of the exposure point concentration. The BHHRA did not provide adequate documentation of the values used to derive the 95% UCL and this recommendation could not be evaluated for technical adequacy. Koppers

Industries, Inc. should provide proper tables of the analytical data results to verify exposure point concentration estimations.

Risk Specific Comment #9: Section 5.1.4 Risk Characterization, Pages 5-30 through 5-33

The estimates of hazard (hazard indices and hazard quotients) and risk (potential excess lifetime cancer risk) in this section are presented with varying significant figures. U.S. EPA RAGS (pages 8-8 and 8-12) states that all hazard indices (HIs), hazard quotients (HQs), and cancer estimates should be expressed using one significant figure only. Koppers Industries, Inc. should present the estimates of hazards and risk in text and tables using only one significant figure.

Risk Specific Comment #10: Page 5-31

The carcinogenic risk equations are switched in Section 5.1.4.2. The equation displayed for calculating excess cancer risk from lifetime average daily dose is the equation for those risks that are greater than 1E-02, and the equation for excess cancer risks greater than 1E-02 is the general excess cancer risk equation. Koppers Industries, Inc. must correct this mistake.

Risk Specific Comment #11: Table 5-3 Toxicity Values

The oral reference dose (RfD) of 0.062 mg/kg-d presented for 4-nitrophenol and used for both 4-nitrophenol and 2-methyl-4,6-dinitrophenol is cited as from the 1995 HEAST (listed as EPA, 1995). The 1997 Update of HEAST does not provide an oral RfD for 4-nitrophenol. A provisional oral RfD of 8E-03 mg/kg-d from the National Center for Environmental Assessment (NCEA) is provided in the EPA Region 3 Risk-Based Concentration (RBC) tables (April 15, 1998) which could be used upon approval from the NCEA. A provisional oral RfD of 3E-03 mg/kg-d is also available in the EPA Region 3 RBC tables. Additionally, the 1995 HEAST is cited differently in Table 5-3, as EPA, 1995 as the source for the oral RfD for 4-nitrophenol and as HEAST as the source for the oral cancer slope factor (CSF) for carbazole. Koppers Industries, Inc. must use the most current update of the HEAST, cite the HEAST consistently, and use NCEA provisional toxicity values when available and upon approval from NCEA.

Risk Specific Comment #12: Table 5-5 Screening Level Evaluation of Potential Risks from Inhalation of Particulate Emissions

The units for the estimated particulate emission factor (PEF) presented in the summary table are incorrect. They are listed as "[(mg/k^3)/mg/kg)]" while elsewhere on this page they are correctly listed as "m^3/kg." Additionally, the equation for compound concentration in air (Ca) should be Cs ● 1/PEF instead of Cs ● PEF and the listing of PEF at the bottom of the page should be 1/PEF as well. The concentration in soil (Cs) is not the same in the listing of parameters and the bottom listing (0.004 mg/kg vs. 0.0054 mg/kg). It appears that the correct value according to Table 5-11 is that used in estimating the inhalation exposure (0.0054 mg/kg). Koppers Industries, Inc. must correct these errors and discrepancies.

Risk Specific Comment #13: Section 5.2 Ecological Evaluation, Page 5-36

The first paragraph in this section states that "Potential ecological risks associated with COPCs on the terrestrial portions of the site are not evaluated quantitatively. The majority of these areas contain active-wood-treating operations and do not represent important habitat." It is not clear what criteria were used to determine that these areas would not represent "important habitat." According to Section 1.1 of the document, the southern and northern portions of the 171 acre site feature wood storage areas with only the central portion containing wood treating operations. The Updated Conceptual Site Model (Figure 4-20) indicates that there is a dense forest along the northern portion of the site. Furthermore, if a comparison of site constituents is compared to soil screening benchmarks for plants and soil invertebrates, developed by Oak Ridge National Laboratory (ORNL), site concentrations would exceed the contaminant specific benchmarks which may indicate that a potential risk to terrestrial species exists. For example, pentachlorophenol was detected in site soils at concentrations of 260 mg/kg (SWMU 10) and the plant benchmark is 3 mg/kg per Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. Koppers Industries, Inc. must revise the document to provide additional information to support not evaluating the terrestrial portions of the site quantitatively in the screening evaluation.

In addition, based on the above referenced statements, it appears that the facility is only evaluating current ecological risk and not future risk. According to EPA guidance (i.e., Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Review Draft, September 1994 and Guidelines for Ecological Risk Assessment, May 4, 1998), ecological risk assessment evaluates the likelihood of adverse ecological effects that may occur or are occurring as a result of exposure to one or more stressors. The document must be revised to address the issue of future ecological risk.

Risk Specific Comment #14: Page 5-36

The last sentence on page 5-36 states that observations of aquatic life in all portions of the stream indicated approximately equal densities of a variety of invertebrates and amphibians. The document has not provided any information to support this statement. The document must be revised to include a discussion of the methodology used to determine the densities of the invertebrates and amphibians.

Risk Specific Comment #15: Page 5-36

The last paragraph on page 5-36 indicates that a one-day site visit was conducted. Koppers Industries, Inc. must revise the document to provide a discussion concerning this site visit including information addressing the timing of the visit, who conducted the visit, the objectives of the visit, any observations or sampling conducted, how observations were documented and what impact the timing of the visit may have had on the observations.

Risk Specific Comment #16: Page 5-37

The second paragraph on page 5-37 states that COPC detected in stream surface waters were compared to final EPA Freshwater Ambient Water Quality Criteria (AWQC) as listed in Tables 5-28 and 5-29. The last paragraph on page 5-38 states that the arithmetic mean concentration was compared to the chronic AWQC and the maximum concentration of constituents was compared to the acute AWQC and that results of the comparisons indicate that all constituent concentrations are below both chronic and acute AWQC. Based on these statements there are several issues which raise concern:

1. Both EPA Region 4 and EPA Office of Solid Waste and Emergency Response have developed surface water and sediment benchmarks (e.g., Ecotox Thresholds and Region 4 Screening Values) to be used in ecological risk assessments. These federal and regional benchmarks are lower than the benchmarks used by the facility. In some cases the benchmarks listed in Tables 5-28 and 5-29 are one to two orders in magnitude greater than the federal Ecotox threshold and the Region 4 freshwater chronic screening value for a specific constituent. For example, the screening benchmark for naphthalene identified in Table 5-29 is 2,300 ppb whereas the Region 4 freshwater chronic screening value is 62 ppb and the federal Ecotox benchmark is 24 ppb.

2. According to Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Review Draft, September 1994, when conducting a screening evaluation, the maximum concentration should be compared to the screening benchmark. The acute AWQC would only be useful as an upper bound screening benchmark since they address lethal effects and episodic exposures rather than sublethal effects and continuous exposures which are more representative of the conditions that are of concern at the majority of hazardous waste sites. Therefore, the facility should compare the maximum freshwater concentration to the chronic screening value. If this more conservative comparison is performed then site concentrations of 2,4-dimethylphenol, acenaphthene, fluoranthene and naphthalene would exceed both the federal and Region 4 screening benchmarks. Koppers Industries, Inc. must revise the document to address these issues.

The facility must review the screening methodology used and revise as appropriate to ensure that this ecological evaluation is biased to overestimate risk. This will allow the facility to provide a defensible conclusion that negligible ecological risk exists or that certain contaminants and exposure pathways can be eliminated from consideration.

Risk Specific Comment #17: Page 5-37

The third paragraph on page 5-37 states that the State of Washington Apparent Effects Threshold (AET) were used as the sediment benchmark. AETs are site-specific and should be used with caution. The AET concentration is the sediment concentration of a selected chemical above which statistically significant biological effects always occur. The use of the AET benchmarks may be under protective because biological effects are observed at chemical concentrations well below AET values. Furthermore, EPA Region 4 has developed sediment screening values that should be used in ecological evaluations. These benchmarks can be found in the EPA Region 4 Ecological Risk Assessment Bulletins, October 1996. Given that this is a screening evaluation it is important to minimize the chances of concluding that there is no risk when, in fact, a risk exists. Thus, the screening methodology must be biased in the direction of overestimating risk. Koppers Industries, Inc. must review this information and revise the document accordingly.

Risk Specific Comment #18: Page 5-37

The document indicates on page 5-37 that a comparison of site specific sediment concentrations to sediment benchmarks was conducted only for those detected COPCs for which a sediment benchmark was available (phenol and PAHs) and that this comparison is shown in Table 5-26. Table 5-2 indicates that a total of 35 constituents were detected in site sediment samples. AET, Ecotox, or Region 4 sediment screening benchmarks exist for 20 of these constituents. Therefore, site sediment concentrations must be compared to these benchmarks and the conclusions regarding the risks posed by sediment contamination and the need for further investigation must be re-examined in light of this comparison.

Risk Specific Comment #19: Table 5-26

The title of Table 5-26 is "Comparison of Sediment Concentrations to Benchmarks". However, the facility has not provided a comparison of site concentrations to the sediment benchmark. Instead, a ratio of total PAHs to the AET benchmark is provided. The rationale for this comparison is unclear. The table must be revised to provide a comparison between the maximum detected sediment concentrations to the Ecotox or Region 4 sediment screening values for all detected COPCs for which a benchmark exists. Koppers Industries, Inc. must revise the document to address this issue.

Risk Specific Comment #20: Page 5-37

The last bullet on page 5-37 states that the total PAH concentrations in all of the central ditch sediment sampling locations downstream of the Site are below the AET benchmark. The sediment concentrations may be below the AET total PAH benchmark, however, all of the off-site sediment samples for the Central Ditch exceed the Ecotox threshold of 4.0 mg/kg and the Region 4 sediment screening value of 1,684 ppb. Therefore, Koppers Industries, Inc. must review the screening methodology and revise the document as appropriate to ensure that all potential COPCs have been evaluated.

Risk Specific Comment #21: Page 5-38

The second paragraph on page 5-38 states that "Potential ecological risks are expected in terrestrial portions of the Site because of a lack of important habitat." This sentence does not make sense and also appears to contradict the statement on page 5-36, second paragraph. Koppers Industries, Inc. must revise the document to correct this discrepancy.

Risk Specific Comment #22: Page 5-39

The first paragraph on page 5-39 states that this ecological evaluation indicates that concentrations of constituents in surface water are well below surface water criteria and, therefore, are not likely to pose a potential risk to ecological receptors. As stated in Specific Risk Comment 16, if the maximum surface water concentrations are compared to the federal or Region 4 screening benchmarks then a number of constituents would exceed the surface water criteria which would indicate that there is a potential risk to ecological receptors and that further evaluation is warranted. Koppers Industries, Inc. must revise the document to address this issue.

Risk Specific Comment #23: Table 5-2

It is indicated on Table 5-2 that a total of 25 potential COPCs were detected in surface water at the site. However, Tables 5-28 and 5-29 only identify nine COPCs for surface water. It is not clear why the other detected constituents were eliminated from the screening evaluation. Koppers Industries, Inc. must revise the document to provide a discussion which justifies the elimination of these potential COPCs as is required in the EPA Guidelines for Ecological Risk Assessment dated May 4, 1998. Alternatively, the document must be revised to include these potential COPCs in the ecological evaluation.

Risk Specific Comment #24: Appendix GG Risk Calculations

The title for this appendix is misleading. Included in this appendix are toxicity summaries of the constituents, details of the derivations of absorption adjustment factors (AAFs), and risk equations with exposure factors and results. It is suggested that Koppers Industries, Inc. provide subheadings for the different parts of the appendix or provide a separate appendix for toxicity summaries, derivations, and risk equations.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

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AUG - 7 1998
Dept. of Environmental Quality
Office of Pollution Control

4WD-RPB

Michael W. Bollinger, Environmental Manager
Beazer-East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: Approval of Central Ditch Sediment
Characterization Work Plan
KII/Beazer East- Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) is in receipt of the June 1998 Central Ditch Sediment Characterization Work Plan and the last facsimile addendum dated July 27, 1998. Review of these submittals found the work plan to form a satisfactory plan designed to quickly locate sediment contamination in the Central Ditch. As you know, this information is to be utilized in determining the extent of consolidation of contaminated sediment back onsite within the boundaries of a previously planned cap/cover for the Former Wastewater Treatment System (an Interim Measure). Dense nonaqueous liquids (DNAPLs) are found in and at depth below the Former Wastewater Treatment System. Not surprisingly, the Former Wastewater Treatment System is one of three major sources of groundwater contamination identified during the ongoing RCRA Facility Investigation (RFI).

Basically, the final cleanup level for the Central Ditch must address ecological and/or human health concerns. In several recent teleconferences, EPA and Beazer East representatives have discussed the interaction between the sediment characterization plan and the potential Interim Measure removal triggers. The interaction of the Interim Measure with a future remedy was also discussed. EPA and Beazer East have attempted to have this proposal's sampling protocol and technique meet potential questions which may come up during the discussions on the Interim Measures removal trigger and/or final cleanup level. Hopefully, all of these issues have been identified, and the characterization plan revised to adequately meet those potential issues which may emerge during future discussions on removal/cleanup trigger levels. If not, then further sampling will be required.

EPA does note that if Beazer East is planning to base part of the Interim Measure removal trigger level on background sediment concentrations, then EPA strongly suggests that additional background samples (minimum of four) be taken up-stream of the only former sediment sample location, UDSD-1, clearly up-stream of the facility operations.

If there are any questions during work plan implementation, please contact Wesley Hardegree of the South Programs Section (SPS) at (404) 562-8486.

Sincerely,

N. M. Kumar

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

cc: Jerry Cain, MDEQ
R.D. Collins, Vice President, Koppers Industries

Beazer

BEAZER EAST, INC., ONE OXFORD CENTRE, SUITE 3000, PITTSBURGH, PA 15219-6401

RECEIVED
JUN 29 1998
Dept. of Environmental Quality
Office of Pollution Control

June 26, 1998

Mr. Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division
U. S. Environmental Protection Agency
61 Forsyth Street SW
Atlanta, Georgia 30303

ATTN: South Programs Section

RE: Interim Measures / Stabilization Measures
Koppers Industries, Inc.
Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Kumar:

In response to your letter dated April 15, 1998, and received April 27, 1998, enclosed are two copies of the schedule for the implementation of the Interim Measures at the Grenada Facility. As was discussed with Mr. Wesley Hardegree prior to our letter dated June 27, 1998, requesting an extension of the submittal of the schedule, also included is a Central Ditch Sediment Characterization Work Plan prepared for Beazer East, Inc. (Beazer) by Ogden Environmental and Energy Services. As was discussed with Mr. Hardegree, additional characterization of the Central Ditch Sediments is required to facilitate the preparation of a Sediment Excavation Plan.

As was discussed with Mr. Hardegree during a meeting at the site in March 1998, Beazer is interested in expanding the scope of the Interim Measure to include the removal of sediments from the Central Ditch adjacent and contiguous to SWMU 11. EPA indicated in the April 15, 1998 letter that "this concept is acceptable to EPA and allow pursuant to the constraints found in HSWA Permit Condition II.D.1..." Specifically, Beazer intends to place the sediments removed from the Central Ditch under the soil cover/cap to be constructed over SWMU 11. This approach will require the designation of SWMU 11 and the contiguous Central Ditch as an "area of contamination" or "AOC". Beazer will be submitting additional correspondence concerning the AOC concept for the Interim Measure in the near future.

Currently the volume of sediments to be removed from the Central Ditch is uncertain; however, Beazer and our design consultant, HIS Geo Trans, Inc., believe that there is more than adequate volumetric capacity for the sediments beneath the SWMU 11 soil cover/cap. Thus, as indicated in the enclosed schedule, we intend to proceed with the final design activities for the Interim Measures concurrent with your review and approval of the Central Ditch Sediment Characterization Work Plan. This will allow the implementation of Interim Measure to occur in 1998. Also, as indicated in the schedule, limited additional design related field activities are required. These include additional surveying of the SWMU 11, Central Ditch and adjacent areas; visual sediment characterization via hand auger transects within the Central Ditch immediately adjacent to SWMU 11; and, geotechnical test borings to determine soil properties for use in the structural design of the barrier wall. These activities are scheduled to begin during the first week of July.

As indicated in the Schedule, the sediment sampling activities described in the enclosed work plan are contingent upon EPA approval. To expedite your review and approval of this document, I will be contacting Mr. Hardegree during the week of June 29, 1998 to orally review the work plan.

If you have any questions concerning the enclosed information, please contact me at (412) 208-8864.

Sincerely,

Michael W Bollinger

Michael W. Bollinger, P.E.
Environmental Manager

Enclosures

cc: J. Cain (MDEQ)
R. Markwell (Beazer)
J. Patarcity (Beazer)
R. Anderson (Ogden)
P. Rich (HSI GeoTrans)

KOPPERS INDUSTRIES

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May 14, 1998

RECEIVED
MAY 2 2 1998
Dept. of Environmental Quality
Office of Pollution Control

Mr. Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division
U. S. Environmental Protection Agency
Atlanta Federal Center
61 Forsyth Street, SW
Altanta, Georgia 30303-8909

RE: KII Comments on Preliminary Draft HSWA Permit
Koppers Industries/Beazer East
Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Kumar:

Enclosed for your review and consideration are Koppers Industries, Inc. (KII) comments on the draft HSWA permit received by KII on April 15, 1998. Our comments provide revisions to three SWMU's described in the *Attachment A, Solid Waste Management Unit Summary*.

Please call if you have any questions. I can be reached at (412) 227-2248.

Sincerely,

Tom DuPlessis

Thomas E. DuPlessis
Environmental Manager

Enclosure

c: Michael W. Bollinger – Beazer East, Inc. (w/ enclosure)
Wayne Stover – MDEQ (w/ enclosure)
Randall D. Collins – KII

Koppers Industries, Inc.

Comments on Preliminary Draft HSWA Permit
Koppers Industries/Beazer East
Grenada Facility

EPA I.D. No. MSD 007 027 543

The following are KII comments on the preliminary draft HSWA permit for the Grenada Facility. KII comment's are intended to update the information found in the table shown in *Attachment A, Solid Waste Management Unit Summary*, Section A-1, page A-1 of 4.

Text with a strikeout should be deleted. Highlighted text should be added.

A.1. List of solid waste management units (SWMUs) and areas of concern (AOCs) requiring a RCRA Facility Investigation (RFI):			
SWMU/AOC No/Letter	SWMU/AOC Name	Unit Comment	Dates of Operation
CENTRAL PROCESS AREA			
4	Boiler	Managesd creosote byproducts, pentachlorophenol byproducts, impacted soils, bottom sediments and unreclaimed oil. RFI Report Under Review. Since 1992, the boiler has used untreated wood, creosote treated wood, and pentachlorophenol treated wood as fuel.	Approximately 1975 to ~~Present~~ 1992
10	Underground Storage Tank	Unknown, ……..	Approximately 1970 to ~~Present~~ 1994
MISCELLANEOUS UNITS			
8	Drip Track Area	Manages creosote, …….	~~1979~~ 1903 to Present

WS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8909

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APR 17 1998
Dept. of Environmental Quality
Office of Pollution Control

4WD-RPB

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: Interim Measures/Stabilization Measures
Koppers Industries/Beazer East
Grenada Facility
EPA I.D. No. MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) is writing to discuss the Interim Measure Predesign Investigation Report and Conceptual Design dated December 16, 1996 (i.e., "Interim Measures Predesign Report"). As stated in the Interim Measures Predesign Report, "[t]he purpose of the IM predesign investigation was to create the basis for design of the proposed Interim Measures by completing the understanding of the geologic, hydrogeologic, geotechnical, and chemical transport characteristics within the IM Study Area." As you know, the Interim Measures Predesign Report was submitted in accordance with the June 23, 1994, Interim Measures Work Plan, subsequently revised on October 25, 1995, and December 8, 1995. The work plan was approved by EPA on January 25, 1996. EPA's current understanding is that Beazer East originally submitted the Interim Measures Work Plan in response to the EPA Stabilization Initiative described in an EPA letter dated December 8, 1993.

The December 1996, transmittal letter for the Interim Measures Predesign Report ends by stating that "Beazer is prepared to immediately begin design and implementation of the proposed interim measures." However, during the March 5, 1998, visit to the facility by Mr. Wesley Hardegree of my staff, it was discovered that implementation has not occurred. Mr. Hardegree did learn that Beazer East plans to implement the measures "in 1998." Upon returning to the office, Mr. Hardegree discovered that no implementation schedule exists for the measures discussed in the December 1996, Interim Measures Predesign Report.

During the March 1998 site visit, Mr. Hardegree also learned of Beazer East's wish to expand the Interim Measures to include some excavation of contaminated sediment in the Central Creek. This concept is acceptable to EPA and allowed pursuant to the constraints found in HSWA Permit Condition II.D.1. which states that "[t]he Permittee, upon approval by the Regional Administrator, may conduct interim measures to contain, remove or treat contamination resulting from the release of hazardous constituents..."

EPA feels quite strongly that actions discussed in the December 16, 1996, Interim Measures Predesign Report need to be connected to an established schedule recognized by both EPA and Beazer East. Therefore, within thirty (30) calendar days from receipt of this letter, the Permittee shall submit a **Interim Measure Implementation Schedule** which fully outlines the time frame to implement the recommendations of the Interim Measures Predesign Report. The Interim Measures Schedule must include submittal dates for any needed Progress Reports and the final Completion Report. Because EPA is in the process of re-issuing the permit to cover the Hazardous and Solid Waste Amendments (HSWA), please note those conditions in the preliminary draft permit recently transmitted to you under separate cover which relate to Interim Measures Progress Reports and Completion Reports.

A **Sediment Excavation Plan** for the Central Creek must also be included with the submittal of the Interim Measures Implementation Schedule. This Sediment Excavation Plan must fully explain the proposed sediment excavation in such detail to allow eventual EPA approval (e.g., scope of the excavation, basis for the extent of excavation, preferred sediment disposal option, pre- and post-excavation sampling plan, as needed, etc.).

Please mail two (2) copies of the above required documents to Mr. Kumar and one (1) copy of the require documents to Mr. Cain at the following addresses:

Mr. Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division
U.S. Environmental
Protection Agency
61 Forsyth Street SW
Atlanta, Georgia 30303
ATTN: South Programs Section

Mr. Jerry Cain, Chief
Environmental Permits Division
Mississippi Department of
Environmental Quality
Post Office Box 10385
Jackson, MS 39289-0385
ATTN: Timber and Wood Products
Branch

If there are any questions regarding the enclosures or the permitting process, please contact Wesley Hardegree of the South Programs Section (SPS) at(404) 562-8486.

Sincerely,

Caron B. Falconer

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

cc: ✓Jerry Cain, MDEQ
R.D. Collins, Vice President, Koppers Industries

FLUOR DANIEL GTI

RECEIVED
APR - 3 1998
Dept. of Environmental Quality
Office of Pollution Control

April 2, 1998

Mr. Narindar K. Kumar, Chief
RCRA Program Branch
Waste Management Division
U.S. EPA
61 Forsyth Street SW
Atlanta, Georgia 30303
Attn: South Programs Section

Mr. Toby Cook
Hazardous Waste Division
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

RE: Notice of Deficiency
Part B Application for HSWA Permit
EPA I.D. Number: MSD 007 027 543
Koppers Industries, Inc.
Grenada Facility
Grenada, Mississippi

Dear Mr Kumar and Mr. Cook:

On behalf of Beazer East, Inc. (Beazer), Fluor Daniel GTI, Inc. has prepared the following responses to the U.S. Environmental Protection Agency (EPA) Region IV correspondence dated February 25, 1998 and received on March 2, 1998 regarding the December 1997 Post-Closure Permit Renewal Application (Application) for the Koppers Industries, Inc. (KII) facility located in Grenada, Mississippi. Pages of the Application that were revised in response to your comments are provided as Attachment A. The following responses address EPA comments on Section L of the Application.

<u>COMMENT #1:</u> Section L. Information Requirements for Solid Waste Management Units

a) 1. **The application should acknowledge that all HSWA corrective action conditions of the existing permit will continue beyond the permit expiration date if a new HSWA portion of the RCRA Permit is not issued on or before the expiration date. Permittee acknowledgment of the possibility for permit continuance after expiration, although not specific to §270.14(d) requirements, will avoid any potential confusion between the Permittee and EPA if a new permit is not issued before the current permit expires.**

Reply: *Section L.5 of the HSWA portion of the Application has been revised to acknowledge that Beazer will continue to comply with HSWA corrective action conditions of the existing permit beyond the permit expiration date, if the renewed HSWA portion is not issued by the EPA on or before the expiration date of the original permit (June, 1998).*

a) 2. **The application, pursuant to the spirit of §270.14 (d), must list all SWMUs or areas of concern (AOCs) identified at the facility to date. This list must also specify the current corrective action status of each SWMU or AOC (e.g., RFI completed or underway, no further action required at this time, CMS underway, Final Remedy Selected, Interim Measures completed or unapproved documents which support each SWMU or AOC's corrective action status.**

Reply: *Section L - Information Requirements for Solid Waste Management Units (Section L) of the Application has been revised to specify the current corrective action status of each Solid Waste Management Unit (SWMU).*

b) 1. According to Table 1.1 and associated text from the Phase II RFI Report, thirteen (13) SWMUs have been identified at the facility. EPA wants to ensure that no other units have been identified since the 1987 RCRA Facility Assessment (RFA). Have any other SWMUs or AOCs been identified pursuant to HSWA Condition II.A.2 since 1987?

Reply: *KII upgraded the tank process area from October 1988 through May 1989 by excavating soils and installing a concrete surface around the tanks. Soils excavated within the tank process area were stored inside an existing storage shed from May 1989 through October 1996. The location of the storage shed is shown on Figure L-1 of the Application.*

Additionally, in accordance with 40 CFR Subpart W - Drip Pads, a concrete drip pad and collection system were installed in the Drip Track Area (SWMU 8). Prior to the installation of the concrete pad, visually impacted soils around and under the drip tracks were excavated from December 1990 through February 1991, and placed in two (2) soil containment structures totaling approximately 3,200 cubic yards of soil. These structures were located south of the storage shed structure, as shown on Figure L-1. The construction of the soil containment structures consisted of the placement of a polyethylene liner to overlay the existing site soils, followed by placement of the drip track soils and finally by covering with polyethylene sheeting. The cover was secured and a fence was constructed around the perimeter of the soil containment structures.

The soil containment structures and the storage shed were identified by the MDEQ as SWMUs in the fall of 1993. Subsequently, Beazer provided notification to the U.S. EPA, Region IV of these SWMUs and initiated the soil removal form these SWMUs/soil containment structures on October 23, 1996. Soil removal and completion of site restoration activities was completed on November 15, 1996, in accordance with the Soil Pile Removal Procedures (Fluor Daniel GTI, Inc., 1996). The soils were taken off site to Laidlaw's USPCI Lone Mountain, Subtitle "C" landfill facility located in Waynoka, Oklahoma (EPA ID No. OKD065438376), and post-removal samples were collected. The removal and post-removal activities were documented to the EPA and MDEQ in the Removal Documentation Report (Fluor Daniel GTI, Inc., 1997).

Section L of the Application has been revised to include a summary of the thirteen SWMUs identified in the RFA and the additional SWMUs identified by MDEQ.

COMMENT 2: Subpart CC Organic Air Emission Standards

The RCRA organic air emissions standards (40 CFR Part 264, Subpart CC) became effective on December 6, 1996. In addition to containing conditions to ensure compliance with Subparts AA and BB, all permits issued after December 6, 1996, must contain conditions to ensure compliance with Subpart CC. These conditions will be in the Federal portion of the RCRA permit until the State of Mississippi becomes authorized to implement the Subpart CC regulations in lieu of EPA.

In general, Subpart CC requires air emission controls for tanks, containers, and surface impoundments which manage hazardous wastes containing an average organic

concentration greater than or equal to 500 ppw at the point of waste origination. Specific exemptions to these requirements are outlined in the rule.

All facilities subject to the Subpart CC standards are required to notify EPA of all affected units by providing the information specified in 40 CFR §270.27 (see Enclosure 1). The information required includes identification of units subject to the standards, documentations for the equipment used to control emissions, and certification that the Subpart CC requirements have been met.

Please submit all information in hard copy and, if needed given the size of this site-specific response, electronic format (compatible with WordPerfect 6.1). In addition to the requirements of §270.27, please provide a summary of the units subject to Subpart CC in the format provided in Enclosure 2. In the event that the regulations are not applicable to your facility, please provide written notification of such claim within the time period specified in the cover letter.

Reply: *Hazardous waste is generated at the KII facility as a result of wood preserving operations; however, the generated waste is stored for less than 90 days. Therefore, the requirements specified in 40 CFR 262-Standards Applicable to Generators of Hazardous Waste are relevant to on-going operations at the KII facility and not the permit requirement covered under 40 CFR 264, specifically those in Subpart CC - Air Emission Standards for Tanks, Surface Impoundments, and Containers.*

In addition, the closed SI is the only RCRA unit at the KII facility. This unit was certified closed in 1989. All sludge and visually contaminated soils were removed from the SI and shipped off-site for disposal. The closed SI was then filled with clean material and covered with a soil-bentonite cap, with drainage layer. Secion I.1 of the Application provides additional information regarding the closure of the SI. Organic constituents are not released from the closed SI, therefore, air emission requirements associated with 40 CFR 264, Subpart CC Organic Air Emission Standards are not applicable for this Unit.

Should you have any comments, questions, or care to have a discussion with the appropriate parties regarding the above information, please do not hesitate to contact Mr. Robert Markwell of Beazer at (412) 208-8812.

Sincerely,
Fluor Daniel GTI, Inc.

Mary Anna Babich

Mary Anna Babich
Project Manager

cc: R. Markwell - Beazer
M. Bollinger - Beazer

P:\PROJECTS\BEAZER\GRENADA\RESP-HSW.WPW

ATTACHMENT A

REPLACEMENT PAGES FOR:

POST-CLOSURE PERMIT RENEWAL APPLICATION

KOPPERS INDUSTRIES, INC.

GRENADA, MISSISSIPPI FACILITY

FLUOR DANIEL GTI

POST-CLOSURE PERMIT RENEWAL APPLICATION
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY

Fluor Daniel GTI Project 101399

December 1997
Revised April 1998

Prepared for:
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, Pennsylvania 15219

Prepared by:
Fluor Daniel GTI
637 Braddock Avenue
E. Pittsburgh, PA 15112

FIGURES

TABLES

SECTION L. INFORMATION REQUIREMENTS FOR SOLID WASTE MANAGEMENT UNITS

L.1 Description of Solid Waste Management Units

A RCRA Facility Assessment (RFA) of the KII Grenada Site was conducted in July 1987 and documented in a report entitled *RCRA Facility Assessment of the Koppers Industries, Inc., Grenada, Mississippi* (EPA, 1987). The RFA identified the following 13 potential solid waste management units (SWMUs):

- SWMU 1 Oil Water Separator
- SWMU 2 Surface Impoundment
- SWMU 3 Spray Irrigation Field
- SWMU 4 Boiler
- SWMU 5 Boiler Ash Landfill
- SWMU 6 Process Cooling Reservoir
- SWMU 7 Container Storage Area
- SWMU 8 Drip Track Area
- SWMU 9 Chemical Storage Tank
- SWMU 10 Underground Storage Tank
- SWMU 11 Former Wastewater Treatment System
- SWMU 12 North Waste Piles
- SWMU 13 South Waste Piles

The locations of the SWMUs identified in the RFA are shown on Figure L-1. A brief description of each SWMU, types of wastes handled, period of operation and status are summarized in Table L-1.

KII upgraded the tank process area by installing a concrete surface around the tanks. From October 1988 through May 1989 soils were excavated within the tank process area and placed inside an existing storage shed. The location of the storage shed is shown on Figure L-1 of the Application.

Additionally, in accordance with 40 CFR Subpart W - Drip Pads, a concrete drip pad and collection system were installed in the Drip Track Area (SWMU 8). Prior to the installation of the concrete pad, visually impacted soils around and under the drip pad were excavated from December 1990 through February 1991, and placed in two (2) soil containment structures totaling approximately 3,200 cubic yards of soil. These structures were located to the south of the Storage Shed Structure as shown on Figure L-1. The original construction of both soil containment structures consisted of the placement of a polyethylene liner to overlay the existing site soils. After placement of the drip track soils, polyethylene sheeting was used to cover the soil piles. The cover was secured and a fence was constructed around the perimeter of the soil containment structures.

In addition to the SWMUs identified in the RFA, the soil containment structures and the storage sheds were identified by the MDEQ as SWMUs in the fall of 1993. The location of these SWMUs are shown on Figure L-1.

L.2 Summary of RCRA Facility Investigations (RFI)

The facility began operating under RCRA Part B Post-Closure Care Permit No. MDS 007 027 543 issued by EPA Region IV and under Hazardous Waste Management Permit No. 88-543-01 issued by the MDEQ on June 28, 1988. A requirement of these permits was to evaluate the SWMU's for potential releases of hazardous constituents, and implementing the appropriate corrective action for any such release.

In accordance with these permits, Koppers Company, Inc. performed a Phase I RFI of each SWMU in 1988. The findings of this investigation was presented in the report *Soil and Groundwater Investigation of Solid Waste Management Units, Koppers Industries, Inc. Plant, Grenada, Mississippi* (Keystone, 1989).

In December 1989, the MDEQ concurred that additional investigations were warranted. Subsequently, Beazer submitted the *Phase II RFI Work Plan, RCRA Facility Investigation (RFI), Koppers Industries, Inc., Grenada, Mississippi* (Keystone, 1990), to outline the scope of work and the procedures to be implemented during the additional investigations of the SWMUs. Responses to comments received from the EPA and MDEQ regarding the Phase II RFI Work Plan were incorporated as revisions titled *Supplemental Work Plan, RCRA Facility Investigation (RFI), Koppers Industries, Inc., Grenada, Mississippi* (Keystone, 1991). In January 1991, the MDEQ and the EPA approved this Work Plan and Phase II RFI field activities began in May 1991.

A *draft Phase II RCRA Facility Investigation Report, Koppers Industries, Inc., Grenada, Mississippi* was completed in 1992 and revised in 1994 based on EPA comments. A second set of EPA comments regarding the revised Draft Phase II Report were received by Beazer on June 12, 1996. Beazer submitted a response to EPA's comments on August 30, 1996. The *RCRA Facility Investigation, Work Plan Addendum, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi* (HSI, 1997) was prepared in accordance with that response, and the supplemental field investigations were conducted during May and June 1997.

The *Final Phase II RCRA Facility Investigation (RFI) Report, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi* (HSI, 1997) incorporated data from the Phase I RFI, the Phase II RFI and the 1997 supplemental investigation to define and present the nature and extent of constituent impact at the KII facility. This report also presented an updated Conceptual Site Model of constituents and their potential migration in soil, groundwater, surface water and sediment, and evaluated the constituents, exposure routes, and associated potential risks for current and future human populations and the environment. Beazer submitted the final report to the EPA and MDEQ for review and approval in January 1998.

L.3 Information Pertaining to Releases

The 13 SWMUs were investigated in detail during the Phase I and Phase II RFI studies. Information pertaining to potential releases of hazardous wastes or hazardous constituents from SWMUs at the facility were included in the *Final Phase II RCRA Facility Investigation (RFI) Report, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi* (HSI, 1997).

L.4 Sampling and Analysis Description of Solid Waste Management Units

Results of sampling and analysis of groundwater, soils, surface water, and sediments related to SWMUs at the facility can be found in the *Final Phase II RCRA Facility Investigation (RFI) Report, Koppers Industries, Inc., Grenada Facility, Grenada, Mississippi* (HSI, 1997).

L.5 Corrective Action

Process changes and upgrades at the KII facility have minimized or eliminated the potential for further releases from the SWMUs. All corrective action activities implemented or proposed during the existing permit period will continue beyond the expiration date of the existing permit (i.e., June 1998). The following describes corrective action activities completed and proposed interim measure activities.

SWMUs in the northern and southern areas of the facility have either already undergone closure or have recently been addressed through a direct removal action, with the exception of the North Waste Piles. The Spray Irrigation Field (SWMU 3) was taken out of service in mid-1988 and closed in 1991 in accordance with a closure plan approved by EPA in January 1991. The South Waste Piles (SWMU 13) were removed prior to 1989.

The closed SI (SWMU 2) was constructed in the mid-1970's as part of the plant's wastewater treatment system and was used until 1988 to treat wastewater resulting from the wood preserving operations. In the summer of 1988, all K001 sludge and visually contaminated soils were removed from the impoundment and shipped off-site to Chemical Waste Management, Inc., located in Emelle, Alabama for disposal. Prior to closure of the SI, a RCRA permit application was submitted to the MDEQ and a Hazardous Waste Management Permit No. 88-543-01 became effective on June 28, 1988 for the operation and post-closure care of the closed SI. The SI was closed in 1989 and certification of closure for the SI was included in the *Closure Construction Documentation Report for the Surface Impoundment Closure* (Keystone, 1989). The State of Mississippi issued Hazardous Waste Management Permit No. 88-543-01 on June 28, 1988, as amended in February 1990, for post-closure care of the closed SI.

The closed Boiler Ash Landfill (SWMU 5) is located in the southern portion of the KII Grenada wood treating facility, and is classified as a RCRA unit because boiler ash was placed at this location beginning in approximately December 1982 and continuing through 1987. RCRA interim-status groundwater monitoring has been performed for the closed boiler ash landfill since 1988. The Boiler Ash Landfill was closed in 1990 by constructing a RCRA cap over the area. The construction documentation report and closure certification were submitted to the MDEQ in June 1990. The Boiler Ash Landfill was closed pursuant to a negotiated Order with MDEQ and documented in the reports *Final Report, Groundwater Quality Assessment, Boiler Ash Disposal Area* (Chester Environmental, 1993) and *Supplemental Investigation Addendum to Boiler Ash Landfill Groundwater Quality Assessment (Dames & Moore, February 1994).*

The *Supplemental Investigation Addendum to Boiler Ash Landfill Groundwater Quality Assessment (Dames & Moore, February 1994)* confirmed that the volatile organics (tetrachloroethylene (TCE) and 1,2-dichloroethene) detected during the RCRA interim status groundwater monitoring program and the Groundwater Quality Assessment are not the result of activities conducted on the KII facility. The data collected from the test borings and monitoring wells installed for the closed boiler ash landfill prove that these volatiles are not present in detectable concentrations in the vadose zone in the closed boiler ash landfill, and that their presence in site groundwater is the result of groundwater transport from an upgradient, off-site source.

During the fourth quarter of 1994, Heatcraft, the adjacent upgradient property owner to the KII facility, performed an investigation to determine the rate of movement and extent of volatile organic constituents in groundwater. The November 1995 report entitled, *An Interim Engineering Report (Phase I) for a Comprehensive Groundwater Investigation Program at Heatcraft, Inc. (South Plant),* prepared by Hazclean Environmental Consultants, details field activities related to delineating a TCE plume originating from the Heatcraft property located west of the closed boiler ash landfill on property adjacent to the KII property. The report states that "...The TCE contamination plume that originated at the Heatcraft, Inc. South Plant site has migrated toward the north, northwest and northeast to the adjacent properties in the upper three (3) stratigraphic layers. Based on groundwater analytical results, the following properties have been influenced by the TCE contamination plume..," including the KII Grenada facility.

Beazer petitioned to terminate the groundwater monitoring program associated with the closed boiler ash landfill at the KII Grenada wood treating facility on the basis that constituents from the adjacent property are the primary impact on groundwater quality at the facility, and that the closed boiler ash landfill has had minimal, if any, impact on groundwater. Information supporting the elimination of the groundwater monitoring program was provided in the *Request for Discontinuation of the Boiler Ash Monitoring Program* (Fluor Daniel GTI, February 1991). Beazer has received verbal concurrence from MDEQ on the discontinuation of the closed boiler ash landfill monitoring program.

KII upgraded the tank process area from October 1988 through May 1989 by excavating soils and installing a concrete surface around the tanks. Soils excavated within the tank process area were stored inside an existing storage shed from May 1989 through October 1996. The location of the storage shed is shown on Figure L-1 of the Application.

Additionally, in accordance with 40 CFR Subpart W - Drip Pads, a concrete drip pad and collection system were installed in the Drip Track Area (SWMU 8). Prior to the installation of the concrete pad, visually impacted soils around and under the drip tracks were excavated from December 1990 through February 1991, and placed in two (2) soil containment structures totaling approximately 3,200 cubic yards of soil. These structures were located south of the storage shed structure, as shown on Figure L-1. The construction of the soil containment structures consisted of the placement of a polyethylene liner to overlay the existing site soils, followed by placement of the drip track soils and finally by covering with polyethylene sheeting. The cover was secured and a fence was constructed around the perimeter of the soil containment structures.

The storage shed and soil containment structures were identified by the MDEQ as SWMUs in the fall of 1993. Subsequently, Beazer provided notification to the U.S. EPA, Region IV of these SWMUs and initiated the soil removal form these SWMUs/soil containment structures on October 23, 1996. Soil removal and completion of site restoration activities was completed on November 15, 1996, in accordance with the *Soil Pile Removal Procedures* (Fluor Daniel GTI, Inc., 1996). The soils were taken off site to Laidlaw's USPCI Lone Mountain, Subtitle "C" landfill facility located in Waynoka, Oklahoma (EPA ID No. OKD065438376), and post-removal samples were collected. The removal and post-removal activities were documented to the EPA and MDEQ in the *Removal Documentation Report* (Fluor Daniel GTI, Inc., 1997).

Proposed Interim Measures

Releases from SWMUs in the Central Process Area (i.e., SWMUs 1, 4, 9 and 10), the Drip Track Area (SWMU 8), and the Former Wastewater Treatment System (SWMU 11) were determined to have impacted underlying soils. The Former Wastewater Treatment System was the focus of an interim measures investigation conducted in 1996 and documented in the report *RCRA Interim Measures Predesign Investigation Report and Conceptual Design* (HSI, 1996).

The proposed interim measure, presented to EPA and MDEQ in the *RCRA Interim Measure Predesign Investigation Report and Conceptual Design* (HSI, 1996) and the *Final Phase II RCRA Facility Investigation Report* (HSI, 1997), includes:

- Installation of a subsurface vertical containment barrier along the north bank of the Central Ditch to contain DNAPL and prevent continuing seeps into the Central Ditch; and

- Installation of a low-permeability soil cover to reduce precipitation infiltration to the saturated zone and thereby reduce the groundwater hydraulic gradient toward the Central Ditch.

This interim measures is scheduled to be conducted in 1998.

Potential Natural Attenuation

As stated in the *Final Phase II RCRA Facility Investigation Report* (HSI, 1997) there are indications of natural attenuation occurring at the KII facility based on the following observations:

- The characteristics of the constituents of concern indicate that biological degradation is likely;
- Substantial decrease in concentrations of site-related constituents over distance from source areas indicates that natural processes are limiting constituent transport; and
- The relatively small areal extent of the groundwater impacts, given more than 90 years of site operation and an average flow velocity of 0.11 ft/day for the Upper Sand Zone further indicates naturally limited constituent migration.

Sampling performed and reported in the *RCRA Interim Measures Predesign Investigation Report and Conceptual Design* (HSI, 1996) indicated the potential for a high degree of biological activity in the groundwater.

TABLE L-1
Summary of SWMUs
Koppers Industries, Inc.
Grenada, MS

SWMU	Types of Material	Period of Operation	Status
Oil/Water Separator* (SWMU 1)	Creosote, No. 2 diesel fuel, pentachlorophenol and oil	At least 1975 to present	Concrete separator, currently used RFI completed
Surface Impoundment (SWMU 2)	Creosote, No. 2 diesel fuel, pentachlorophenol and oil	At least 1975 to mid-1988	RCRA closure completed; RCRA Post-Closure Care Permit (detection monitoring) RFI completed
Spray Irrigation Field (SWMU 3)	Creosote, No. 2 diesel fuel, pentachlorophenol and oil	At least 1975 to mid-1988	Closure completed RFI completed
Boiler* (SWMU 4)	Creosote byproducts, pentachlorophenol byproducts, impacted soils, bottom sediments and unreclaimed oil	At least 1975 to present	RFI completed
Boiler Ash Landfill (SWMU 5)	K001 bottom sediments boiler ash	At least 1979 to 1993	RCRA closure completed RCRA monitoring discontinued RFI completed
Process Cooling Reservoir (SWMU 6)	Cooling water	At least 1970 to present	Currently used RFI completed
Container Storage Area (SWMU 7)	Creosote, pentachlorophenol, bottom sediments, impacted soils and reclaimed oil	1980 to present	Less than 90-day storage area
Drip Track Area (SWMU 8)	Creosote, No. 2 diesel fuel, pentachlorophenol and oil	1979 to present	Soil removed and disposed off-site in accordance with new Subpart W Concrete drip pad installed in 1991 RFI completed
Chemical Unloading Area* (SWMU 9)	Creosote, No. 2 diesel fuel	At least 1975 to present	RFI completed
Underground Storage Tank* (SWMU 10)	Unknown. Possible creosote, pentachlorophenol impacted run-off	At least 1970 to present	RFI completed
Former Wastewater Treatment System (SWMU 11)	Creosote, No. 2 diesel fuel, pentachlorophenol, oil and wood debris	At least 1970 to about 1980	Interim Measure investigation completed Closure completed RFI completed
North Waste Piles (SWMU 12)	Construction debris, treated and untreated scrap wood, railroad iron, scrap metal, rubber tires, other inert materials	Unknown	RFI completed
South Waste Piles (SWMU 13)	Untreated wood, emply railroad spike drums	Unknown	Removal action completed RFI completed

TABLE L-1 (Continued)
Summary of SWMUs
Koppers Industries, Inc.
Grenada, MS

SWMU	Types of Material	Period of Operation	Status
Storage Shed (SWMU identified by MDEQ in 1993)	Excavated soils from tank process area upgrade	October 1988 to May 1989	Removal action completed RFI completed
Soil Containment Structures (SWMU identified by MDEQ in 1993)	Excavated soils from drip track area upgrade	December 1990 to February 1991	Removal action completed RFI completed

* The Central Process Area includes SWMUs 1, 4, 9 and 10.

Koppers (Grenada Co.) RCRA/HSWA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8909

4WD-RPB

FEB 25 1998

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: Notice of Deficiency
Part B Application for HSWA Permit
EPA I.D. Number: MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) - Region 4 is in receipt of the December 1997 Post-Closure Permit Renewal Application for the Koppers facility located in Grenada, Mississippi. As you know, Section L of the application contains the information directly related to the federal permit issued to cover the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA). Recall that the HSWA Portion of the RCRA Permit (i.e., the "HSWA Permit") along with the Post-Closure Permit issued by the Mississippi Department of Environmental Quality (MDEQ) together constitute the full RCRA Permit for your facility.

EPA's review found some inadequacies with the application sections which pertain to the HSWA Permit. Enclosed with this letter, please find comments on the application. The response to comments and revised or new application pages are due within thirty (30) calendar days of receipt of this letter. One (1) copy of the response to comments and revised or new application pages should be mailed to both Mr. Kumar and Mr. Cook at the following addresses:

Mr. Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division
U.S. Environmental Protection Agency
61 Forsyth Street SW
Atlanta, Georgia 30303
ATTN: South Programs Section

Mr. Toby Cook
Hazardous Waste Division
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

Please be aware that failure to furnish this information within the time frame given above may result in enforcement action or the assessment of a civil penalty pursuant to Section 3008 of RCRA.

If you have any question regarding this letter, then please contact Wesley S. Hardegree of my staff at (404) 562-8486.

Sincerely,

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

Enclosures: 1. NOD on Permit Application
2. 40 CFR §270.27
3. Format Table for Summary of Units Subject to Subpart CC
4. Methods of Compliance with Subpart CC Standards

cc: Jerry Banks, MS Department of Environmental Quality (Jackson Office - with enclosures)
R.D. Collins, Vice President, Koppers Industries (with enclosures)

EPA COMMENTS ON SECTION L OF THE RCRA PERMIT APPLICATION KOPPERS INC. - GRENADA FACILITY February 1998

Comment #1: Section L. Information Requirements for Solid Waste Management Units

a) The application summarizes by reference the up-to-date investigatory work performed under the 1988 HSWA Permit. Therefore, this part of the application compliments the general intent of the following paragraph found in the July 17, 1997, EPA letter on the application's content:

> Please note that the specific informational requirements of §270.14(d) do not have to be presented in the application since this type of information should already have been collected pursuant to conditions of the existing HSWA Permit (e.g., solid waste management unit (SWMU) location, wastes handled in a SWMU, etc. should already be noted in previous documents like the RFA Report, the RFI Work Plan or the RFI Report). In other words, the above summary listing of units and their corrective action status along with referenced documents should fulfill EPA - Region 4's interpretation of §270.14(d).

However, the application fails to provide the summary listing of units and their corrective action status. More specifically, the application fails to provide two of the three minimum requirements specified in the July 1997 letter. The application must be revised to include the following information which is necessary to satisfy Region 4's interpretation of those Part B Application requirements which deal with SWMUs:

1. The application should acknowledge that all HSWA corrective action conditions of the existing permit will continue beyond the permit expiration date if a new HSWA portion of the RCRA Permit is not issued on or before the expiration date. Permittee acknowledgment of the possibility for permit continuance after expiration, although not specific to §270.14(d) requirements, will avoid any potential confusion between the Permittee and EPA if a new permit is not issued before the current permit expires.

2. The application, pursuant to the spirit of §270.14(d), must list all SWMUs or areas of concern (AOCs) identified at the facility to date. This list must also specify the current corrective action status of

each SWMU or AOC (e.g., RFI completed or underway, no further action required at this time, CMS underway, Final Remedy Selected, Interim Measures completed or underway, etc.) and reference Agency approved or unapproved documents which support each SWMU or AOC's corrective action status.

b) According to Table 1.1 and associated text from the Phase II RFI Report, thirteen (13) SWMUs have been identified at the facility. EPA wants to ensure that no other units have been identified since the 1987 RCRA Facility Assessment (RFA). Have any other SWMUs or AOCs been identified pursuant to HSWA Condition II.A.2 since 1987?

Comment #2: Subpart CC Organic Air Emission Standards

The RCRA organic air emissions standards (40 CFR Part 264, Subpart CC) became effective on December 6, 1996. In addition to containing conditions to ensure compliance with Subparts AA and BB, all permits issued after December 6, 1996, must contain conditions to ensure compliance with Subpart CC. These conditions will be in the Federal portion of the RCRA permit until the State of Mississippi becomes authorized to implement the Subpart CC regulations in lieu of EPA.

In general, Subpart CC requires air emission controls for tanks, containers, and surface impoundments which manage hazardous wastes containing an average organic concentration greater than or equal to 500 ppmw at the point of waste origination. Specific exemptions to these requirements are outlined in the rule.

All facilities subject to the Subpart CC standards are required to notify EPA of all **affected units** by providing the information specified in 40 CFR §270.27 (see Enclosure 1). The information required includes identification of units subject to the standards, documentation for the equipment used to control emissions, and certification that the Subpart CC requirements have been met.

Please submit all information in hard copy and, if needed given the size of this site-specific response, electronic format (compatible with WordPerfect 6.1). In addition to the requirements of §270.27, please provide a summary of the units subject to Subpart CC in the format provided in Enclosure 2. In the event that the regulations are not applicable to your facility, please provide written notification of such claim within the time period specified in the cover letter.

ENCLOSURE 1

40 CFR Part 270.27 Specific Part B information requirements for air emission controls for tanks, surface impoundments, and containers

(a) Except as otherwise provided in 40 CFR 264.1, owners and operators of tanks, surface impoundments, or containers that use air emission controls in accordance with the requirements of 40 CFR part 264, subpart CC shall provide the following additional information:

(1) Documentation for each floating roof cover installed on a tank subject to 40 CFR 264.1084(d)(1) or 40 CFR 264.1084(d)(2) that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications as listed in 40 CFR 264.1084(e)(1) or 40 CFR 264.1084(f)(1).

(2) Identification of each container area subject to the requirements of 40 CFR part 264, subpart CC and certification[1] by the owner or operator that the requirements of this subpart are met.

(3) Documentation for each enclosure used to control air pollutant emissions from tanks or containers in accordance with the requirements of 40 CFR 264.1084(d)(5) or 40 CFR 264.1086(e)(1)(ii) that includes records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in ``Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.

(4) Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of 40 CFR 264.1085© that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in 40 CFR 264.1085(c)(1).

(5) Documentation for each closed-vent system and control device installed in accordance with the requirements of 40 CFR 264.1087 that includes design and performance information as specified in Sec. 270.24 © and (d) of this part.

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[1] If a facility is using DOT-compliant containers to comply with Subpart CC under 265.1087 (f) (1 - 4) or 264.1086 (f) (1-4), the facility must certify in writing all of the following to be in compliance with Subpart CC:

1. All containers must comply with 49 CFR Parts 178 & 179.
2. The facility is in compliance with 49 CFR Parts 180, 107 Subpart B, 172 & 173.
3. If the facility manages lab packs, the facility must be in compliance with 49 CFR Part 178.
4. The facility is in compliance with 49 CFR §173.12 (b) if the facility combines containers.

The facility should note that allowances and exceptions under the DOT regulations do not constitute allowances or exceptions under Subpart CC. If a facility is exempt from complying with 49 CFR §§178 & 179, the facility must still meet and comply with all Subpart CC regulations applicable. [40 CFR §265.1087 (f) (3) or 40 CFR §264.1086 (f) (3)]

(6) An emission monitoring plan for both Method 21 in 40 CFR part 60, appendix A and control device monitoring methods. This plan shall include the following information: monitoring point(s), monitoring methods for control devices, monitoring frequency, procedures for documenting exceedances, and procedures for mitigating noncompliances.

(7) When an owner or operator of a facility subject to 40 CFR part 265, subpart CC cannot comply with 40 CFR part 264, subpart CC by the date of permit issuance, the schedule of implementation required under 40 CFR 265.1082.

ENCLOSURE 2

SUMMARY OF HAZARDOUS WASTE MANAGEMENT UNITS SUBJECT TO SUBPART CC

Hazardous Waste Management Unit Type and I.D. No.	Location of Hazardous Waste Management Unit	EPA Hazardous Waste Code	Brief Waste Description	Average Volatile Organic Concentration of the Hazardous Waste	Subpart CC Status[1]	Control Option	Container Type (when applicable)
Example: Storage Tank 001	Tank Farm Y, See Figure X[2].	F001	Waste Halogenated Solvent	750 ppmw	Subject to Tank Level 1 controls per 264.1084©	Fill in corresponding number as indicated in Enclosure 3.	N/A
Example: Container Storage Unit A	Storage Building A, See Figure Y	F001-F005	Waste Solvents	500 - 1000 ppmw	Subject to Container Level 1 standards per 264.1086©	Fill in corresponding number as indicated in Attachment II.	Contain[illegible] Type A[3]

1 Provide documentation sufficient to verify that each unit meets the requirements of the specified status group, i.e. for Level 1 tanks, provide the capacity and organic vapor pressure of contents.

2 Figure X. would be a drawing of the facility (or portion of the facility) showing the location of the hazardous waste management unit

3 Container Type A would be a container with design capacity greater that 0.1 m^3 and less than 0.46 m^3

ENCLOSURE 3

METHODS OF COMPLIANCE WITH SUBPART CC STANDARDS

Tanks

1. These tanks shall comply with Level 1 controls which require tanks to have a fixed roof with no visible cracks, holes, gaps, or other spaces in accordance with 264.1084(c). The tank shall be visually inspected for defects initially prior to the tank becoming subject to the requirements and at least once every year thereafter. [40 C.F.R. 264.1084(c)].

2. These tanks are fixed-roof tanks equipped with an internal floating roof and shall comply with Tank Level 2 controls in accordance with 264.1084(e). The internal floating roof shall be visually inspected for defects at least once every 12 months after initial fill unless complying with the alternative inspection procedures in 40 C.F.R. 264.1084(e)(3)(iii). [40 C.F.R. 264.1084(d)(1)]

3. These tanks are equipped with an external floating roof and shall comply with Tank Level 2 controls in accordance with 264.1084(f). The external floating roof seal gaps shall be measured in accordance with the procedures contained in 264.1084(f)(3)(I) within 60 days and at least once every 5 years thereafter. The external floating roof shall be visually inspected for defects at least once every 12 months after initial fill. [40 C.F.R. 264.1084(d)(2)]

4. These tanks are vented through a closed-vent system to a control device and shall comply with Tank Level 2 controls in accordance with 264.1084(g). The tank shall be equipped with a fixed roof and closure devices which shall be visually inspected for defects initially and at least once every year. The closed-vent system and control device shall be inspected and monitored in accordance with 264.1087. [40 C.F.R. 264.1084(d)(3)]

5. These tanks are pressure tanks which shall comply with Tank Level 2 controls in accordance with 264.1084(h). [40 C.F.R. 264.1084(d)(4)]

6. These tanks are located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device and shall comply with Tank Level 2 controls in accordance with 264.1084(I). The closed-vent system and control device shall be inspected and monitored in accordance with 264.1087. [40 C.F.R. 264.1084(d)(5)]

7. These tanks have covers which have been specified as "unsafe to inspect and monitor" and shall comply with the requirements of 264.1084(l)(1). [40 C.F.R. 264.1084(f) & (g)]

Surface Impoundments

8. These surface impoundments shall have a floating membrane cover in accordance with 264.1085(c). The floating membrane cover shall be visually inspected for defects initially and at least once each year. [40 C.F.R. 264.1085(b)(1)]

9. These surface impoundments shall have a cover that is vented through a closed-vent system to a control device in accordance with 264.1085(d). The surface impoundment cover and its closure devices shall be visually inspected for defects initially and at least once each year. The closed-vent system and control device shall be inspected and monitored in accordance with 264.1087. [40 C.F.R. 264.1085(b)(2)]

10. These surface impoundments have covers which have been designated as "unsafe to inspect and monitor" and shall comply with the requirements of 264.1085(g). [40 C.F.R. 264.1085© & (d)]

Containers

11. These containers have a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 and meet the applicable U.S. DOT regulations under the Container Level 1 standards. The container shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(I) & (c)(1)(I)]

12. These containers have a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 and are equipped with a cover and closure devices which form a continuous barrier over container openings. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(I) & (c)(1)(ii)]

13. These containers have a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 and are open-top containers in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months.

[40 C.F.R. 264.1086(b)(1)(I) & c(I)(iii)]

14. These containers have a design capacity greater than 0.46 m^3, are not in light material service and meet the applicable U.S. DOT regulations under the Container Level 1 standards. The container shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(ii) & (c)(1)(I)]

15. These containers have a design capacity greater than 0.46 m^3, are not in light material service and are equipped with a cover and closure devices which form a continuous barrier over container openings. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(ii) & (c)(1)(ii)]

16. These containers have a design capacity greater than 0.46 m^3, are not in light material service and are open-top containers in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(ii) & c(I)(iii)]

17. These containers have a design capacity greater than 0.46 m^3, are in light material service and meet the applicable U.S. DOT regulations under the Container Level 2 standards. The container shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(iii) & (d)(1)(I))

18. These containers have a design capacity greater than 0.46 m^3, are in light material service and operate with no detectable organic emissions as defined in 40 C.F.R. 265.1081. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(iii) & (d)(1)(ii)]

19. These containers have a design capacity greater than 0.46 m^3, are in light material service and that have been demonstrated within the preceding 12 months to be vapor-tight using 40 C.F.R. Part 60, Appendix A, Method 27. The container and its cover and closure devices shall be visually inspected for defects at the time the container first manages hazardous waste or is accepted a t a facility. If a container remains at a facility for 1 year or more, it shall be visually inspected for defects at least once every 12 months. [40 C.F.R. 264.1086(b)(1)(iii) & (d)(1)(iii)]

20. These containers have a design capacity greater than 0.1 m^3 that are used for treatment of a hazardous waste by a waste stabilization process and are vented directly through a closed-vent system to a control device in accordance with 264.1086(e)(2)(ii). The closed-vent system and control devices shall be inspected and monitored as specified in 264.1087. [40 C.F.R. 264.1086(b)(2) & (e)(1)(I)]

21. These containers have a design capacity greater than 0.1 m^3 that are used for treatment of a hazardous waste by a waste stabilization process and are vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with 264.1086(e)(2)(I) & (ii). The closed-vent system and control devices shall be inspected and monitored as specified in 264.1087. [40 C.F.R. 264.1086(b)(2) & (e)(1)(ii))

HSI
GEOTRANS
A TETRA TECH COMPANY

3035 Prospect Park Drive
Suite 40
Rancho Cordova, California
95670

916-853-1800 FAX 916-853-1860

January 26, 1998
E:\PROJECTS\BEAZER\N410\EPARFCVR.LTR

Mr. Narindar Kumar
Chief, RCRA Branch
U.S. Environmental Protection Agency
61 Forsyth Street
Atlanta, GA 30303

Attn: Wes Hardegree

Re: Final Phase II RCRA Facility Investigation Report
Koppers Industries Incorporated
Grenada, Mississippi Facility
EPA I.D. Number MSD 007 027 543

Dear Mr. Hardegree:

On behalf of Beazer East, Incorporated (Beazer), enclosed are two copies of the Final Phase II RCRA Facility Investigation (RFI) Report, dated January 23, 1998. The RFI Report has been prepared in response to EPA comments dated June 12, 1996 and in accordance with the RCRA Facility Investigation, Work Plan Addendum, dated January 8, 1997. This report incorporates the results of investigations conducted in 1991 and supplemental investigations conducted in 1997 into a comprehensive RFI for the Site.

Beazer appreciates the EPA's patience and understanding while we resolved the wet weight versus dry weight data reporting issues. Results for soil samples collected during investigations in 1992 and earlier were reported on a wet weight basis. The wet weight results have been converted to dry weight concentrations using a conversion factor based on the dry weight of the soil sample. This provides a more conservative concentration for use in risk assessment calculations and also provides internal consistency.

Thank you again for the schedule extension. Beazer looks forward to continuing the remediation efforts at this facility. If you have any questions, please contact Mr. Michael Bollinger with Beazer at (412) 208-8864.

Very truly yours,

HSI GEOTRANS

Jeff Bensch

Jeffrey C. Bensch, P.E.
Project Manager

cc: David Peacock, MSDEQ
Michael Bollinger, Beazer East, Inc.
Paul Anderson, Ogden Environmental and Energy Services

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

APR 2 3 1997

RECEIVED
APR 2 9 1997
Dept. of Environmental Quality
Office of Pollution Control

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Michael Bollinger
Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, Pennsylvania 15219

SUBJ: Approval of RFI Work Plan Addendum
Koppers Industries Incorporated
Grenada, Mississippi
EPA I.D. Number MSD 007 027 543

Dear Mr. Bollinger:

The United States Environmental Protection Agency (EPA) and the Mississippi Department of Environmental Quality (MDEQ) have reviewed the draft RCRA Facility Investigation (RFI) Work Plan Addendum dated January 8, 1997, including the revisions dated April 9, 1997. This work plan was submitted in response to comments from EPA and MDEQ on the RFI Report which were included in a letter dated June 12, 1996.

The RFI Work Plan Addendum is hereby approved in accordance with Condition II.C. of your Hazardous and Solid Waste Amendments (HSWA) permit (effective date June 14, 1983). The RFI field work shall be implemented in accordance with the schedule in the approved work plan. EPA and MDEQ should be notified of any delays encountered in meeting this schedule.

Two copies of a revised RFI Report should be mailed to each of the following:

(1) Mr. Narindar Kumar
Chief, RCRA Branch
U. S. Environmental Protection Agency
61 Forsyth Street
Atlanta, Georgia 30303
ATTN: Wes Hardegree

(2) Mr. Jerry Banks, Acting Chief
Hazardous Waste Division
Mississippi Department of
Environmental Quality
Post Office Box 10385
Jackson, Mississippi 39429-0385
ATTN: David Peacock

EPA and MDEQ should be notified in advance of any field activity. If you have any questions regarding this letter, please contact Wes Hardegree of the South Programs Section at (404) 562-8486.

Sincerely,

Beverly F. Williams for

Narindar Kumar, Chief
RCRA Programs Branch
Waste Management Division

cc: David Peacock, MDEQ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

JUN 17 1997

4WD-RCRA

Michael W. Bollinger, Environmental Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219

SUBJ: Expiration of the HSWA Permit
EPA I.D. Number: MSD 007 027 543

Dear Mr. Bollinger:

The U.S. Environmental Protection Agency (EPA) - Region 4 is writing to remind you that the permit originally issued to Koppers Company, Inc. to cover the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) is set to expire on June, 14, 1998. As you know, the HSWA Portion of the RCRA Permit (i.e., the "HSWA Permit") along with the Post-Closure Permit issued by the Mississippi Department of Environmental Quality (MDEQ) together constitute the full RCRA Permit for your facility.

Pursuant to HSWA Permit Condition I.D.2 (40 CFR §270.10(h)), an application from the correct Owner/Operator is due one hundred and eighty (180) calendar days before the permit's expiration date. Therefore, December 17, 1997, is the last day for submittal of the reapplication to the Agency unless EPA approves a later submittal date. Currently, there is no basis for EPA to establish any date later than December 17, 1997.

It is EPA's intent to issue a new HSWA Permit prior to the expiration of the existing permit. However, if EPA fails to accomplish permit issuance prior to permit expiration, pursuant to HSWA Permit Condition I.D.3 (40 CFR §270.51(a)), there are two (2) conditions which must be met for the expired HSWA portion of the RCRA Permit to continue in force until the effective date of the new permit:

1. The Permittee has submitted a timely application under §270.14 and the applicable section in §270.15 through §270.29 which is a complete (under §270.10(c)) application for a new permit; and

2. The Regional Administrator through no fault of the permittee, does not issue a new permit with an effective date under §124.15 on or before the expiration date of the previous permit (for example, when issuance is impracticable due to time or resource constraints).

Pursuant to §270.14(d), all Part B Applications must include information on solid waste management units (SWMUs). Unless a complete Part B Application for the Post-Closure unit at the facility is necessary prior to December 17, 1997, then the information requirements listed below must be included in a "letter application" sent directly to EPA. This letter application will serve to satisfy the requirements of §270.14(d) and hence HSWA Permit Condition I.D.2.

The following information, at a minimum, is necessary to satisfy Region 4's interpretation of those Part B Application requirements which deal with SWMUs:

1. The application should acknowledge that all HSWA corrective action conditions of the existing permit will continue beyond the permit expiration date if a new HSWA portion of the RCRA Permit is not issued on or before the expiration date.

2. The application, pursuant to §270.10(a) and (b), must be signed by all owners/operators.

3. The application, pursuant to the spirit of §270.14(d), must list all solid waste management units (SWMUs) or areas of concern (AOCs) currently identified at the facility. This list must also specify the current corrective action status of each SWMU or AOC (e.g., RFI underway, no further action required at this time, CMS underway, Final Remedy Selected, etc.) and reference Agency approved or unapproved documents which support each SWMU or AOC's corrective action status.

Please note that the specific informational requirements of §270.14(d) do not have to be presented in the application since this type of information should already have been collected pursuant to conditions of the existing HSWA Permit (e.g., SWMU location, wastes handled in a SWMU, etc. should already be noted in previous documents like the RFA Report, the RFI Work Plan or the RFI Report). In other words, the above summary listing of units and their corrective action status along with referenced documents should fulfill EPA - Region 4's interpretation of §270.14(d).

If you have any question regarding this letter, then please contact Wesley S. Hardegree of my staff at (404) 562-8486.

Sincerely yours,

N. M. Kumar

Narindar M. Kumar, Chief
RCRA Programs Branch
Waste Management Division

cc: Jerry Banks, MS Department of Environmental Quality (Jackson Office)
Jeffrey C. Bensch, HSI GEOTRANS

HSI GEOTRANS
A TETRA TECH COMPANY

3035 Prospect Park Drive
Suite 40
Rancho Cordova, California
95670

916-853-1800 FAX 916-853-1860

May 2, 1997
D:\Grenada\EPARFIWP.Ltr

Mr. Narindar Kumar
Chief, RCRA Branch
U.S. Environmental Protection Agency
61 Forsyth Street
Atlanta, GA 30303

Attn: Wes Hardegree

Re: RCRA Facility Investigation Work Plan Addendum
Koppers Industries Incorporated
Grenada, Mississippi Facility
EPA I.D. Number MSD 007 027 543

Dear Mr. Hardegree:

On behalf of Beazer East, Incorporated, enclosed are two copies of the RCRA Facility Investigation (RFI) Work Plan Addendum, dated January 8, 1997, including the revisions dated April 9, 1997. These copies are being distributed in accordance with the United States Environmental Protection Agency's request dated April 23, 1997.

If you have any questions, please contact Mr. Michael Bollinger with Beazer East, Inc. at (412) 208-8864.

Very truly yours,
HSI GEOTRANS

Jeff Bensch

Jeffrey C. Bensch, P.E.
Project Manager

cc: David Peacock, Mississippi Department of Environmental Quality
Michael Bollinger, Beazer w/o enclosure

enclosure

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

April 9, 1997
D:\PROJECTS\BEAZER\GRENADA\RFICVR3.LTR

RECEIVED
APR 15 1997

Ms. Diane Scott
RCRA Permitting Section
Waste Management Division
U.S. EPA Region 4
100 Alabama Street
Atlanta, GA 30365

Re: RCRA Facility Investigation Work Plan Addendum
Koppers Industries Incorporated, Grenada, Mississippi Facility
EPA I.D. Number MSD 007 027 543

Dear Ms. Scott:

Beazer East, Incorporated, is pleased to submit the attached revised pages and project schedule for the RCRA Facility Investigation Work Plan Addendum (Work Plan) for the Koppers Industries Incorporated, Grenada, Mississippi Facility. This Work Plan was originally submitted to the United States Environmental Protection Agency (USEPA) and the State of Mississippi Department of Environmental Quality (MSDEQ) on January 8, 1997. Agency comments were discussed on February 25, 1997 in a conference call with the USEPA, MSDEQ, HSI GeoTrans, and Beazer. Subsequently, meeting minutes for the conference call were prepared and a few clarifications were discussed.

Beazer believes all agency comments have been addressed in accordance with USEPA suggestions, except the need to conduct polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo furans (PCDDs/PCDFs) sampling below grade in areas of known fill materials. Potential exposure pathways for PCDDs/PCDFs are by direct contact with soils, inhalation of fugitive dust, incidental ingestion of soil, and via storm-water runoff. PCDDs/PCDFs are very immobile and have extremely low solubilities in water. Therefore, the groundwater exposure pathway is not considered to be applicable to the site. In addition, due to the immobility of PCDDs/PCDFs, exposure by direct contact with, inhalation or ingestion of, or storm water runoff from subsurface soils cannot occur. As a result, the only potentially complete exposure pathways that require further investigation are related to surficial soils. To provide the information needed to evaluate these pathways, soil sampling for PCDD/PCDF analyses will occur in soils at depths between the ground surface and one foot below ground surface. Due to the absence of a complete exposure pathway, native materials below imported fill material greater than one foot thick will not be sampled for PCDD/PCDF analyses.

Beazer is prepared to immediately begin implementation of the proposed field activities as soon as weather allows - May or June, 1997. This should allow completion of the Final RFI Report by the end of September, 1997. As such, Beazer appreciates USEPA's timely review of the attached replacement pages and project schedule.

This letter also provides notification that Mr. Michael Bollinger will be serving as the Project Director for Beazer at the Grenada facility. In addition, Beazer has relocated their offices and the new address is:

Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219
Phone: (412) 208-8864
FAX: (412) 208-8869

Beazer trusts that the EPA is in agreement with this approach. If you have any questions, please contact me at the above numbers.

Very truly yours,

BEAZER EAST, INC.

for

Michael W. Bollinger, P.E.
Environmental Manager

enclosure

cc: David Peacock, MSDEQ
Robert Markwell, Beazer (w/o enclosure)
Jane Patarcity, Beazer (w/o enclosure)
Robert Lucas, Beazer (w/o enclosure)
Jeffrey Bensch, HSI GeoTrans

- Exposure to off-site ambient air, groundwater, surface water and/or sediment by off-site residents also will be considered (future land use at the Site boundary);

The results of the exposure pathway screening analysis will be used to select exposure pathways that are considered potentially complete and significant. The rationale for eliminating certain exposure routes will be provided (either in the text or in an appendix). Exposure pathways selected, as part of the screening analysis, will be further quantified and fully documented in the risk assessment.

Exposure point concentrations (EPCs) will be estimated for each COPC, study area, and exposure pathway evaluated in the risk assessment. National (USEPA, 1989a) and region-specific (USEPA, 1995a) guidance will be used when deriving EPCs. Estimation of EPCs will include the use of available data to calculate various statistics used when estimating EPCs (e.g., the Land [1971, 1975] method for deriving the 95th UCL on the arithmetic mean for lognormally distributed data), as well various fate and transport models if necessary, to estimate concentrations at the exposure point. Estimation of EPCs also may include the incorporation of lognormal kriging techniques, along with the standard methodology for estimating EPCs.

Also in the exposure assessment, chronic daily intakes (CDIs) will be estimated for each COPC and pathway using various dose equations and exposure parameter assumptions as outlined in USEPA guidance. In certain cases, supplemental CDIs also may be estimated using stochastic modeling techniques such as Monte Carlo simulation. In general, the Monte Carlo simulation will follow the approach outlined in USEPA guidance for conducting Monte Carlo simulation (USEPA, 1995a and 1994d).

3.1.3 Toxicity Assessment

The toxicity assessment will be conducted in accordance with available USEPA guidance (USEPA, 1989a and 1995a). Toxicity criteria data (i.e., slope factors and reference doses) will be obtained from IRIS (USEPA, 1996c), HEAST (USEPA, 1995c), and USEPA's Environmental Criteria and Assessment Office (ECAO) (as cited in USEPA, 1996d, or based on direct consultation if appropriate). The order of preference for toxicity criteria sources will be as follows: IRIS, HEAST, and finally ECAO. Toxicity data used in the risk assessment will be summarized in the baseline risk assessment in accordance with USEPA Region 4 guidance. In addition, toxicity equivalency factors (TEFs) for dioxin/furans and potentially carcinogenic polycyclic aromatic hydrocarbons (PAHs), as outlined in USEPA Region 4 guidance, will be utilized in the risk assessment. Subchronic oral and inhalation RfDs will be used for exposure pathways with an exposure duration of less than 7 years.

3.1.4 Risk Characterization, Uncertainty Analysis, and Conclusions

Toxicity criteria and CDIs will be combined to quantify potential noncarcinogenic hazards and carcinogenic risks associated with potential exposure to COPCs for the exposure pathways being quantitatively evaluated in the risk assessment. Results of the risk characterization will be presented in tables, in accordance with USEPA guidance (USEPA, 1995a and 1989a). The results of the risk characterization will be used to identify chemicals of concern (COCs), as well as identify areas at the Site that may pose a risk in excess of 1E-4 or a hazard quotient exceeding unity. The risk characterization also will consider multi-pathway and multi-chemical exposures. Carcinogenic risks and noncarcinogenic hazards associated with individual chemicals will be summed within exposure pathways to provide a total exposure pathway risks, and hazards will also be summed to determine total scenario-specific risks and hazards. Additionally, chemical-specific carcinogenic risks and noncarcinogenic hazards will be summed to identify total chemical-specific risks and hazards across exposure pathways. In this way, multi-chemical exposures will be characterized in a manner that readily identifies both chemicals and exposure pathways warranting the most interest. In addition to the RME scenario, the risk assessment may include central tendency estimates, if appropriate, which may be based in part on Monte Carlo simulation.

The uncertainties associated with the results of the risk assessment will be evaluated. The primary areas of uncertainty may include: (1) environmental sampling and analysis; (2) estimation of exposure; and (3) toxicity criteria. It is anticipated that these uncertainties will be evaluated in a qualitative and semi-quantitative manner. If appropriate, additional quantitative uncertainty analyses will be conducted using Monte Carlo simulation techniques.

Finally, the results of the human health risk assessment will be summarized and conclusions drawn. A table compiling the results of the human health risk assessment also will be presented.

3.2 Ecological Risk Assessment

The ecological risk assessment will be revised based on the comments provided by USEPA on the draft risk assessment prepared by Dames & Moore. Based on USEPA comments (USEPA, 1996a), the revisions will include re-screening sediment and surface water data based on the latest ecologically-based screening criteria as outlined in USEPA Region 4 guidance (USEPA, 1995b).

4.1.1 Site-Wide Groundwater Flow Patterns

Wells completed in the Upper Sand and the Lower Sand Zones represent two aquifers that are separated by the Upper Low-Permeability Zone over most of the Site. A review of well construction data for the wells screened in the Lower Sand Zone indicate that the wells were constructed properly with appropriate seals through the Upper Low-Permeability Zone. This is further highlighted by the noted differences in water levels between the Upper Sand and Lower Sand Zones at any well cluster. Although the potentiometric surfaces for these units in the IM study area were presented in the Draft RCRA Interim Measure Predesign Investigation Report and Conceptual Design (HSI, 1996d), previous data are limited because there is no data set that contains measurements from all monitoring wells for one period of time (i.e., within two to three days).

Figures 2-1 and 2-2 summarize what is currently known about the groundwater flow patterns and impacts by pentachlorophenol in the Upper and Lower Sand Zone wells, respectively. The water-level data used in these figures are averages of the available historical measurements, and water quality data are posted in graphical form for selected wells. Regional flow in the Upper Sand Zone is toward the northeast with local discharge to the Central Ditch.

Groundwater flow in the Lower Sand Zone is also toward the northeast as shown on Figure 2-2. Some localized hydraulic influence from the Central Ditch was noted during the IM field studies performed in the summer of 1996 (HSI, 1996d). This influence generally corresponds to where the overlying Upper Low-permeability Zone is absent.

If water levels are measured in all wells during a short time frame, a more accurate flow pattern can be mapped for these strata, and will prove useful for understanding the pattern of water-quality impacts. The proposed scope of additional groundwater level data collection is presented in Section 5.0.

will be taken over as short a time period (i.e., two to three days) as practical to minimize time-dependent variations in fluid levels. Methods of fluid level measurement are described in Section 6.3.

5.1.2 Subtask 1.2 - Complete Understanding of Horizontal and Vertical Extent of Groundwater Impacts

The site-wide horizontal and vertical extent of impacts to groundwater will be determined by sampling selected existing and newly-proposed wells across the entire site. The wells chosen for this purpose will be completed in either the Upper or Lower Sand Zone, and will generally be part of a pair or cluster of wells. As noted in Section 4.1.1, the well clusters are constructed properly to provide representative samples from the individual zones. Data from well pairs or clusters will be used to evaluate the vertical connection between the Upper and Lower Sand Zones. The site-wide network of monitoring wells will be extended with a minimum of one new well cluster, downgradient at the plume boundary. The following strategy has been developed for locating the eastern edge of the dissolved-phase plume to guide the placement of a minimum of one additional monitoring well cluster:

- Geoprobe sampling technology will be used to obtain groundwater samples emanating away from the Central Plant Area. Most proposed Geoprobe locations are along established roadways for ease of access. Geoprobe sampling technology is an ATV-mounted hydraulically driven soil sampler that retrieves 2-ft soil cores for continuous logging without the generation of cuttings. Once at the targeted depth (approximately 20-feet for the Upper Sand Zone and 45-feet for the upper portion of the Lower Sand Zone), the sampler is retracted and a slotted piece of tygon tubing is used to collect a groundwater sample. Sampling procedures are described in Section 6.0.

- Collected groundwater will be screened in the field for pentachlorophenol using an EnSys Ris field kit with resolution to 5 μg/L. Pentachlorophenol was chosen as the "indicator" chemical since it is among the most mobile of the constituents of concern and field screening kits are available.

- Locations which, based on field screening, indicate potential unimpacted conditions will then be resampled, with samples being sent to an off-site laboratory for confirmatory analysis of pentachlorophenol. Laboratory data will then be used to select the location for the proposed new monitoring well clusters.

A minimum of seven Geoprobe groundwater samples are anticipated, as shown on Figure 5-1. The locations are overlain on a map of currently available pentachlorophenol concentrations in the Lower Sand Zone.

Prior to Geoprobe sampling, well cluster R-39B/R-39C will be sampled and analyzed for pentachlorophenol in the field. If pentachlorophenol is detected, an additional Geoprobe sample will be collected to the northeast of R-39B/R-39C to better define plume boundary conditions. If the field screening at well clsuster R-39B/R39C does not detect pentachlorophenol (i.e., less than 5 μg/l) no additional Geoprobe sampling will be performed at that location. In general, Geoprobe sampling will move from an area of known impacts to the projected periphery of the plume using the field screening detection limit of 5 μg/l as a guideline for plume definition. Geoprobe groundwater samples will be used to guide the installation of a minimum of one new downgradient well cluster outside the leading edge of the impacted groundwater depending on the plume geometry defined by field screening. If the field screening suggests the plume geometry to be similar to that shown on Figure 5-1 (i.e., elongate with a single leading edge) then only one monitoring well cluster is proposed. If the leading edge plume geometry is wider and dispersed or bifurcated then one to two additional well clusters may be installed. The necessity and objectives of a groundwater monitoring program will be defined/evaluated upon determination of final site remedy. At that time the potential need for additional monitoring wells to support the program will be reevaluated. Wells not included in the program may be abandoned. Well drilling and construction details are provided in Section 6.2.

After installation and development of the new downgradient monitoring well cluster(s), site-wide groundwater sampling will be performed. Well clusters from across the Site and downgradient (off-site) screened in the Upper Sand Zone and the upper portion of the Lower Sand Zone will be sampled. Historically, the north portion of the Site (SWMU No. 12) has not shown impacts to groundwater. The southern portion of the Site is impacted by an off-site source with constituents unrelated to the Site. The Central Plant Area, however, has shown some impacts to groundwater related to Site operation. Based on an evaluation of existing monitoring wells relative to horizontal and vertical placement, as well as anticipated new well locations, 23 wells have been identified to sample.

The chosen wells should provide an "up-to-date" picture of existing site conditions relative to groundwater impacts both horizontally and vertically beneath the site. The selected wells, and selection rationale, are summarized in Table 5-1. The location of these wells are shown on Figure 5-2.

Well cluster R-10/10B was chosen to be representative of "upgradient" conditions relative to the Central Process Area (well R-10 being in the Upper Sand Zone and R-10B being in the Lower Sand Zone). Well clusters R-5/5B and R-8/8B were chosen to define the northwest extent of impacts based on current pentachlorophenol data. Well cluster R96-16/17 was chosen to define the southeast extent of impacts. Well cluster R-21/21B was chosen due to its downgradient location relative to the process cooling ponds (SWMU No. 6) and process are (SWMUs 1, 4, 9, and 10). Triple well cluster R-12/12B/12C was chosen due to its downgradient location relative to source area(s) with the historical data showing wells R-12 and R-12B to be impacted and R-12C (the deepest of the three wells) to be unimpacted.

Well 96-18 was chosen to be representative of an area where the Upper Low-Permeability Zone is absent and there is an upward vertical hydraulic gradient. Well clusters R-38/38B and R-39/39B were chosen since they are the two furthest downgradient and off-site well clusters being close to the expected dissolved-phase plume boundary. The (minimum of) two new proposed wells (one well cluster) will also be sampled to definitively provide control on the downgradient extent of impacts to groundwater relative to the Central Process Area.

Wells M-6, M-7 and M-8 are located downgradient of the closed Boiler Ash Landfill (SWMU 5) on the southern portion of the Site. A previous round of sampling showed low-level impacts to groundwater of benzene. These wells will be resampled to provide more current data for this portion of the Site.

5.1.3 Subtask 1.3 - Evaluate Dissolved Plume Attenuation Potential

As originally presented in the Draft RCRA Interim Measure Predesign Investigation Report and Conceptual Design (HSI, 1996d) there are indications of natural attenuation based on the observation of a substantial decrease in impacts over distance away (down gradient) from source areas. This may be an important factor in evaluating appropriate corrective measures alternatives for the dissolved phase plume. Therefore, relative to final corrective action development, additional data need to be collected to more quantitatively evaluate the potential natural attenuation at the Site. Groundwater data needed to evaluate attenuation mechanisms are described in this subsection.

The natural attenuation evaluation will focus on groundwater samples from the Upper Sand Zone and upper portion of the Lower Sand Zone. In areas where the Upper Low-Permeability Zone is absent, samples will be collected from corresponding elevations of the two zones.

Four locations will be sampled using the Geoprobe technology to evaluate natural attenuation potential at locations shown on Figure 5-3. Rationale for each location is presented on Table 5-2. The locations were chosen to be representative of a variety of conditions. Location 1 was chosen to be representative of background conditions (unimpacted). Location 2 was identified to be representative of some of the highest impacts to soil and groundwater at the Site (SWMU 11 area). Geoprobe location 3 is proposed in an area where the Upper Low-Permeability Zone is absent and there is an upward gradient between the Upper and Lower Sand Zones. Location 4 is at a downgradient location where impacts to groundwater are expected to be low.

The soil samples will be collected using the Geoprobe sampling method as described in Section 6.1. The Geoprobe method was chosen over test pit sampling because of the equipment already being present on-site for other sampling, the speed of sampling and the limited generation of investigation derived materials for disposal. The samples will be analyzed for PAHs, BTEX, and pentachlorophenol as specified in Section 6.9.

5.2.2 Subtask 2.2 - SWMU Sampling

Representative surface soil samples from the 0- to 1-ft depth interval are needed to complete the risk assessment for direct contact hazards relative to the SWMUs. As noted in Section 4, there are no data from within and around some of the SWMUs. In particular, USEPA identified that no samples were collected from within the actual boundaries of SWMUs 7, 11, and 12. A review of the data confirms this observation; however, if the SWMU is closed, or the impacted soils are isolated from potential direct contact hazards (for example, the soils are paved over), then samples from within the SWMU are not appropriate as they will not affect the risk assessment results. Therefore, sampling is proposed only for those SWMUs where a direct contact potential will be present in the future, and where soils data are not yet collected. SWMUs that have been closed, are undergoing removal actions, or are planned to be covered as part of the IM will not be sampled. Table 5-3 summarizes the proposed additional SWMU characterization to be performed. SWMU locations are shown on Figure 1-2.

In accordance with guidance (USEPA, 1994c), the "prescriptive" sampling approach is proposed for the SWMU areas to be addressed. Each SWMU will be divided into quadrants. A 25-ft by 25-ft grid will be established over, and extending past, each quadrant. Within each quadrant, five random sample locations will be chosen and a sample from the 0- to 1-ft depth interval will be collected. The individual samples will then be composited into one sample per quadrant (i.e., 4 samples per SWMU). The composited samples will be analyzed for PAHs and pentachlorophenol.

Relative to BTEX analysis, compositing is not an acceptable sampling technique due to the volatile nature of the compounds. Therefore, two random grab samples will be collected from each quadrant of each SWMU to be addressed (i.e., 8 BTEX grab samples per SWMU). The grab samples will be collected from the 0- to 1-ft interval.

Sample collection procedures are defined in Section 6.5. Analytical requirements are defined in Section 6.9.

5.2.3 Subtask 2.3 - PCDD/PCDF Sampling

The purpose of this sampling program is to characterize polychlorinated dibenzo-p-dioxin and polychlorinated dibenzo furan (PCDD/PCDF) concentrations in surface soils at the Site for risk assessment purposes to evaluate potential current and future exposures. PCDDs/PCDFs have been associated with wood treating operations through impurities present in technical grade pentachlorophenol. Both pentachlorophenol and PCDDs/PCDFs have been observed during investigations at other wood treating facilities. The previous investigations conducted at the Site have not included soil sampling and analyses for PCDDs/PCDFs.

The Site PCDD/PCDF sampling program will encompass facility areas where pentachlorophenol use has been documented. This area is graphically presented in Figure 5-5 and includes parts of the Central Plant Area (SMWUs No, 1, 4, 7, 9, and 10), the former WWT system area (SWMU 11), and portions of the Drip Track (SWMU 8).

Potential exposure pathways for PCDDs/PCDFs are by direct contact with soils, inhalation of fugitive dust, incidental ingestion of soil, and via storm-water runoff. PCDDs/PCDFs are very immobile and have extremely low solubilities in water. Therefore, the groundwater exposure pathway is not considered to be applicable to the site. In addition, due to the immobility of PCDDs/PCDFs, exposure by direct contact with, inhalation or ingestion of, or storm water runoff from subsurface soils cannot occur. As a result, the only potentially complete exposure pathways that require further investigation are related to surficial soils. To provide the information needed to evaluate these pathways, soil sampling for PCDD/PCDF analyses will occur in soils at depths between the ground surface and one foot bgs. Due to the absence of a complete exposure pathway, native materials below imported fill material greater than one foot thick will not be sampled for PCDD/PCDF analyses. A systematic sampling design (USEPA, 1989c) has been developed to collect samples uniformly over the designated areas. Random and stratified sampling approaches were also considered, however, the systematic sampling should provide a more accurate delineation of the impacts to soil. A triangular grid pattern (Figure 5-5) will be used to select the coordinates for systematic sample collection. The grid interval was calculated to be proportional to the size of the area to be characterized. A grid interval of 100 feet was calculated for the designated area, following USEPA and Michigan Department of Natural Resources (MDNR) protocol (USEPA, 1989c and MDNR, 1994). The MDNR protocol provides a simplified version of the EPA guidance that is useful for small areas, such as the area defined at the site.

A systematic triangular pattern will be superimposed on the area of investigation, such that a corner of a triangle coincided with the initial sample location. Sample locations will be identified at every other corner (from the initial sample) of the triangles located within or immediately adjacent to the target area, as shown on Figure 5-5. This systematic triangular pattern will be used to avoid sampling bias potentially introduced by unforseen spatial patterns in chemical distribution. The triangular grid sampling pattern represents approximately 25 percent grid stations, for a total of 32 sample locations. This number of samples is considered to be a large enough data pool for statistical analysis of:

- mean;
- variance;
- standard deviation;
- standard error of the mean; and
- upper confidence limit.

The triangular grid pattern sample locations will have samples collected as close as possible to the identified locations, subject to field constraints, such as traffic, paving, or facility structures. The impacted soils may not be uniformly distributed, therefore, each sample will consist of a composite of five discrete samples collected over a nominal 25 square-foot area, as described in Section 6.5. The samples will be composited in the field, according to the procedures in Section 6.5, to yield a single composite sample per location.

The PCDD/PCDF sampling program will include evaluations of potential PCDD/PCDF-related correlations specific to the Site that may be used to provide greater insight to the nature and extent of Site impacts and that may reduce the investigation time and resources. Since pentachlorophenol is the likely source of PCDDs/PCDFs at a wood treating site, it will be useful to establish a correlation between these two compounds. Correlations between specific PCDD/PCDF congeners and the 2,3,7,8-tetrachlorodibenzo-p-dioxin Toxicity Equivalency Factor (2,3,7,8-TCDD TEF) have been identified at other wood treating facilities. Specific congener correlations (if identified) may be used to maximize the amount of data generated at the Site while minimizing the corresponding costs.

The collected samples will be analyzed for and evaluated in the following manner:

1. Real-time field analysis of pentachlorophenol concentrations using EnSys pentachlorophenol Ris^c kits will be conducted. Half of the samples (16) will also be submitted for laboratory analysis of pentachlorophenol. The laboratory results will be compared to the Ris^c kit results, to evaluate whether an acceptable correlation exists between the two at the Site. The USEPA has accepted field Ris^c kit analysis results based on established site specific correlations at similar wood treating facilities. This has resulted in an increase in the amount of data generated with no corresponding increase of time or resources;

2. PCDD/PCDF analyses will be performed in two phases. Half of the samples (the same 16 samples mentioned above) will be analyzed for the "full suite" of PCDD/PCDF congeners by USEPA Method 8290. These results will be analyzed to evaluate whether a correlation exists between the 2,3,7,8-TCDD

TEF and a specific congener. An example of such a correlation is illustrated on Figure 5-6, which presents the correlation coefficient of 0.99 between the logarithms of the 1,2,3,4,6,7,8-HpCDD and 2,3,7,8-TCDD TEF values for samples collected at the Koppers Co., Inc. Superfund Site (Feather River Plant) in Oroville, California.

If a specific congener correlation to the 2,3,7,8-TCDD TEF is identified for Site data, and the data are within the upper and lower 95% confidence limits, the remaining 16 samples will be analyzed only for the identified correlated congener. The results of this analysis will be used to calculated the 2,3,7,8-TCDD TEF. If a correlation is not identified, the remaining 16 samples will be analyzed for the "full suite" of PCDD/PCDF congeners; and

3. The laboratory pentachlorophenol results will be evaluated in conjunction with the analysis of PCDD/PCDF congeners, to evaluate whether a correlation exists between pentachlorophenol and 2,3,7,8-TCDD TEF.

5.3 *Task 3 - Data Evaluation and Risk Assessment*

Upon completion of all field activities, new data will be organized and assimilated using the Geographical Information System (GIS), SiteGIS 1.2. Data management procedures are provided in Section 8.0 relative to the SiteGIS system.

All existing and new data necessary for completion of the RFI and risk assessment will be summarized and tabulated. The risk assessment will be performed in accordance with the detailed procedures defined in Section 3.0 of this RFI Work Plan Addendum. The results of the risk assessment will be used to refine the preliminary CAOs presented in Section 2.3 and to guide the development of potential corrective measures alternatives in response to the CAOs.

5.4 Task 4 - Final RFI Report Preparation

The data evaluation and risk assessment results will be presented in the Final RFI Report. The Final RFI Report will include, but not be limited to, the following:

- Executive Summary;
- Site History/Background;
- Objectives;
- Documentation of Supplemental Investigation Field Activities;
- Local and Regional Geology/Hydrogeology;
- Conceptual Site Model;
- Constituent Distribution Maps,
  - Soil,
  - Groundwater;
- Risk Assessment; and
- Summary and Conclusion.

A Final RFI Report will be submitted to USEPA and MDEQ upon the completion of these tasks.

At the base of the zone targeted for a water sample collection (approximately 20-ft bgs for samples from the Upper Sand Zone and 45-ft bgs for samples from the upper portion of the Lower Sand Zone), a temporary well point consisting of perforated tygon tubing will be set through the sampling pipe, and a representative groundwater sample will be collected using a peristaltic pump. The samples will be placed directly into laboratory prepared containers. Upon sample collection, the Geoprobe will be extruded, and the hole will be properly abandoned using bentonite. Geoprobe holes will be abandoned by pouring a fine bentonite, such as Benseal (30 mesh), and tamping down with a rod to ensure proper placement.

6.2 Well-Installation Procedures

A minimum of one additional well cluster consisting of two of groundwater monitoring wells will be installed on the outside of the defined downgradient extent of impacts to complete the horizontal and vertical delineation of impacted groundwater. The location of this well cluster will be determined based on Geoprobe field screening and laboratory verification sampling as defined in Section 5.1.2. This subsection describes drilling, soil sampling, well construction, and development procedures.

6.2.1 Drilling Methodology

Borings will be advanced using the hollow-stem auger method with 4 1/4-in inside-diameter (ID) augers. This method allows for the recovery of relatively undisturbed soil samples for VOC screening and/or analysis. It also facilitates identification of saturated soils, which is difficult using wash-rotary methods. This will allow more accurate selection of the appropriate well- completion depths. Target completion depths for shallow wells are 15- to 20- ft bgs (Upper Sand Zone). Target completion depths for deeper wells are 40- to 50- ft bgs (Upper portion of Lower Sand Zone).

For logging purposes, subsurface soil samples will be collected using continuous 5-ft split barrel sampler. Soil samples will be described in the field using the Unified Soil Classification System (USCS). Sample descriptions will, at a minimum, include color, grain size, texture and water content. A PID with an 11.7eV probe, or equivalent, will be used to field screen each soil sample for total volatile organic vapors. PID readings will also be taken downhole and in the breathing zone for health and safety purposes. All drill cuttings will be containerized in 55-gallon drums for subsequent analysis for the chemicals-of-concern (COC) and appropriate disposal.

For the monitoring well cluster to be installed, the deep boring will be drilled, logged and completed as a well. The drill rig will then be off-set approximately 10- ft and the shallow boring will be drilled directly to completion depth without logging as the deep log should suffice for lithologic control.

6.2.2 Well Construction

All well materials, equipment, and tools used in well construction will be thoroughly decontaminated prior to well construction as described in later Section 7.2.2. Well screen and riser pipe will be isolated from contact with surface soils by wrapping them with visquene (or equivalent) immediately after decontamination. The Site Geologist will supervise and document all drilling and well-construction activities in the Field Logbook.

Typical well construction details are shown on Figure 6-1. Each monitoring well will be constructed through the hollow stem augers. The wells will be constructed of 2-in I.D., Schedule-40 threaded PVC riser to just above the water table at which point stainless steel casing will be used with 0.020-in machine-slotted stainless steel screen. The shallow well will have 10-ft of screen with 5-ft of screen above the water table to accommodate fluctuating water levels. The deeper well will have 5-ft of screen.

The annular space around the screen will be backfilled with clean, 10/14-grade silica sand to a depth of two-ft above the top of the screen. All wells will be constructed with three feet of bentonite pellets or chips placed immediately above the sand pack. The bentonite will be hydrated with at least 15 gallons (gal) of potable water and allowed to swell for a minimum of eight hours. The remainder of the annular space will be backfilled with a cement/bentonite grout mixed at a ratio of five percent (by weight) bentonite, and hydrated at a rate of eight gal per sack of cement. The grout will be placed by the tremie method. All wells will be completed with locking caps and protective casings with approximately three feet of stickup and a concrete runoff diversion apron. The protective casing will be painted white and will be wrapped with high visibility reflective tape to KII-facility monitoring-well specifications.

Upon completion of field work, the new wells will be plotted on a site map and top of casing elevations will be surveyed by State of Mississippi licensed surveyor. Specifications consist of horizontal control will be ±1 ft, and vertical control for the top of casing elevation will be ±0.01 ft, and ground surface elevation to ±0.1 ft.

6.2.3 Well Development

All new wells will be developed using the bail and surge method. A minimum of five casing volumes of water will be removed and field measurements of pH, specific conductance and temperature will be monitored to document stable conditions. Well-development will be documented in the field log. Purge water from the wells will be containerized for sampling and appropriate disposal.

6.3 Water Level Measurements (Subtask 1.1)

Fluid levels will be measured in all wells with an electric sounder/interface probe capable of detecting any floating LNAPL greater than 1/8 inch thick. The depth to the LNAPL and/or water from the top of the PVC well casing (north side by convention) will be recorded in a log to the nearest 0.01 ft. The presence and thickness of DNAPL will be determined by sounding the bottom of each well with a cotton string and fishing weight. If DNAPL is present, it will show as a discolored length of string. The length of DNAPL on the bottom of the string will be measured with a steel tape and recorded in the Field Logbook.

The water level in the Central Ditch will be measured from the most upstream railroad bridge crossing near the center of the Site. The measurement will be made from the upstream side of the bridge using the floor of the bridge as the measuring point. If temporary well OB-1 is still in place downstream, a static water level from it will be measured to approximately the stream level about 500 ft downstream of the bridge.

6.4 Monitoring Well Sampling (Subtask 1.2)

Groundwater samples will be collected from the monitoring wells listed in Section 5.1.2. Well sampling will be performed as described below:

- Depth to water, thickness of product (if applicable) and total depth of each well will be measured using an electric water level indicator and/or an interface probe. The volume of water in the well casing will then be calculated.
- A minimum of three well volumes of water will be purged from the well with Teflon bailer.
- Purging will continue until three successive measurements of pH, specific conductance and temperature indicate stable conditions to ensure that the sample is representative of formation water. If the well bails dry before removing three complete well volumes, the well will be allowed to recharge for 15 minutes or until an adequate volume of water is available and sample collection can be initiated.
- The sample will be collected using a Teflon bailer. Sample water will be poured directly into laboratory prepared containers.
- The bailers will be decontaminated between each use by scrubbing with an Alconox solution, followed by thoroughly rinsing the bailer with distilled water.

All samples will be containerized, iced and shipped in accordance with USEPA protocols. A completed chain-of-custody form will accompany each sample shipment. Sample packaging and handling procedures are described in Section 6.8.

6.5 *Surface Soil Sampling (Subtasks 2.2 and 2.3)*

Surface soil samples will be collected at specified locations from the 0- to 1- ft depth interval. Samples will be collected using clean stainless steel trowels or shovels. For surface soil sampling as part of additional SWMU area characterization (Subtask 2.2), five grab samples will be collected from each quadrant yielding a total of 20 grab samples. The five (5) grab samples from an individual quadrant will then be thoroughly composited in a stainless steel mixing bowl and placed directly into laboratory prepared containers. This will yield four (4) composite samples from each SWMU area to be addressed (i.e., one composite of five samples per quadrant). Two additional grab samples per quadrant will be collected and placed directly into laboratory prepared containers because the composition approach is not appropriate for BTEX. This will yield eight (8) grab samples for BTEX analysis per SWMU area to be addressed.

For the PCDD/PCDF soil sampling (Subtask 2.3), at each location within the grid, an approximate 5-ft x 5-ft square will be marked on the ground. Five discrete samples will be collected from the four corners and center of the square. The discrete samples will be placed into a stainless steel bowl and thoroughly mixed yielding one composite sample per (25 ft^2) location. The composited sample will be placed directly into laboratory prepared containers for analysis.

All equipment will be thoroughly cleaned between sample locations using an Alconox wash and a distilled water rinse.

6.6 *Field Quality-Control (QC) Samples*

For the RFI Work Plan Addendum, three types of QC samples will be collected and analyzed for solids and liquids sampled during this project:

- Field/Equipment blanks;
- Field duplicates; and
- Trip blanks.

The purpose behind each QC sample type is explained in Section 7.0. The sample-collection procedures for each QC sample type are outlined in the following subsections.

6.6.1 Field/Equipment Blanks

Field/equipment blanks will be collected during soil and groundwater sampling. The blanks will be analyzed for the same parameters as the investigative samples. The soil blank will be prepared by pouring clean silica sand directly into laboratory prepared containers. The groundwater blank will be prepared by pouring laboratory-provided distilled water from a decontaminated bailer directly into laboratory prepared containers. All blanks will be documented on a chain-of-custody form under a given sample number and submitted "blind" to the laboratory.

6.6.2 Duplicate Samples

Duplicate samples (co-located sample for solid matrices) will be collected from groundwater and soil matrices. The sampling procedures will be identical to those used for the investigative samples. The duplicate sample will be collected immediately after the investigative sample to minimize the possibility of loss of BTEX during sample collection.

6.6.3 Trip Blanks

One set of trip blank samples will accompany each sample shipment. Trip blanks will only be analyzed for BTEX if it is suspected that custody was breached, or if one of the investigative sample containers was broken during shipment.

6.7 Sample-Numbering System

Each sample, including QC samples, will be identified by a sample number. This project sample number will highlight the sample matrix and location and will be used for presentation of the data in the report. A listing of sample numbers will be maintained on the chain-of-custody form and in the Field Logbook.

10.0 PROJECT SCHEDULE

The proposed project schedule is provided on Figure 10-1. An aggressive schedule is proposed to complete the RFI Report during EPA's 1997 fiscal year. As such, timely communication among the project team members will be necessary to achieve this goal. A total project duration of 5 months is proposed.

Relative to the field effort, scheduling and mobilization of subcontractors will require approximately 2 weeks. Field work is expected to be completed within 3 weeks. Receipt of all laboratory analysis is projected to be an additional 2 weeks after completion of field work.

Data evaluation will commence immediately upon receipt of the first data. As the evaluation progresses, the data and findings will be integrated into the risk assessment. The risk assessment is expected to require 5 weeks to complete. A Draft RFI Report will be submitted approximately 6 weeks after completion of the risk assessment. The Final RFI Report will be submitted approximately 2 weeks after receipt of comments by the EPA.

Table 6-1

Summary of Sampling and Analysis Program

Sample Type	Subtask	Locations	Analyses								
			Water Level	Pentachlorophenol Field Screen	Pentachlorophenol	PAH	BTEX	PCDD/ PCDF	Nitrate	Orthophosphate	Microbial Count
Groundwater-Geoprobe for Plume Definition	1.2	1 through 7 as shown on Figure 5-1.		X	X[1]	X[1]	X[1]				
Groundwater-Geoprobe for Natural Attenuation Evaluation	1.3	1 through 4 as shown on Figure 5-3.			X				X	X	X
Groundwater-Monitoring Wells	1.2	Well Nos. R-10, R-10B, R-5, R-5B, R-8, R-8B, R-12, R-12B, R-12C, R-19, R-19B, R96-16, R96-17, R96-18, R-38, R-38B, R-39, R-39B, M-6, M-7, M-8, 2 new wells.	X		X	X	X				
Surface Soil-Geoprobe for Background	2.1	1 Through 5 in Identified Background Sampling Area (See Figure 5-3).			X	X	X				
Surface Soil-SWMU Characterization	2.2	SWMUs 1, 4, 7, 8, 9, and 10.			X	X	X				
Surface Soil-PCDD/ PCDF Sampling	2.3	1 through 32 as shown on Figure 5-4.		X	X[2]			X[3]			

1) Only analyzed by off-site laboratory for locations which, based on field screening for pentachlorophenol, indicates clean conditions (i.e., edge of plume defined and needs laboratory verification sampling).
2) A subset of 16 samples will be sent for laboratory analysis of pentachlorophenol.
3) All 32 samples will be sent to the laboratory. Fifty percent (16 samples) will first be analyzed for all congeners using EPA Method 8290. If a 1,2,3,4,6,7,8 HpCDD to 2,3,7,8 TCDD TEF correlation is verified then the remaining samples will only be analyzed for 1,2,3,4,6,7,8 HpCDD and 2,3,7,8 TCDD TEF will be calculated. If a correlation is not established, the remaining 16 samples will be analyzed for the full suite of congeners.

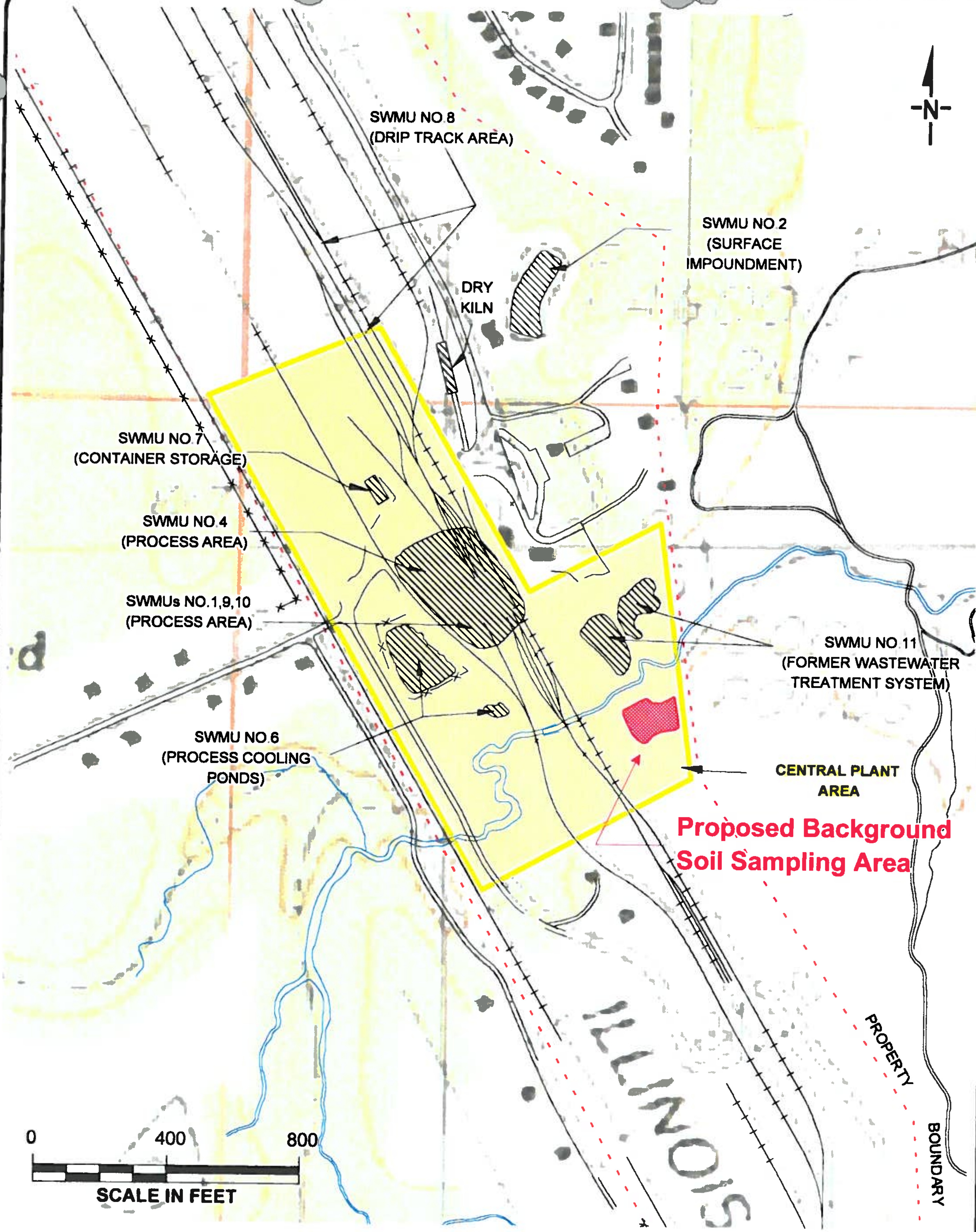


Figure 5-4. Proposed Area for Background Soil Sampling

HYDRO-SEARCH, INC.
A Tetra Tech Company

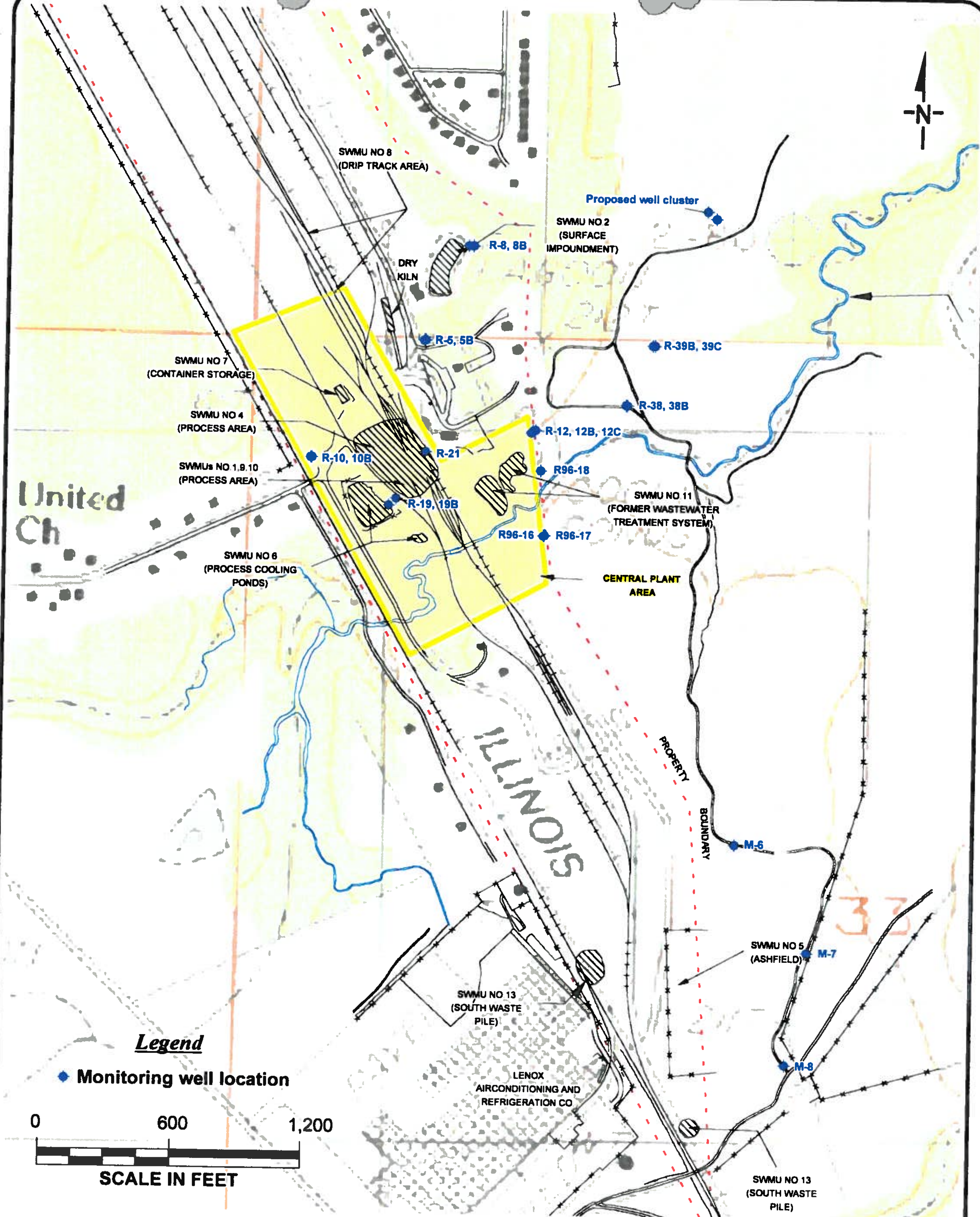
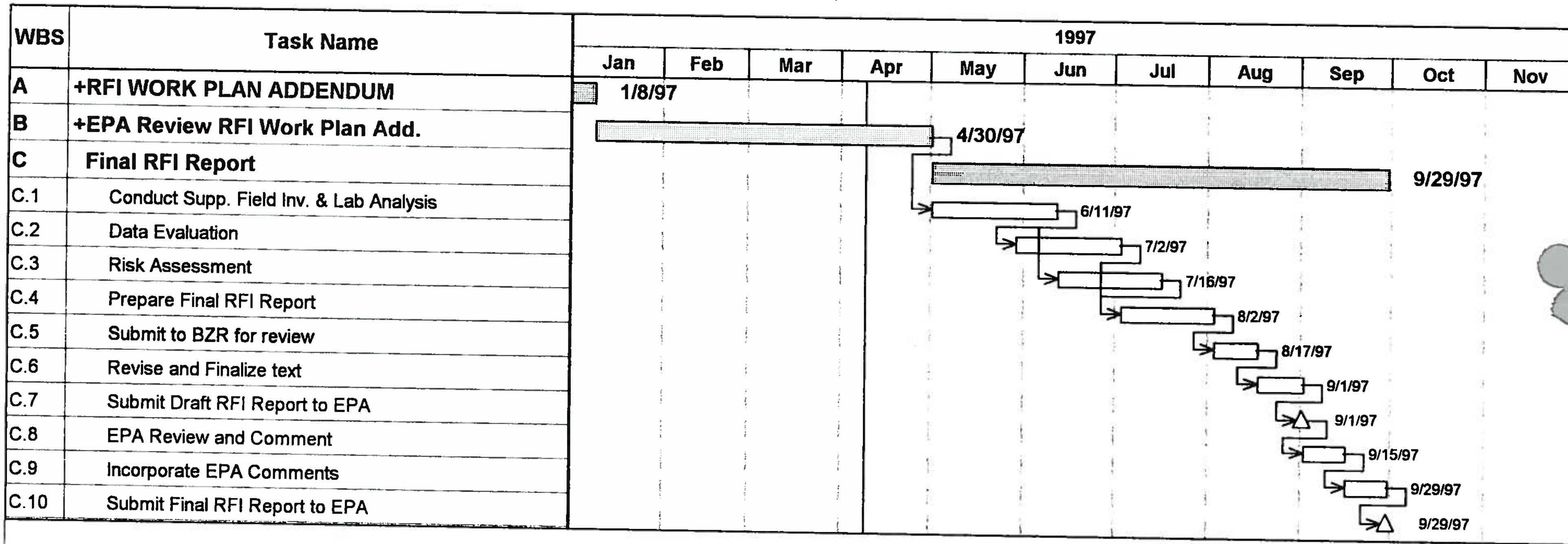


Figure 5-2. Proposed Monitoring Well Sample Locations.

HYDRO-SEARCH, INC.
A Tetra Tech Company

Figure 10-1

Beazer East, Inc.
Grenada, Mississippi Facility
Final RFI Report



Printed: 4/9/97

HSI GEOTRANS
A TETRA TECH COMPANY

3035 Prospect Park Drive
Suite 40
Rancho Cordova, California
95670
916-853-1800 FAX 916-853-1860

March 4, 1997
D:\PROJECTS\BEAZER\GRENADA\RVWMTG.TRN

Ms. Diane Scott
RCRA Permitting Section
Waste Management Division
U.S. EPA Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

Dear Ms. Scott:

On behalf of Beazer East, Inc., please find attached the meeting minutes for the February 25, 1997 conference call discussing EPA and State of Mississippi review comments.

If you have any questions regarding this information, please call Rob Markwell at (412)-227-2946.

Sincerely,

HSI GeoTrans

Jennifer Abrahams /for

Jeff Bensch, P.E.
Senior Engineer

cc: David Peacock, MS DEQ
Rob Markwell, Beazer East, Inc.
Mike Bollinger, Beazer East, Inc.
Rich Gnat, HSI GeoTrans
Don Lundy, HSI GeoTrans

Koppers Industries, Incorporated
Grenada Facility, Grenada, MS

RCRA Facility Investigation Work Plan Addendum
submitted to United States Environmental Protection Agency (EPA)
on January 8, 1997

Meeting Minutes from Conference Call
EPA and State of Mississippi Review Comments
February 25, 1997

Attendees: Diane Scott, EPA Region IV
David Peacock, MS DEQ
Rob Markwell, Beazer East, Inc.
Mike Bollinger, Beazer East, Inc.
Jeff Bensch, HSI GeoTrans
Rich Gnat, HSI GeoTrans
Don Lundy, HSI GeoTrans

A conference call was conducted on February 25, 1997 to discuss agency review comments on the following documents:

1. RCRA Facility Investigation Work Plan Addendum, January 8, 1997; and
2. RCRA Interim Measure Predesign Investigation Report and Conceptual Design, December 16, 1996.

This memorandum presents the minutes of the call. Replacement pages for the reports will be issued following concurrence by all parties on these meeting minutes.

1. RCRA Facility Investigation Work Plan Addendum

Agency Comment (AC): **The schedule presented in the cover letter, Section 10, and Figure 10-1 does not allow time for agency review and approval of the Final RFI report by September 30, 1997.**

Response: The schedule anticipates submittal of the report by September 30, 1997. This can be modified and field activities could begin in April 1997. Investigation activities may be more difficult due to the likelihood of rain in April and May; however, appropriate provisions can be made to accomodate the field effort. A revised schedule will be developed and provided to the EPA.

AC: **Have the off-site access issues been addressed for proposed off-site activities?**

Response: Beazer is in the process of locating property owners and seeking permission to access lands for investigation activities. It is anticipated that most of the work will be conducted near county road right-of-ways. Also, most of the work consists of temporary Geoprobe sampling and a minimal number of permanent well requirements.

AC: **Section 3.1.4, Will the risk assessment consider the risks associated with multiple constituents in addition to the risks from multiple pathways?**

Response: It is Beazer's intent to comply with the EPA guidance documents cited in the Work Plan Addendum. Beazer has confirmed with its risk assessment specialist that risks associated with multiple constituent and multiple pathways will be included in the risk assessment.

AC: **Section 5.1.2, Previous EPA comment questioned proper installation of past wells between lithologic zones. A discussion of this issue should be in this section.**

Response: HSI GeoTrans did review the well construction data for the existing wells and it appears that the wells were constructed properly. The hydraulic head differences between wells screened in the Upper and Lower Sand Zones further suggests proper construction. A discussion will be added to the text.

AC: **It appears that three downgradient well clusters will be required instead of one cluster as anticipated in the Work Plan. Also, an additional Geoprobe sample location may be necessary downgradient of wells R-39 B and R-39C.**

Response: A phased approach is proposed to locate the appropriate number of well clusters. A Geoprobe sampling program will be used to determine the number of downgradient well clusters necessary to define the leading edge of groundwater impacts. Well R-39B will be sampled and analyzed prior to the Geoprobe investigation to determine if site impacts exist in this area. Additional Geoprobe sampling may be added based on the results this analysis and concurrance by the EPA. Subsequent to defining the leading edge of groundwater impacts, it may be determined that additional wells are necessary to monitor groundwater impacts and verify that natural attenuation is achieving the remedial goals. ok

AC: **Table 6-1 identifies Geoprobe locations on Figure 5-2. Is this correct?**

Response: The correct reference is Figure 5-3. This reference will be corrected.

AC: **Regarding the proposed background sampling location: Has this area ever been flooded? Has treated wood been stored in this area? Is this area impacted by runoff from other site areas where treated wood is stored?**

Response: Approximately 15 feet of vertical relief exist from the bottom of the Central Ditch to this area, and this area is upstream of site activities; therefore it is expected that this area has not been impacted with Site constituents from a flood event. HSI GeoTrans has reviewed the historic site activities with plant personnel and it is understood that this area has not been used for wood treatment or treated wood storage. Beazer will verify with KII plant personnel the storm water runoff patterns in this area and reconfirm suitability for background sampling. Any changes will be submitted as revised pages to the Work Plan.

Ditch

AC: **Why are dioxins excluded from the background sampling?**

Response: Experience has shown that dioxins can be ubiquitous due to various sources unrelated to Site activities. In addition, corrective measures decisions will not be based on dioxin concentrations compared to background concentrations.

AC: **Why is the sampling area for dioxins limited?**

Response: Experience has shown that the dioxins at wood treating facilities are related to impurities in technical grade pentachlorophenol. Therefore, the dioxin sampling program is focused in areas of historic pentachlorophenol use. In addition, the program proposes to develop a pentachlorophenol vs. dioxin relationship to assist in further dioxin evaluations. This approach has been successful at other wood treating sites.

drip pad solidification [illegible] for installation drip pad F80-F90

AC: **Section 6.1, How will Geoprobe holes be properly abandoned?**

Response: Geoprobe holes will be abandond by pouring a fine bentonite, such as Benseal (30 mesh), and tamping down with a rod to ensure proper placement. Clarification will be added to the text.

OK

AC: **Section 6.2.2, Eight (8) hours are required for bentonite to hydrate prior to grouting.**

Response: Is it acceptable to take a field sample during the bentonite placement and monitor the hydration? It is likely to be adequately hydrated in a few hours, rather than eight. Well installation during the IM field studies included a 1 to 2 hour hydration period for the bentonite seal and there is no evidence of grout intrusion into the filter pack. The EPA will verify that field testing is acceptable in lieu of the eight hour time requirement.

AC: **Section 6.4, Use a Teflon bailer.**

Response: Teflon is acceptable and the text will be modified.

AC: **Section 6.6, Will equipment blanks be collected?**

Response: Yes. The nomenclature used in the Work Plan is misleading. The nomenclature will be modified to Field/Equipment Blanks.

AC: **Figure 5-2, Should wells 25 and 25-B be sampled since the had NAPL detections? R-21 is included in the text, but not shown on the figure. Should the samples from the Interim Measures predesign investigation, that were broken during shipment, be resampled?**

Response: Wells 25 and 25-B are in an area of known impacts; therefore, it does not appear necessary to replicate this information. R-21 will be added to the figure. Samples that were collected from SWMU-11 and were broken during shipment did provide meaningful data. Although these data would not satisfy the most stringent data quality assurance requirements, they still provide the necessary information to satisfy a data quality objective based solely on predesign study requirements. It is therefore not necessary to replicate this information to determine the appropriate corrective measures.

2. *RCRA Interim Measure Predesign Investigation Report and Conceptual Design*

AC: **Is DNAPL migration occurring off of the Upper Low-Permeability Zone?**

Response: The results of the predesign data collection program indicate that DNAPL has not migrated off of the Upper Low-Permeability Zone. The predesign investigation included deep and shallow borings to evaluate the potential for DNAPL impacts above and below the Upper Low-Permeability Zone. Above the Upper Low-Permeability Zone, the majority of the DNAPL exists as thin discontinuous lenses. Large vertical thicknesses of DNAPL or residual staining were not found. Therefore, there is no evidence of a historic or current DNAPL source or driving head to cause significant DNAPL migration. Below the Upper Low-Permeability Zone, only minimal impacts, such as staining and residual DNAPL, were observed in only a few wells in the upper portions of the Lower Sand Zone. Therefore, any potential DNAPL appears to be in a static equilibrium above the Upper Low-Permeability Zone. Groundwater modeling will be performed to quantify changes in groundwater horizontal velocities and vertical gradients resulting from interim measures activities, so that any alteration of the existing DNAPL equilibria conditions can be qualitatively assessed and addressed in the Interim Measures design.

AC: **What wells had measurable DNAPL?**

Response: R-36, R96-6, PW-2, and OB-3.

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

February 7, 1997

Ms Diane Scott
RCRA Permitting Section
Waste Management Division
USEPA Region IV
100 Alabama Street
Atlanta, GA 30365

Re: Review of RFI Workplan Addendum
Koppers Industries, Grenada, Mississippi

The following comments have been generated based on a review of **RCRA Facility Investigation Work Plan Addendum - Koppers Industries Incorporated, Grenada, Mississippi** submitted by Beazer East, Inc.

Section 5.1.2 Subtask 1.2 - Section makes continued reference to "minimum of one downgradient well cluster to be added. Based on plume description as identified in Figure 5.1, and placement of Geoprobe borings shown in same figure, a minimum of three well clusters would be more accurate.

Section 5.2.1 Subtask 2.1 - The location for collection of background soil samples is identified in Figure 5-4. Section states "This area was selected because there is no historical record of waste placement or other site related operations." How close is this area to locations where treated wood is or has been stored? Based on proposed location's proximity to Central Ditch, would past overflow events have any impacts on location for background sampling?

Section 5.2.3 Subtask 2.3 - Page 5-8 and Figure 5-5 identified those areas of the facility that would be included in the PCDD/PCDF sampling program. What rationale was used for not included the pentachlorophenol treated wood storage areas in this sampling program?

Section 6.1 - Section states that following sample collection the Geoprobe will be extruded, and the hole will be properly abandoned using bentonite. No section could be found that identified proper abandonment procedures. It should be noted that State of Mississippi regulations require that any borehole exceeding 25 feet in depth has to be abandoned by using bentonite grout placed "using the tremie method". Boreholes less than 25 feet can use placement of bentonite via gravity or "freefall" method.

Sincerely,

David K. Peacock
Hazardous Waste Division

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

January 8, 1997
D:\PROJECTS\BEAZER\5060 RFIEPACV.LTR

Ms. Diane Scott
RCRA Permitting Section
Waste Management Division
U.S. EPA Region 4
100 Alabama Street
Atlanta, GA 30365

Re: RCRA Facility Investigation Work Plan Addendum
Koppers Industries Incorporated, Grenada, Mississippi Facility
EPA I.D. Number MSD 007 027 543

Dear Ms. Scott:

Beazer East, Incorporated, is pleased to submit the RCRA Facility Investigation Work Plan Addendum for the Koppers Industries Incorporated, Grenada, Mississippi Facility. This report is submitted in accordance with USEPA comments, dated June 12, 1996, on the revised Draft Phase II RFI Report and Beazer's letter response to those comments, dated August 30, 1996.

This work plan addendum is intended to integrate existing data from previous studies to identify remaining data needs for completing the risk assessment and selecting the final site corrective measures. The following objectives are identified for completion of the RFI:

- Evaluate potential exposures to Central Ditch sediments;
- Evaluate the nature and extent of off-site groundwater impacts and associated potential exposures;
- Characterize surficial soil background conditions;
- Characterize and evaluate the presence of PCDD/PCDF in surface soils; and
- Evaluate exposures to on-site surface soils within SWMU boundaries.

Beazer is prepared to immediately begin implementation of the proposed field activities as soon as weather allows - May, 1997. As such, Beazer appreciates EPA's timely review to allow response to any comments or questions that the EPA may have. Following completion of the field activities, it is anticipated that the Final RFI Report can be submitted during September, 1997.

Beazer trusts that the EPA is in agreement with this approach. If you have any questions, please contact me at (412) 227-2189.

Very truly yours,

BEAZER EAST, INC.

Jeff Bensch for
Donald A. Ruggery, Jr., P.G.
Environmental Manager

Enclosure

cc: David Peacock, MSDWR
Michael Bollinger, Beazer (w/o enclosure)
Robert Markwell, Beazer (w/o enclosure)
Jane Patarcity, Beazer (w/o enclosure)
Robert Lucas, Beazer (w/o enclosure)
Jeffrey Bensch, HSI GeoTrans

FLUOR DANIEL GTI

RECEIVED
DEC 27 1996
Dept. of Environmental Quality
Office of Pollution Control

Certified Mail P 136 220 205

December 23, 1996

Ms. Diane Scott
US Environmental Protection Agency, Region IV
100 Alabama Street, South West
Atlanta, GA 30303

Re: Soil Stockpile Removal Update
Koppers Industries, Inc. Facility
Grenada, Mississippi

Dear Ms. Scott:

On behalf of Beazer East, Inc. (Beazer), Fluor Daniel GTI is pleased to inform you that all field activities associated with the removal of the soil containment units at Koppers Industries, Inc.'s Grenada, Mississippi facility have been completed. These activities were conducted to remove and dispose of stockpiled soils associated with the facility's previously-excavated process area.

All work was completed in accordance with the Soil Pile Removal Procedures submitted to your office on September 18, 1996. Fluor Daniel GTI will follow up with the documentation of these field activities by submitting a Removal Documentation Report to your office and to the Mississippi Department of Environmental Quality on or before January 31, 1997.

If you require any additional information prior to our submittal of the report, please contact me in our Memphis, Tennessee office at (901) 332-8055 or Mr. Bob Fisher at Beazer's office in Pittsburgh, Pennsylvania at (412) 227-2955.

Sincerely,
FLUOR DANIEL GTI, Inc.

JT Townsend

Jon T Townsend, PE
Professional Engineer (MS 12667)

c: David Peacock, MDEQ
Bob Fisher, Beazer
Thomas Henderson, Koppers Industries
Rick Yocius, Fluor Daniel GTI

JTT'sdiskBzr/Grnda122396jt.md01003/0664/03 D3906

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

RECEIVED
DEC 18 1996
Dept. of Environmental Quality
Office of Pollution Control

December 16, 1996
WP51\BEAZER\5100\IMEPACVR.LTR

Ms. Diane Scott
RCRA Permitting Section
Waste Management Division
U.S. EPA Region 4
100 Alabama Street
Atlanta, GA 30365

Re: RCRA Interim Measure Predesign Investigation Report and Conceptual Design
Koppers Industries Incorporated, Grenada, Mississippi Facility
EPA I.D. Number MSD 007 027 543

Dear Ms. Scott:

Beazer East, Incorporated, is pleased to submit the RCRA Interim Measure Predesign Investigation Report and Conceptual Design for the Koppers Industries Incorporated, Grenada, Mississippi Facility. This report is submitted in accordance with the Interim Measures Work Plan (AWD, 1994) that was approved by the EPA in September, 1995 under USEPA Region IV's corrective action stabilization initiative. This report presents:

- The results of the predesign field investigation activities conducted during June and July, 1996;
- An updated conceptual model of the study area; and
- A conceptual design for interim measures to mitigate evident exposure pathways that may pose significant risks.

As we have discussed, Beazer is prepared to immediately begin design and implementation of the proposed interim measures. Beazer understands that the EPA is in agreement with this approach and will provide review comments in a timely manner.

If you have any questions, please contact me at (412) 227-2189.

Very truly yours,

BEAZER EAST, INC.

Jeff Bensch for
Donald A. Ruggery, Jr., P.G.
Environmental Manager

Enclosure

cc: David Peacock, MSDWR
Michael Bollinger, Beazer (w/o enclosure)
Robert Markwell, Beazer (w/o enclosure)
Jane Patarcity, Beazer (w/o enclosure)
Robert Lucas, Beazer (w/o enclosure)
Jeffrey Bensch, Hydro-Search

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

RECEIVED
SEP 19 1996
Dept. of Environmental Quality
Office of Pollution Control

September 18, 1996

Ms. Diane Scott
U.S. EPA Region IV
100 Alabama Street, South West
Atlanta, GA 30303

Re: Soil Pile Removal Procedures
Koppers Industries, Inc. Facility
Grenada, Mississippi

Dear Ms. Scott:

Per your telephone conversation with Mr. Don Ruggery, please find enclosed for your reference and review, one copy of the Soil Pile Removal Procedures associated with the previously excavated process area soils that are currently maintained within three (3) soil containment structures at the Koppers Industries, Inc. Facility located in Grenada, Mississippi.

Beazer's current project operations schedule requires that the removal/disposal activities be initiated the week of September 29, 1996. Your expeditious review of the removal procedures will be most appreciated.

Please call me at (412) 227-2955 or Don Ruggery at (412)227-2189 if you have any questions or require additional clarification.

Very truly yours,

Bob

Robert A. Fisher
Manager - Operations

cc: B. Lucas
D. Ruggery
D. Peacock, MDEQ
T. Henderson, KII

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

OCT 0 2 1996

RECEIVED
OCT - 9 1996
Dept. of Environmental Quality
Office of Pollution Control

4WD-RCRA

Mr. Donald A. Ruggery, Jr., P.E.
Associate Program Manager
Environmental Group
Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219

SUBJ: Request for Extension - RFI Work Plan Addendum
Koppers Industries, Inc.
Grenada, Mississippi
EPA I.D. Number - MSD 007 027 543

Dear Mr. Ruggery:

The U.S. Environmental Protection Agency (EPA) is in receipt of your letter dated August 30, 1996, in which you request an extension for submittal of the RCRA Facility Investigation RFI) Work Plan Addendum. As we discussed in our meeting on September 12, 1996, EPA approves an extension of the deadline for this submittal to October 25, 1996.

If you have any questions, please call Diane Scott of the RCRA Programs Branch, South Programs Section at (404) 562-8501.

Sincerely,

H Kirk Lucius

H. Kirk Lucius
Acting Chief
RCRA Programs Branch
Waste Management Division

cc: David Peacock, MDEQ

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

August 30, 1996
WP51\BEAZER\5100\BEAZER.EPA

SEP 4 1996

Ms. Diane Scott
RCRA Permitting Section
Waste Management Division
U. S. EPA Region 4
345 Courtland Street, N.E.
Atlanta, GA 30365

RE: Response to Notice of Technical Inadequacy
Draft RCRA Facility Investigation Report
Koppers Industries Incorporated
Grenada, Mississippi
EPA I.D. Number MSD 007 027 543

Dear Ms. Scott:

Beazer East, Inc. (Beazer) has reviewed the referenced notice, and attached EPA comments, that Beazer received on June 17, 1996 regarding the RCRA Facility Investigation (RFI) report for the Grenada facility. The RFI Report was originally submitted on June 15, 1992; this report was revised based on preliminary verbal comments from the EPA and resubmitted on March 10, 1994. Beazer empathizes with some of the EPA's concerns and comments relayed in the notice, and Beazer has taken steps over the last three years to rectify some of these issues. Responses to EPA comments that illustrate Beazer's intentions for completion of the RFI are attached.

The purpose of this letter is to explain the steps that Beazer has taken and the proposed plan to complete a revised, meaningful, and final RFI. In addition, this letter requests an extension from the 90-day return period for delivery of an Addendum to the RFI Work Plan to conduct supplemental studies necessary for completion of the final RFI.

GENERAL RESPONSE

Nearly half of the EPA's comments are related to "data presentation" issues (e.g. insufficient information on figures, erroneous tables, lack of critical tables and figures, conflicting statements, etc.) that made the EPA's analysis of the report a difficult task. Beazer apologizes for any inconvenience this has caused. Beazer has subsequently compiled all available site sampling results into a database that has undergone quality control review. This process eliminated the previous tabulation errors and allows flexible presentation of the information in a variety of formats (figures, tables, graphs, etc.). The results of this database were shown in the Interim Measures Work Plan that was submitted to EPA in June 1994. Beazer believes these efforts, which will be included in the RFI Work Plan Addendum, will alleviate a great number of the EPA's concerns.

Portions of the EPA's comments are related to "data gaps". Some of the perceived data gaps will be filled by providing a clearer presentation of the available data and justification for the sampling rationale. Some of the real data gaps (e.g. presence/absence of basal clay) will be filled by the current Interim Measures pre-design activities. Any remaining real data gaps (e.g. dioxin/furan sampling) will be addressed in the RFI Work Plan Addendum.

Another major portion of the EPA's comments are related to the risk assessment assumptions and procedures. Beazer plans on taking an updated tiered approach to the risk assessment that will be included in the RFI Work Plan Addendum. The revised risk assessment will be clear, consistent with the most recent guidance documents, and scientifically defensible.

Preliminary responses to the EPA's comments are attached. These responses indicate how each comment will be incorporated into the Final RFI Report.

PLANNED APPROACH

To implement the changes discussed above, and provide the EPA and Mississippi DNR with a useful RFI report, Beazer has contracted with Hydro-Search, Inc., who is also implementing the Interim Measures Work Plan.

The first step Beazer is taking in revising the RFI is the development of a conceptual site model. A lot of information exists for the site that has been collected during past RFI activities and most recently as part of the Interim Measures pre-design field work. This information is being assimilated into a site database management system that will facilitate the analysis, interpretation, and presentation of the site characteristics. With this information, Beazer will develop a site conceptual model regarding source areas, release mechanisms, constituent fate and transport, exposure pathways and potential receptors, and Tier I risks. The conceptual model will be supported by maps, cross-sections, graphs, and tables generated from the site database.

Broad corrective action objectives (CAOs) will be developed to guide the process toward ultimate corrective action. These CAOs will be supported by the conceptual site model. Real data gaps will be identified that need to be filled to determine the actual site risks and the appropriate corrective measures for the site based on the site conceptual model. Data quality objectives will be set depending on the intended use of the data, and the proposed sampling strategy.

Following development of the conceptual site model and supplemental RFI sampling approach, Beazer would like to meet with the EPA and Mississippi Department of Natural Resources (MDNR) to present and discuss the conceptual model, proposed investigation plan, and proposed risk assessment approach. From this meeting, a concurrence can be developed before finalizing the RFI Work Plan Addendum. Beazer would also like to present the progress with the Interim Measures (IM) field activities at this meeting. As we have discussed, this meeting is scheduled for September 12, 1996.

SCHEDULE

Based on EPA's notice and comments, an addendum to the RFI Work Plan is due to the EPA by September 16, 1996. Beazer believes that the current IM field activities will provide critical data to the RFI Report and, therefore, requests that delivery of the RFI Work Plan Addendum be postponed until these data can be incorporated into the conceptual site model. In addition, it is anticipated that the EPA will have comments and suggestions that can be incorporated following the September 12 meeting. As shown on the attached schedule, Beazer proposes to finalize the addendum to the Work Plan for submittal to the EPA on October 25, 1996.

Ms. Diane Scott
U. S. EPA Region 4
August 30, 1996
Page 4

Beazer looks forward to meeting with the EPA and continuing our remediation efforts. If you have any questions or would like to discuss the proposed approach, please contact me at (412) 227-2189.

Sincerely,

Jeff Bensch for
Donald A. Ruggery, Jr., P.G.
Environmental Manager
Beazer East, Inc.

cc: David Peacock, MS DWR
Tom Henderson, KII, Grenada
Steve Smith, KII, Pittsburgh
Jeff Bensch, Hydro-Search, Inc.

PROPOSED RESPONSES TO EPA COMMENTS DATED JUNE 12, 1996 ON THE DRAFT RCRA FACILITY INVESTIGATION REPORT DATED JUNE 15, 1992 PRELIMINARY REVISION MARCH 10, 1994

KOPPERS INDUSTRIES, INC., GRENADA, MISSISSIPPI FACILITY

RESPONSES TO GENERAL COMMENTS

General Comment 1.

Response: The primary limitation of the existing background data set is the number of samples collected and analyzed. It is proposed that a new background data set be developed. It is further proposed that the new background data set consist of a minimum of nine samples from different locations to create a statistically meaningful data set. The proposed sample locations, sampling methods and analytical requirements will be provided in the RFI Work Plan Addendum.

We concur that samples containing organic chemicals require further evaluation and that they may not accurately represent naturally occurring background conditions. According to Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A, EPA 1986) (HHEA), however, background conditions should be established for both anthropogenic (man-made chemicals) and nonanthropogenic (naturally occurring) chemicals. EPA states: "Polycyclic aromatic hydrocarbons (PAHs) and lead are other examples of anthropogenic, ubiquitous chemicals, although these chemicals also may be present at naturally occurring levels in the environment due to natural sources (e.g., forest fires may be a source of PAHs, and lead is a natural component of soils in some areas)." For this reason, the sample containing PAHs will be further evaluated to determine whether the PAHs represent non-site related anthropogenic chemicals or site-related chemicals. If it is concluded that the sample was collected from an area impacted by site-related activities, this sample will not be used with the proposed additional background samples.

General Comment 2.

Response: This comment summarizes an overall EPA concern regarding some specific comments relative to adequate definition of the extent of impacts associated with the Solid Waste Management Units (SWMUs). This General Comment will, therefore, be addressed in the responses to the specific comments below.

General Comment 3.

Response: This comment is similar to General Comment 2 and will also be addressed in responses to Specific Comments below.

General Comment 4.

Response: A dioxin/furan sampling and analysis program will be developed and incorporated into the RFI Work Plan Addendum.

General Comment 5.
Response: This comment, relative to risk assessment scenarios, generally agrees with the updated approach that Beazer is developing in accordance with the most recent EPA guidance documents. Beazer will provide additional details during the scheduled meeting with the EPA and further definition will be provided in the RFI Work Plan Addendum.

Beazer agrees that a risk assessment conducted under an industrial scenario provides the most meaningful information on current and future exposures and risks. This approach closely follows the recent EPA Directive "Land Use in the CERCLA Remedy Selection Process" (EPA 1995) for evaluating future land use and potential exposures. The final remedial action should be based on potential occupational exposures and assurances must be provided such that remediation is consistent with all potential exposures. For off-site migration of chemicals, where it may not be possible to impose institutional controls, risks will be estimated under the assumption of a residential scenario.

RESPONSES TO SPECIFIC COMMENTS

Specific Comment 1. Page 1-12.
Response: The new text of the final RFI report will reflect this change in current conditions.

Specific Comment 2. Page 1-13.
Response: This information will be provided to EPA in the text of the final RFI report.

Specific Comment 3. Figure 2-2. Page 1-15, Table 1.3.
Response: Appropriate modifications will be made in the final RFI report.

Specific Comment 4. Page 1-15, Table 1.3.
Response: Sample locations L-28, L-29, L-30, B-14, B-15 and B-16 were moved to the northeast of the initially proposed locations. This field modification was due to drill rig access considerations in a soft area of wood tie cutoff debris and sawdust. It is noted, however, that this area was recently accessed and investigated in July 1996 as part of the Interim Measures (IM) field activities by building a road made of wood ties across the area to support a drill rig. Samples were obtained from the area and will be reported in the IM Data Summary Report and the final RFI report.

Specific Comment 5. Sections 2.1.1 through 2.1.2.
Response: Samples were chosen in accordance with the approved Work Plan. Specific judgements used in the field in 1993 are not available. The existing data will be reviewed and data gaps will be identified on a holistic basis and will be provided in the RFI Work Plan Addendum.

Specific Comment 6. Sections 2.1.3, 2.1.6 and 2.1.7.
Response: This comment addresses apparent inadequate characterization of the nature and extent of SWMUs 7, 12 and 13. Each is addressed separately below.

SWMU 7 (Container Storage) - All existing data from RFI site investigation work and the most recent IM field work will be integrated into the conceptual site model and evaluated from a risk assessment perspective and an engineering design perspective relative to anticipated final remedy alternatives. If it is determined that additional data are needed relative to this SWMU, an appropriate sampling program will be developed and specified in the RFI Work Plan Addendum.

SWMU 12 (North Construction Debris Pile) - Beazer will evaluate the data and assess the need for additional sampling. If it is determined that additional data are needed relative to this SWMU, an appropriate sampling program will be developed and specified in the RFI Work Plan Addendum.

SWMU 13 (South Construction Debris Pile) - Same response as for SWMU 12.

Specific Comment 7. Page 2-5, Section 2.1.4.
Response: The existing data and boring logs will be entered into the site database, reviewed, and the information will be provided in the final RFI report.

Specific Comment 8. Section 2.3.
Response: The potential for providing a conduit for the migration of constituents from one water bearing zone to another due to improperly constructed wells is also a concern of Beazer's. The existing well construction summaries will be reviewed to verify the proper construction of wells. If any concerns are identified, a well abandonment plan will be developed and included into the RFI Work Plan Addendum.

Specific Comment 9. Table 2.3.
Response: These issues will be addressed in the final RFI report.

Specific Comment 10. Section 2.5.3.
Response: Surface water samples were collected at the same locations as the associated sediment samples. The discrepancy appears to be between the locations shown on Figure 2-9 and the sample locations described in the text on page 2-19. This contradiction will be clarified in the final RFI report.

Specific Comment 11. Figure 4-1.
Response: This figure will be modified to show the 0 to 1 foot interval, 1 to 8 feet (average depth to ground water) interval and greater than 8 feet interval in the final RFI report. Similar maps will also be generated for specific constituents of concern at the site.

Specific Comment 12. Page 4-7.
Response: Any inconsistencies will be addressed in the final RFI report.

Specific Comment 13. Figures 4-10 through 4-12.
Response: The referenced cross-sections will be appropriately updated and will also include new data generated as part of IM activities. The modified sections will be included in the final RFI report.

Specific Comment 14. Figures 4-13 through 4-18.
Response: This comment generally highlights that the RFI report has not completely defined the lateral extent of ground water impacts. Some of these data gaps have already been addressed with the additional site investigation field work performed as part of the IM studies. For example, a well cluster was placed and sampled on the south side of the Central Ditch. Analytical data from this field effort is still pending. Once received the data will be evaluated and additional wells may be proposed as part of the RFI Work Plan Addendum, if necessary.

Specific Comment 15. Section 4 Data Tables.
Response: Data will be retabulated using the upgraded database system. Entries in the database will be cross-checked against hard copy data. Appropriate data validation will also be performed. New data from the IM studies field work will also be incorporated into the overall database. New tables will be included in the final RFI report.

RESPONSES TO RISK ASSESSMENT COMMENTS

Risk Assessment Comment 1-A. Section 2.
Response: The rationale for limiting chemical analyses to a few select parameter groups is currently supported by the methodology presented in the recent EPA guidance document: "Presumptive Remedies for Soils, Sediments, and Sludges at Wood Treater Sites (December 1995)." This document suggests that investigations at wood treatment facilities should be streamlined and can be expedited by focusing on chemicals typically associated with wood treating activities. As noted in the guidance, it is not necessary to sample for every chemical in the target analyte list (TAL) because both Beazer and the EPA have investigated numerous wood treatment facilities and have identified chemicals common to the wood treating process.

Risk Assessment Comment 1-B. Section 2.
Response: Comprehensive tables listing the location, depth, and analytical parameters will be generated to facilitate review.

Risk Assessment Comments 2-A, 2-B, and 2-C. Section 2.
Response: The final RFI report will address the site and data interpretations from a more holistic perspective. This evaluation should therefore clarify these issues.

Risk Assessment Comment 3-A. Section 4.
Response: Beazer agrees that it is appropriate to group individual SWMUs together to estimate the exposure point concentration and potential risks for the reasonable maximum exposed individual. This represents the exposure unit approach upon which scientifically tenable

risk assessments are based. The manner in which the data were aggregated will be re-evaluated to determine whether data have been aggregated correctly and consistently with EPA headquarter and Region 4 guidelines.

Risk Assessment Comment 3-B. Section 4.
Response: A more detailed series of figures and accompanying text of analytical results will be presented in the final RFI report.

Risk Assessment Comment 3-C. Section 4.
Response: If this plot is used in the final RFI report, it will be clarified.

Risk Assessment Comment 3-D, 3-E, and 3-F. Section 4.
Response: The final RFI report will address the site and data interpretations from a more holistic perspective. This evaluation should therefore clarify these issues.

Risk Assessment Comment 4. Pages 5-6 through 5-7, Section 5.1.1.3.
Response: Although the occupational exposure provides the estimated upper-bound reasonable maximum exposure (RME) risk for the facility, a trespasser or visitor scenario can be included as well. Since risks are typically higher for occupational exposures compared to trespassers or visitors, it is unlikely that risk management decisions will be based on such low risk scenarios. Although the presumptive remedy states that the risk assessment approach be streamlined to include only those pertinent pathways that could provide valuable risk management information, a trespasser scenario will be added to provide an additional risk estimate.

Risk Assessment Comment 5. Page 5-7, Section 5.1.2, Paragraph 1.
Response: The dataset will be re-evaluated to determine if there are sufficient data within the 1 foot soil profile to derive an exposure point concentration to estimate risks associated with surficial soils. If sufficient data are available, data will be aggregated over the 1 foot interval; if sufficient data are not available, an appropriate sampling program will be developed and specified in the RFI Work Plan Addendum.

Risk Assessment Comment 6. Page 5-7, Section 5.1.2, Paragraph 2.
Response: Styrene and benzo(k) fluoranthene will be included in the table. The suggested nomenclature proposed by EPA Region 4 for chemicals detected at the site will be adopted in the final RFI report.

Risk Assessment Comment 7. Page 5-10 through 5-11, Section 5.1.3, Groundwater and Section 5.2.
Response: The groundwater exposure pathway will be re-considered as more information on the basal clay layer becomes available from the IM field studies. This information will be used to develop the conceptual site model for all potential exposures at the facility.

Risk Assessment Comment 8. Page 5-12, Final Paragraph.
Response: This will be addressed/clarified in the final RFI report.

Risk Assessment Comment 9. Section 5.1.4, Table 5-2.
Response: Beazer agrees that the recently issued Soil Screening Guidance could be used to identify chemicals in soil that may impact groundwater. This guidance document will provide valuable information in the initial screening process. When soil concentrations exceed acceptable soil screening levels, more complex analyses or interim action may be warranted. Conversely, when soil concentrations are below the soil screening levels (for the appropriate exposure pathways) it can be confidently concluded that the chemicals do not pose an unacceptable risk to groundwater.

Risk Assessment Comment 10. Page 5-14, Paragraph 1.
Response: Additional information regarding the extent of the excavation for the drip track construction will be provided. All confirmation samples taken to confirm remediation will also be presented.

Risk Assessment Comment 11. Page 5-14, Paragraph 2.
Response: Beazer agrees that evaluating contact with sediments covered with water is typically not a complete exposure pathway and that direct exposure to dehydrated sediments is more realistic and pertinent for evaluating risks. Accordingly, sediment samples will be evaluated for direct contact for the period during which sediments are dry.

EPA Region 4 ecological screening values for sediments will be applied to evaluate whether chemicals in sediments could pose unacceptable risks. For those chemicals exceeding the screening values, ecological target species at the site will be identified to determine whether the screening values are appropriate for the particular species or whether additional toxicity information for site-specific species needs to be gathered.

Risk Assessment Comment 12. Pages 5-13 through 5-15, and Tables 5-3 through 5-10, Action Level Screening: A.
Response: The suggested format modifications will be made to facilitate review of site conditions. Separate tables presenting the analytical results for each media, for each SWMU will be generated according to EPA Region 4 guidelines. SWMU numbers and names will be reviewed to ensure consistency.

Risk Assessment Comment 12-B.
Response: All tables in the final RFI report will be reviewed for consistency.

Risk Assessment Comment 13-A and 13-B. Page 5-13, Paragraph 1, & Table 5-2.
Response: All toxicity values will be reviewed to ensure up-to-date information using EPA verified toxicity values for the risk assessment and for screening chemicals.

Risk Assessment Comment 14. Page 5-15, Section 5.2.1.
Response: Beazer agrees that risks associated with residential exposures need to be more fully addressed and efforts are underway (IM predesign field studies) to further characterize the site with regard to potential upper and lower groundwater impacts. The extent of the basal clay unit beneath the upper aquifer is a major focal point of current IM predesign field studies and will be used to formulate the conceptual site model.

Risk Assessment Comment 15. Page 5-17, Paragraph 4.
Response: Deed restrictions and notification of the local zoning authority are appropriate institutional controls to prevent exposures that could present unacceptable risks. These types of institutional controls will be formulated as part of the remedial alternatives evaluated during selection of the final corrective measures.

Risk Assessment Comment 16. Pages 5-18 through 5-20, Facility Worker.
Response: The assumption that workers will not be exposed to chemicals in surface water will be provided as part of the description of appropriate exposure units. Exposure units for workers will be identified based on ongoing site operations and activities. This information will be provided as rationale for data aggregation and identifying complete exposure pathways.

Risk Assessment Comment 17. pages 5-19 through 5-20, Nearby Resident.
Response: Beazer agrees that groundwater exposure to residential receptors will need to be revisited based on the results of the current investigation (IM field studies) of the basal clay layer. If the potential for residential exposure to groundwater exists it will be evaluated and the results will be used to estimate potential risks to human health.

Risk Assessment Comment 18-A and 18-B. Page 5-22, Section 5.2.2.3.
Response: The errors will be corrected and supporting rationale will be provided for the assumptions regarding exposure.

Risk Assessment Comment 19. Page 5-34, Paragraph 4.
Response: The TEF values will be corrected in the final RFI report.

Risk Assessment Comment 20. Page 5-37, Section 5.2.4.2, Paragraph 2.
Response: The ongoing IM investigation will provide information on the lower aquifer. This information will be evaluated with the existing data. If additional data are required to assess potential risks, a data collection plan will be presented in the RFI Work Plan Addendum.

Risk Assessment Comment 21. Page 6-9.
Response: All SWMUs screened out of the risk assessment will be fully explained and all pertinent information to support the conclusion will be presented in the narrative.

Beazer East, Inc.
Grenada, Mississippi Facility
Supplemental RFI Studies Work Plan

WBS	Task Name	1996 (Jun – Nov)
A	**RFI WORK PLAN ADDENDUM**	**10/25/96**
A.1	Receipt of EPA Comments	6/17/96
A.2	**Response Letter to EPA Comments**	**8/30/96**
A.2.1	Draft response to BZR	8/1/96
A.2.2	BZR Review	8/20/96
A.2.3	Revise and Submitt to EPA	8/30/96
A.3	**Conceptual Site Model**	**9/12/96**
A.3.1	**Database Management**	**8/15/96**
A.3.1.1	Receive Geobase data	8/2/96
A.3.1.2	Convert Geobase to ACCESS	8/7/96
A.3.1.3	Develop SiteGIS System	8/15/96
A.3.2	Data Review	8/12/96
A.3.3	Develop Conceptual Site Model	8/20/96
A.3.4	Review Mtg. w/ BZR	8/20/96
A.3.5	Update Conceptual Site Model	9/12/96
A.4	**Presentation Mtg. w/ EPA**	9/12/96
A.5	**Addendum to RFI Work Plan**	**10/25/96**
A.5.1	Draft Addendum text	9/27/96
A.5.2	Submit to BZR for review	10/11/96
A.5.3	Revise and Finalize text	10/25/96
A.5.4	Submit Addendum to EPA	10/25/96

letter from Drone to extend deadline
from EPA - Region IV

Printed: 8/28/96
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

JUN 12 1996

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Donald A. Ruggery, Jr., P.E.
Associate Program Manager
Environmental Group
Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219

SUBJ: Notice of Technical Inadequacy
Draft RCRA Facility Investigation Report
Koppers Industries Incorporated
Grenada, Mississippi
EPA I.D. Number MSD 007 027 543

Dear Mr. Ruggery:

The United States Environmental Protection Agency (EPA) and the Mississippi Department of Environmental Quality (MDEQ) have reviewed the Draft RCRA Facility Investigation (RFI) Report, dated March 10, 1994, which you submitted as required by Condition II.F.2. of your permit (effective date June 14, 1988). Our review concludes that your submittal does not completely satisfy the condition. Enclosed with this letter are comments describing the deficiencies of the RFI Report and informing you of the necessary changes or additions.

These comments call for additional investigation to fill gaps in the data. Therefore, please submit, within 90 days of receipt of this letter, an addendum to the RFI work plan to complete the investigation at the site, along with a schedule for performing the additional work and submitting a revised RFI Report. Note that until the RFI Report is approved, you have not fulfilled the permit requirements. Continued noncompliance may result in a formal enforcement action pursuant to Section 3008(a) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6928, under which EPA may seek the imposition of penalties of up to $25,000 for each day of noncompliance.

The revised RFI Report, when submitted, should be in the form of a totally revised complete RFI Report or revised pages to be inserted into the original document. If you choose to submit revised pages, please provide the following information:

1) Date or code each revised page or figure, for example, 32 (r-10/10/96) would be page 32, revised 10/10/96.

2) Provide instructions for deleting, adding to, or replacing pages in the original document.

Revisions to the RFI Work Plan and Report must include a certification as required by 40 CFR §270.11 and Condition II.F.6. of the permit.

Two copies each of the revised Work Plan and Report, or revisions to the original documents, should be submitted to each of the following:

Mr. G. Alan Farmer
Chief, RCRA Branch
U. S. Environmental Protection Agency
ATTN: Diane Scott, 4WD-RCRA-RPS-2
345 Courtland Street, N.E.
Atlanta, Georgia 30365

(2) Mr. Jerry Banks, Acting Chief
Hazardous Waste Division
Mississippi Dept. of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385
Attention: David Peacock

If you have any questions on the review comments, please contact Diane Scott of the RCRA Permitting Section at (404) 347-3555, voice mail extension 6346. For questions regarding compliance and enforcement, please contact Carlos Merizalde of the RCRA Compliance Section at (404) 347-3555, voice mail extension 6401.

Sincerely,

Alan Farmer

G. Alan Farmer
Chief, RCRA Branch
Waste Management Division

Enclosure

cc: David Peacock, MDEQ

COMMENTS ON DRAFT RCRA FACILITY INVESTIGATION REPORT
KOPPERS INDUSTRIES INCORPORATED
GRENADA, MS FACILITY

GENERAL COMMENTS

1. The response to a previous comment indicated, and the data in Appendix G verifies, that elevated PAHs were detected in the background soil sample. A background sample is generally defined as a sample from an undisturbed region similar to the media of concern. The presence of PAHs in the "background" sample indicates that its location was not in an undisturbed area. Therefore, a new background sample must be collected and analyzed for all parameters of concern.

2. I assume that the practice of analyzing the uppermost sample that did not exhibit visual or olfactory evidence of the constituents of concern was to determine the vertical "extent" of contamination. However, part of conducting a RFI is to determine the "nature" of the contamination (i.e., how contaminated is it?). This means sampling where it is dirty and analyzing for the constituents of concern. Without this information, it is impossible to determine whether a Corrective Measures Study is necessary. Where this has not been done, additional samples from the contaminated zone must be proposed in an addendum to the RFI Work Plan.

3. It appears that borings were located only in areas of visually contaminated surface soil. Because concentrations of constituents greater than action levels were found on the edges of this zone, it will be necessary to propose additional borings to find the lateral extent of contamination.

4. Since PCP was detected at the facility, soil/sediment samples to be analyzed for dioxins/furans must be proposed in an addendum to the RFI Work Plan.

5. The use of an on-site industrial exposure scenario in the risk assessment is acceptable as long as the remedy is accompanied by institutional controls to include deed notifications or restrictions for Solid Waste Management Units (SWMUs), along with ground water/surface water monitoring to verify that the concentrations of contaminants leaving the site are below the acceptable levels as calculated under a residential scenario.

SPECIFIC COMMENTS

1. Page 1-12:
The "stays" mentioned at the top of the page have been lifted.

2. Page 1-13:
What is the date of the BIF permit application? Was this application withdrawn?

3. Page 1-15, Table 1.3:
Two SWMUs are labeled as #12 and two as #13. Please correct this discrepancy.

4. Figure 2-2:
Samples L-28, L-29, L-30, B-14, B-15, and B-16 appear to have been moved from their original locations as proposed in the approved RFI Work Plan. Justify this change.

5. Sections 2.1.1 through 2.1.2:
State the criteria for choosing the samples to submit for analysis at the Process Area and Process Cooling Reservoir.

6. Sections 2.1.3, 2.1.6, and 2.1.7:
No "dirty" samples were collected and analyzed for the constituents in Table 2.1. How can the nature of the contamination be determined? (See General Comment 2). There are no action levels or risk values for "oil and grease". Therefore, it is impossible to determine if a CMS is necessary. New samples must be collected in the contaminated zone and analyzed for the constituents in Table 2.1.

7. Page 2-5, Section 2.1.4:
For which borings were samples just above the water table analyzed?

8. Section 2.3:
The Upper Low Permeability Zone below the Upper Sand Zone appears not to be contiguous across the site. In areas where it is present, were the deep wells double cased to prevent contamination, including DNAPLs, from spreading to the lower part of the aquifer?

9. Table 2.3:
List the thickness of the NAPL for all wells. Does the NAPL elevation represent the upper NAPL/water interface?

10. Section 2.5.3:
This section contradicts itself as to whether surface water samples were collected. If they were not collected, the sample numbers should not be plotted on Figure 2-9.

11. Figure 4-1:
Add another color to the display for visually affected soils < 4 ft. bls. Because the boring locations are not plotted on this map, it is difficult to determine whether the edge of the shaded zone represents the edge of visually contaminated soils or a lack of borings in that area. In addition to this map, the revised RFI Report should contain maps showing similar representations of contamination, but based on concentrations of various constituents of concern at different depths rather than extent of visually contaminated soil. These maps should include results from all phase of the investigation.

12. Page 4-7:
This section indicates that visually contaminated soil was encountered at borings B-11, B-12, and R-19; however, this is not represented on Figure 4-1.

13. Figures 4-10 through 4-12:
To augment the amount of information provided by these cross-sections, they should include nearby wells that are screened at different levels than those shown.

14. Figures 4-13 through 4-18:
The lateral extent of ground water contamination has not been completely defined, both on- and off-site. It appears that not all wells were sampled, which allows for gaps in the data. In certain areas, such as south of the Central Ditch, there are no wells present. Existing wells should be sampled and additional wells proposed in an addendum to the Phase II work plan, in order to fill the data gaps.

15. Section 4 Data Tables:
A discrepancy in Table 4.1.4, which was revealed during the November 6, 1995 meeting on the interim measures, brings into question the accuracy of concentrations in all the tables in this section. Please verify the accuracy of the numbers in these tables and make any necessary revisions.

<u>RISK ASSESSMENT COMMENTS</u>

1. Section 2:
The following concerns regarding the analytical data collected during the Phase II program to characterize soil and groundwater contamination were noted:

A. The rationale for limiting chemical analyses to a few select parameter groups (see Table 2.1, page 2-2, and Table 2.4, page 2-14) should be clearly specified up front. In the absence of strong historical data indicating that some parameters were never present on site, OHA recommends that at least two to three broad spectrum analytical samples be collected for each medium in an exposure pathway for risk assessment purposes.

B. According to the text in this section, only a subset of the soil/sediment samples collected were analyzed for all of the "soil boring analytical parameters" specified in Table 2-1. Remaining samples were analyzed for oil and grease only. Also according to the text, many of the samples analyzed for the more extensive list of analytical parameters were "apparently clean." The adequacy of the data collected for use in assessing human health risks is therefore questionable. In order to facilitate assessment of the current data base for data gaps, OHA recommends preparation of a comprehensive table listing the location, depth and analytical parameters of each soil/sediment sample collected. Although sampling locations are depicted in figures, the present report format makes it difficult to determine which depths and analytes were assessed at each location. Preparation of such a table should also facilitate comparison of "oil and grease" analytical results with the results of more comprehensive analyses (e.g. to what extent do high concentrations of oil and grease correspond to high concentrations of other analytes?).

2. Section 2:
The following concerns regarding the Phase II soil and groundwater sampling strategy were noted:

A. Many of the SWMU-specific subsections fail to explain the rationale for (i.e. justify the adequacy of) the completed Phase II sampling plan. For example, the "radial" sampling design used to characterize soil contamination in the Process Area (SWMUs 1, 4, 9 and 10), as described in the text and depicted in Figure 2-1, suggests that contaminated soils were only detected in the southeastern portion of this area. Yet, according to Figure 4-1, visually-contaminated soils were present throughout the process area.

B. Limited sampling (fewer than 4 borings) was performed at numerous SWMUs (SWMUs 6, 12, 13 and the easternmost surface impoundment at SWMU 11) suggesting a highly biased sampling approach. However, the report fails to provide evidence that these samples were collected from areas likely to yield the highest levels of any potential contamination. This lack of justification, combined with the limited nature of the analyses performed (see A. & B. above), make it difficult to determine whether the available analytical results provide an adequate characterization of site contamination for purposes of assessing risk to human health.

C. Discussion of the Phase II plans to sample and analyze groundwater (Subsections 2.3 and 2.4) should include a clear, complete assessment of the direction of groundwater flow (preferably with figure), so that the reader can more clearly evaluate the appropriateness (e.g. downgradient placement) of groundwater monitoring wells and sampling points. Also, additional soil samples were apparently collected and analyzed during monitoring well installation. For clarity, these sampling efforts should be presented in the preceding subsections on soil sampling and analysis rather than in Subsection 2.3, which details monitoring well installation.

3. Section 4:
The following concerns regarding Phase II sampling results were noted:

A. This section groups SWMUs 1, 4, 8, 9, 10 and 11 for purposes of data presentation and evaluation. Given that SWMUs 6 and 7 are located immediately adjacent to these SWMUs, the evaluation of sampling and analytical results would be facilitated by including these SWMUs in this grouping - particularly for figures. The only remaining SWMUs included in this investigation (SWMUs 12 and 13) are located a considerable distance from this group.

B. While discussion and illustration of the extent of visually affected soils is helpful (pages 4-2 through 4-6 and Figure 4-1), a similar series of figures, and accompanying text, for analytical results would be more directly applicable to the risk assessment process. Laboratory analytical results present the higher quality data needed to accurately characterize risks presented by the site and make appropriate risk management decisions. A direct comparison of visual and analytical data would also facilitate evaluation of the reliability of the visual field observations.

C. Clarify what measurements, and units, were used to plot the vertical axis of Chart 4.1 (page 4-5).

D. In general, the present report format makes it difficult to clearly assess the extent of surficial soil contamination (and thus the threat posed by the surface soil pathway) or determine whether significant data gaps for this pathway remain. Subsection 2.1 initially states that only seven surficial soil samples ("surficial soil borings"?) were collected. This data base may not adequately characterize the extent of surface soil contamination for the ten SWMUs being investigated. However, later subsections indicate that borings were often sampled at 2-foot depth intervals, frequently beginning with the 0-2 foot interval. Thus it appears that additional, potentially useful, surface soil analytical results may exist. The presence of potentially significant surface soil contamination is indicated by (i) the significant lateral extent of visually-detected subsurface soil contamination (e.g. Figure 4-1) and (ii) the detection of significant contaminant levels at the 0-2' depth interval (as indicated by several tables). A clear presentation and assessment of all available surface soil data is therefore warranted. Summary figures and/or tables indicating the extent of surface soil sampling and detected contamination should be provided to facilitate assessment of the nature and extent of surface soil contamination and the presence of any data gaps.

OHA typically requires surface soil samples to be collected from the 0-1 foot depth interval, in an effort to ensure detection of the maximum (i.e. undiluted) contaminant concentrations available via the surface soil exposure pathway. Other depth intervals may be considered, if accompanied by adequate justification. (See Attachment 1: *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletin No. 1 - Data Collection and Evaluation*).

E. All cross sections should illustrate the depth to water table for each boring. This will facilitate evaluation of detected soil contaminant concentrations with respect to the potential, or actual, impacts on groundwater.

F. Soil analytical summary tables similar to those provided for SWMUs 1, 4, 6, 8, 9, 10, 11 and 13 should also be provided for the other two SWMUs investigated (i.e. SWMUs 7 and 12). The text indicates that soil contamination, although limited, was also detected at these latter SWMUs.

4. Pages 5-6 through 5-7, Section 5.1.1.3:
The list of potentially exposed populations should also include the trespasser or visitor scenario. Region 4 considers the typical trespasser to be an adolescent, aged 7-16 (10 year exposure duration), with an average body weight of 45 kg. Estimation of trespasser exposure frequency should consider site-specific factors, such as distance from the site to residences and attractiveness of the site to the trespasser. (See Attachment 1: *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletin No. 3 - Exposure Assessment*).

5. Page 5-7, Section 5.1.2, Paragraph 1:
As noted previously (see comment 3D. above), OHA defines surface soil available for human contact as the top 12 inches. Surface soil samples should be collected from the most contaminated portion of the surface soil. OHA may consider the use of alternate (i.e. greater) depth intervals, provided adequate justification is given.

6. Page 5-7, Section 5.1.2, Paragraph 2:
"The list of constituents of concern for the HEA and the risk assessment is given in Table 5-1a." According to the tables provided in Section 4 of this report, styrene and benzo(k)fluoranthene were also detected in site samples, and should therefore be included in this table. (Note: the table to which this text is apparently referring is actually numbered "Table 5.1".)

Also, in general, OHA generally applies terms such as Chemicals of Potential Concern (COPCs) and Chemicals of Concern (COCs) to a more select group of chemicals (i.e. those which have undergone some type of screening or assessment process, such as that conducted in Section 5.1.4). (See Attachment 1: *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletin No. 1 - Data Collection and Evaluation* for a complete description of the process used by Region 4.) A more appropriate term to describe the chemicals identified in this section might be "chemicals detected in site samples".

7. Page 5-10 through 5-11, Section 5.1.3, Groundwater and Section 5.2 - The identification of potential exposure pathways via ground water, as well as the Risk Assessment calculations, should be revised once the presence of a basal clay layer is verified during implementation of interim measures. The data gap regarding the vertical extent of groundwater contamination makes it impossible to quantify the potential risk posed via the groundwater pathway. This potential risk is greater if the NAPLs detected in four monitoring wells were denser than the surrounding groundwater. Please either revise the present text to clarify the nature of the NAPLs detected and in revisions to the RFI Work Plan, describe plans for quantifying the potential groundwater risk.

8. Page 5-12, Final Paragraph:
"A summary of the exposure pathways considered in the HEA is presented in Table 5-1b." The pathways presented in this section appear reasonable. However, the reviewer was unable to locate Table 5-1b.

9. Section 5.1.4 - Update the action levels listed in Table 5-2 to include the most recent toxicity data, recalculated as described in Attachment 2. Regarding the screening analysis of "impacted deep soils which may pose a threat to groundwater...", since issuing the Proposed Corrective Action Rule on July 27, 1990, EPA has issued draft guidance which presents soil screening levels for use in evaluating the migration of soil contaminants to the groundwater pathway, entitled: *Soil Screening Guidance* (OSWER Directive No. 9355.4-14DSA) (Attachment 3). Future proposals of the Corrective Action Rule will likely recommend that all available tools be used to evaluate the threats posed by detected contamination. The analytical results for subsurface soils should therefore also be compared to the above soil screening levels.

10. Page 5-14, Paragraph 1:
"Other soil samples at the Drip Track Area are no longer considered representative of the area due to recent soil excavation." This document should include a clear description and illustration of the portion of this SWMU affected by the excavation, in order to ensure accurate evaluation of the current

(i.e. post-excavation) extent of contamination. Also specify whether post-excavation samples were collected in order to confirm the magnitude and extent of contamination remaining after the removal.

11. Page 5-14, Paragraph 2:
For purposes of assessing human health risks, Region 4 recommends that sediments in an intermittent stream be considered as surface soil for the portion of the year the stream is without water. In most cases, it is unnecessary to evaluate human exposures to sediments covered by water. (See Attachment 1: *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletin No. 3 - Exposure Assessment*).

For purposes of assessing ecological risks, Region 4 has compiled a list of sediment screening values from various literature sources. See Attachment 4: *Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment Bulletin No. 2 - Ecological Screening Values* for a complete listing of sediment screening values.

12. Pages 5-13 through 5-15, and Tables 5-3 through 5-10, Action Level Screening:

A. Due to the content and presentation format of the data included in these tables and the tables in Section 4 (e.g. data for multiple sites presented in a single table), it is difficult to verify the accuracy of the values presented in these tables, and thus to determine whether the appropriate SWMUs and contaminants were retained during the screening process. For example, according to Table 5-3, Fluoranthene was not detected in any surface soil samples from the Process Area, thus the screening criterion was not exceeded. However, according to Table 4.1.1-1, the maximum concentration of Fluoranthene detected in the Process Area, Drip Track Area and Former Wastewater Treatment Area was 50,000 mg/kg, which significantly exceeds the screening criteria of 3,200 mg/kg.

At a minimum, the tables should be modified so that Section 4 and 5 each contain a separate table which presents the analytical results for each media for each SWMU (i.e. groundwater results for SWMU 8). Ideally, the contents of the tables in these two sections could be combined into a single media- and SWMU-specific table such as that recommended in *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletin No. 1 - Data Collection and Evaluation*. Likewise, the results of the screening assessment should be presented and discussed on a SWMU- and media-specific basis in the text. Finally, for clarity, each SWMU should be consistently identified by both name and SWMU number.

B. For some of the SWMUs for which a specific analytical data table is provided in both Sections 4 and 5, inconsistencies between the contents of these tables were noted, indicating that the accuracy of the screening process conducted is questionable. To give a few examples:

(i) Why was no soil data included in Table 5-4, when according to Table 4.1.1-2, a significant number of contaminants were detected in soil samples collected from SWMU 6.

(ii) According to Tables 4.1.3-3 and 4.1.4-3, surface water and sediment samples collected at SWMU 6 were analyzed only for general parameter groups, yet according to Table 5-4, both types of samples were analyzed for an extensive suite of analytes.

(iii) According to Table 4.1.1-3, the maximum concentration of benzo(a)pyrene detected in a surface soil sample at SWMU 13 was only 28 ug/kg, yet according to Table 5-9, soil samples collected at this SWMU contained up to 120 mg/kg benzo(a)pyrene, exceeding the screening criterion of 0.1 mg/kg.

Please recheck the contents of all tables and the screening process for accuracy.

13. Page 5-13, Paragraph 1, & Table 5-2:
"Updated Reference Doses, Slope Factors, and Screening Action Levels are presented in Table 5-2." The following errors were noted in this table:

A. A spot check of Slope Factors and Reference Doses revealed several incorrect Slope Factors for PAHs. Following is a listing of the correct values, considering the TEFs developed by EPA for carcinogenic PAHs:

Benzo(a)pyrene	7.3E+00
Benzo(a)anthracene	7.3E-01
Benzo(b)fluoranthene	7.3E-01
Benzo(k)fluoranthene	7.3E-02
Chrysene	7.3E-03
Dibenzo(a,h)anthracene	7.3E-00
Indeno(1,2,3-c,d)pyrene	7.3E-01

B. A spot check of the screening criteria also revealed several incorrect values. Following are the correct surface water screening values, derived by the Region 4 Water Management Division, for two parameters (see Attachment 4: *Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment Bulletin No. 2 - Ecological Screening Values* for a complete listing of surface water screening values):

Acenaphthene SW Screening Criteria = 17 ug/L
Fluoranthene SW Screening Criteria = 39.8 ug/L

Please re-check the entire table for accuracy.

14. Page 5-15, Section 5.2.1:
"...the complete exposure pathways at the facility involved the following exposure media: surface soils, sediments and surface water." As stated in Section 5.1.3, the contaminants detected in the uppermost aquifer are not expected to impact groundwater quality in the deeper aquifers, which supply both domestic and public groundwater to wells in the Grenada area. However, data gaps regarding the presence/absence of a basal clay unit beneath this aquifer and the full vertical extent of groundwater contamination remain, making it impossible to fully evaluate - or eliminate - potential risks associated with the groundwater pathway. This uncertainty should be stated in the document text, and must be satisfactorily addressed in order for OHA to consider the risk assessment complete.

15. Page 5-17, Paragraph 4:
"Therefore the current [i.e. industrial] land use scenarios are expected to be sufficient for characterizing both present and future exposures at the facility." OHA concurs with this approach, provided the risk managers agree on the reasonableness of these future land use assumptions. However, if contamination is left on-site, a clear, reliable means for ensuring that the public will be notified of the land use restrictions associated with any ultimate cleanup decision (e.g. deed restrictions, notifications of the local zoning authority) must be established to ensure future protection of human health.

16. Pages 5-18 through 5-19, Facility Worker:
A brief justification to support the assumption that the facility worker would not be exposed to any potentially contaminated surface water is needed.

17. Pages 5-19 through 5-20, Nearby Resident:
See preceding comments regarding quantification of risks associated with potential groundwater contamination. Also, see preceding comment regarding inclusion of a trespasser scenario.

18. Page 5-22 through 5-25, Section 5.2.2.3:
A. The specified general mathematical relationship used to calculate intake to humans is misplaced in the text. Many variables were also inadvertently left out of the equations provided. Please recheck all equations and correct as needed.

B. Regarding the default values used in these equations:

(i) For purposes of assessing human health risks, Region 4 recommends that sediments in an intermittent stream be considered as surface soil for the portion of the year the stream is without water. In most cases, it is unnecessary to evaluate human exposures to sediments covered by water. (See Attachment 1).

(ii) A recreational exposure frequency of 14 days/yr seems low. Additional justification to support this value is needed.

(iii) The exposed skin surface area should be increased to include adult male hands and head, in addition to forearms.

(iv) Clarify why a modeled value was used to represent the chemical concentration in water. Region 4 typically recommends use of the arithmetic average of the wells in the highly concentrated area of the plume.

(v) Region 4 typically uses a body weight of 45 kg for the adolescent.

19. Page 5-34, Paragraph 4:
Two of the PAH toxicity equivalency factors (TEFs) listed are incorrect. The correct values are:

Benzo(k)fluoranthene	0.01
Chrysene	0.001

20. Page 5-37, Section 5.2.4.2, Paragraph 2:
"Sufficient data were not available at the time of writing this Risk Assessment to quantitatively evaluate risks associated with the groundwater pathway." This potential risk must be evaluated in order for OHA to consider the risk assessment complete.

21. Page 6-9 - Describe how the Risk Assessment eliminated the North and South Waste Piles, Container Storage Area, and Process Cooling Reservoir from inclusion in a CMS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

RECEIVED
JAN 29 1996
Dept. of Environmental Quality
Office of Pollution Control

JAN 25 1996

4WD-RCRA

<u>CERTIFIED MAIL</u>
<u>RETURN RECEIPT REQUESTED</u>

Mr. Donald A. Ruggery, Jr., P.E.
Associate Program Manager
Environmental Group
Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219

SUBJ: Approval of Interim Measures Work Plan
Koppers Industries Incorporated
Grenada, Mississippi
EPA I.D. Number MSD 007 027 543

Dear Mr. Ruggery:

The United States Environmental Protection Agency (EPA) and the Mississippi Department of Environmental Quality (MDEQ) have reviewed the draft Interim Measures Work Plan dated June 23, 1994, as well as the revisions in your response to comments letters dated October 25, 1995 and December 8, 1995. This work plan was submitted in response to the EPA Stabilization Initiative as described in a letter dated December 8, 1993.

The Interim Measures Work Plan, as revised by the above-mentioned response to comments letters, is hereby approved in accordance with Condition II.D.1. of your Hazardous and Solid Waste Amendments (HSWA) permit (effective date June 14, 1988). Interim measures shall be implemented in accordance with the schedule in the approved work plan. EPA and MDEQ should be notified of any delays encountered in meeting this schedule. Approval of this work plan does not preclude EPA and MDEQ from requiring further investigation or corrective action, including offsite actions, to constitute a final remedy for this area.

Two copies of the Interim Measures Report should be mailed to each of the following:

(1) Mr. G. Alan Farmer
Chief, RCRA Branch
U. S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365
ATTN: Diane Scott, 4WD-RCRA-RPS-2

(2) Mr. Jerry Banks, Acting Chief
Hazardous Waste Division
Mississippi Department of
Environmental Quality
Post Office Box 10385
Jackson, Mississippi 39429-0385
ATTN: David Peacock

EPA and MDEQ should be notified at least two weeks in advance of any field activity. If you have any questions regarding this letter, please contact Diane Scott of the RCRA Permitting Section at (404) 347-3555, ext. 6346.

Sincerely,

James S. Kutzman

James S. Kutzman
Associate Director
Office of RCRA & Federal Facilities
Waste Management Division

cc: David Peacock, MDEQ

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

December 8, 1995

Ms. Diane M. Scott
U.S. EPA Region IV
345 Courtland St., N.E.
Atlanta, Georgia 30365-2720

Subject: Second Response to Selected Comments
Draft Interim Measures Work Plan
Koppers Industries, Inc. Facility
Grenada, Mississippi
U.S. EPA I.D. Number MSD 007 027 543

Dear Ms. Scott:

This correspondence provides a second response to selected comments provided by the U.S. Environmental Protection Agency (U.S. EPA) on the June, 1994 Draft Interim Measures Work Plan (IMWP) for the Koppers Industries, Inc. (KII) Facility located in Grenada, Mississippi. These responses are provided by Beazer East, Inc. (Beazer) to address comments provided by the U.S. EPA and the Mississippi Department of Environmental Quality (MDEQ) (the Agencies) during a November 6, 1995 meeting attended by the Agencies, Beazer, KII and Dow Environmental, Inc.(DEI), and in a November 7, 1995 U.S. EPA fax transmittal to Beazer.

This transmittal serves as a follow up to Beazer's initial October 25, 1995 response to Agency comments, dated September 18, 1995.

A copy of the November 7, 1995 U.S. EPA fax transmittal is attached to this letter for reference; the individual comments have been numbered for easier reference. In addition, a copy of DEI's Standard Operating Procedure No. SOP6 - Monitoring Well Sampling, Revision Number: 1 is attached.

The following responses may represent modifications to the original June 1994 Draft IMWP and DEI SOP6. If such modifications are warranted, the changes noted below shall supersede the procedures presented in the original documents.

Beazer Responses

November 7, 1995 U.S. EPA Comment (1) - requires use of "closed top" bailers.

Beazer Response: Beazer's sampling contractors normally use standard bailers which have an open top design. These bailers will be fitted with stainless steel sleeves placed over their tops to prevent material from falling into the bailers during the groundwater sampling which is planned for treatability evaluations.

November 7, 1995 U.S. EPA Comment (2a) - frequency of field measurements.

Beazer Response: Field measurements of pH, specific conductance and temperature will be recorded at least once for each casing volume removed. Purging will continue until at least three consecutive volumes are removed and field measurements have stabilized.

November 7, 1995 U.S. EPA Comment (2b) - turbidity measurements.

Beazer Response: The objectives of the interim measures groundwater sampling are to collect samples for treatability evaluations. Samples may be collected from a variety of sources including aquifer test discharge water, existing monitoring wells, and from test pit excavations. Laboratory measurements for suspended and dissolved solids were proposed in the IMWP for these samples. Field measurements of turbidity will also be recorded, where necessary, if needed to assess the potential impact of suspended solids on the laboratory analyses of metals. In general, the field filtering of samples is not planned for the IMWP groundwater treatability sampling effort.

November 7, 1995 U.S. EPA Comment (3) - vertical pump placement during purging.

Beazer Response: Water will be preferentially withdrawn from the upper portion of the water column prior to bailing in order to remove stagnant water from the casing, as recommended.

November 7, 1995 U.S. EPA Comment (3) - annular seal mixture.

Beazer Response: Beazer will install annular seals with a bentonite/grout mixture consisting of approximately 5 - 10% bentonite, as approved.

Comment from the November 6, 1995 Meeting - decontamination.

Beazer Response: As agreed during the meeting, the use of the drip track for decontamination is acceptable provided reinforced plastic liners are used and wastes are handled properly. As indicated in the Draft IMWP, wastes generated during the decontamination process will be handled in accordance with the appropriate regulations. Solids will be containerized for characterization and subsequent disposal. The decontamination water will be pumped from the sump portion of the decontamination pad into the KII facility treatment system, prior to discharge the POTW.

Beazer believes that the decontamination water is acceptable for treatment in the KII plant, absent any pre-treatment, since the subsurface waste materials are consistent with the existing process wastes.

Closing

We trust that these responses adequately address the remaining issues related to the procedures for execution of the interim measures field work. Please contact me at (412) 227-2189, or Mr. Scott McDougall of DEI at (412) 788-2717 if you have any questions related to these matters.

Sincerely,

Donald A. Ruggery, Jr., P.G.

Program Manager

SJM/DAR

Attachments

cc: S. Smith - KII
R. Murphey - KII
M. Bollinger - Beazer East
R. Markwell- Beazer East
J. Patarcity - Beazer East
D. Peacock - MDEQ
J. Kutzman - U.S. EPA
S. McDougall - DEI
A. Nazar - DEI

ATTACHMENT I

November 7, 1995

U.S. EPA Fax Transmittal to Beazer
KII Grenada, MS

Interim Measures Work Plan

U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION [illegible] ENVIRONMENTAL SERVICES [illegible]ISION
[illegible]THENS, GEORGIA 30605-272[illegible]

MEMORANDUM

SUBJECT: Document Review of Standard Operating Procedures for Purging (Interim Measures Work Plan)
Koppers Industries - Tie Plant
Grenada, Mississippi
EPA I.D. Number MSD 007 027 543
ESD Project No. 95E-352

FROM: Michael Neill
Hazardous Waste Section

TO: Diane M. Scott
RCRA Permitting Section
Waste Management Division

I have reviewed the purging procedures for the Interim Measures Work Plan and offer the following comments:

COMMENTS:

(1) • All bailers used to collect samples should be "closed" top bailers to prevent any materials falling into the bailer during sampling.

(2a) • It is recommended that field measurements (temperature, pH and conductivity) should be performed at a minimum of once per water column of purged well water. After three consecutive field measurements with stabilized readings, the well is considered sufficiently purged.

(2b) When metals are considered to be a prime contaminant of concern, then turbidity becomes an issue, and turbidity readings should be recorded along with other field measurements. Low flow purging techniques (variable flow peristaltic pump or flow control submersible pump) should be used to obtain the lowest practical turbidity readings prior to sampling. ESD does not recommend filtering samples.

(3) • When sampling with bailers following purging a monitoring well with bailers or pumps (peristaltic, bladder or submersible), it is recommended that the water from the top of the water column be purged. As the purging proceeds, the purging equipment should be lowered accordingly to accommodate any draw down in the well. This "chasing" of the water column will prevent any stagnant, unpurged water being collected in the bailer as the equipment is used to collect the sample.

(4) The facility objected to ESD's comment in the initial document review that recommended using a pure bentonite grout in a monitoring well's annular space because the bentonite would crack in the vadose zone during drought conditions. A cement grout with 5-10% bentonite would be acceptable for this site. All grouts should be prepared in accordance with the manufacturer's specifications.

ESD does not feel that if ECBSOPQAM procedures are followed where the bentonite grout is covered by 2 feet of cement and a cement pad that the bentonite would experience any substantial cracking, and any cracking that did develop would rehydrate upon contact with moisture. In arid regions, the 2 feet of cement could be extended to accommodate the extended dry conditions and periods.

If you have any questions or comments, please call me at (706) 546-3308.

ATTACHMENT II

Dow Environmental Inc.
Standard Operating Procedure SOP 6
Monitoring Well Sampling

KII Grenada, MS
Interim Measures Work Plan

TITLE:

MONITORING WELL SAMPLING

DATE: 07/91

REVISION NUMBER: 1

6.1 Scope

This standard operating procedure (SOP) provides guidelines for collection of groundwater samples from monitoring wells. Several methods or combination of methods may be used to collect groundwater samples from monitoring wells. Typically, the chosen methodology(ies) will depend on the following:

- Parameters to be analyzed;
- depth of the well;
- diameter of the well;
- depth to groundwater; and
- the required volume of water.

In general, bailing is preferred over pumping for several reasons. Some of the more important reasons include:

- Pumping rates can agitate well water and alter volatile component concentrations;
- pumps are not easily dedicated to a given well; and
- pumps are more difficult to decontaminate after use than bailers.

In either case, the project engineer/scientist should stipulate in the sampling plan which method should be used in the field on each project.

6.2 Definitions

Not used.

6.3 Equipment and Materials

Groundwater sampling requires a relatively extensive list of equipment and protective clothing. This list can be summarized as follows:

- Purging/Sample Collection Equipment
  - Bailers (bottom filling)
  - Centrifugal pump
  - Submersible pump
  - Peristaltic pump
  - Bladder pump

- Related Sampling and Field Measurement Equipment

  - Thermometer
  - pH meter
  - Specific conductance meter
  - Filtration apparatus (vacuum or disposable)
  - Water-level measurement equipment

- General Equipment

  - Goggles or equivalent eye protection
  - Distilled water and dispenser bottle
  - Decontamination liquids
  - Field data sheets and log book
  - Sample preservation solutions
  - Sample containers
  - Buckets and intermediate containers
  - Ice chests
  - First aid kit
  - Key(s) for well locks
  - Stopwatch

- Disposable Materials

  - Plastic sheeting/bags
  - Pumping tubing
  - Bailer cord
  - Gloves
  - Filters
  - Chemical-free paper towels
  - Protective coveralls, e.g., Tyvek

6.4 Procedures

Several tasks need to be completed prior to actual sampling of each well. These preparatory activities can be summarized as follows:

- Log in proper sample bottles received from laboratory;

- prepare any deionized water or preservatives needed for the sampling;

- prepare bailers and/or pumps with standard decontamination procedures (see SOP8: Sampling Equipment Decontamination) and wrap in foil;

- dress in the required personnel protective equipment (PPE); and

- take initial static water level requirements prior to well purging. Water levels may be measured with an electric probe or sound producing device (popper) to the nearest hundredth of a foot.

Following water level measurements, all wells will be purged to assure collection of representative groundwater samples.

Wells will be purged until at least three casing volumes of water are removed from each well or until the pH, conductivity, and temperature of the purge water has stabilized prior to sampling. If a well is purged dry, sufficient time must be allowed for recovery. A maximum of ten casing volumes will be purged.

To calculate the amount of water to purge from each well, the depth of standing water must be measured. In addition, the casing diameter of each well must be known. These measurements are inserted into a formula for calculating the volume of a cylinder ($\pi r^2 h$), where r (well radius) and h (height of water column) are in feet.

To verify the removal of the required well volumes during purging, a graduated bucket will be used to measure purge water quantities.

Wells are purged and sampled by either hand bailing or pumping. When possible all samples are collected using bailers. Hand bailing for sample collection is preferred because bailers can be decontaminated much more carefully than pumps. Also, since pumping rates are difficult to control, and most pumps operate through a pulsating action, the degassing of volatile organic concentrations may occur.

The following procedures are followed when wells are purged and samples are extracted using hand bailers:

1. Place plastic sheeting (or garbage bags) around the well casing to create a clean surface for the placement of sampling cord and equipment.

2. Use a dedicated, laboratory cleaned, stainless steel bailer on each well for the required purging and sampling.

3. Use new surgical or nitrile gloves when working on each well.

4. Use new nylon cord to tie on each bailer.

   - Make sure the knotted cord is securely tied to the bailer.

   - After removing the protective foil wrapping from the bailer, lower it into the well until it touches the bottom.

   - Remove an additional length of cord and tie it securely to the well head to serve as a safety line for the bailer.

5. When raising the bailer the cord is collected on the plastic sheeting.

6. The preferred method for disposal of purged ground water is to collect and when possible, pass through an on-site treatment system. When an on-site treatment system is not avialable, the purged water shall be disposed of at an approved licensed TSD facility.

As noted above, when possible, pumps are not used to sample wells. However, there are circumstances when pumps are more effective purging devices than bailers. When pumps are used to purge wells, pumping will be done from the top of the water column and flow will be checked to ensure removal of the proper volume of water. Also, in some instances, pumps are the only means by which samples can be extracted from monitoring wells.

There are several pumps which are used frequently to perform field work. These types include the peristaltic, bladder, and submersible pumps.

Peristaltic pumps must be operated above ground next to the well being purged and are limited to purging depths of 20 to 30 feet below ground surface.

The following procedures are followed when wells are purged and samples extracted using peristaltic pumps:

1. New nalgene suction line is used on each well being purged. New silicon pump head tubing will also be used if the pump is utilized for sampling.

2. If a peristaltic pump is used to collect a sample, e.g., the well casing is bent preventing the passage of a bailer, the choice of tubing used to collect the sample will be contingent on the parameters of interest.

   - For example, if conventional parameters are being analyzed, then standard nalgene tubing is sufficient to collect the sample.

   - If volatile, semi-volatile, or metals parameter are the constituents of interest, teflon tubing is used to collect the sample.

3. The suction line should be lowered to a depth in the water column to assure continued collection should drawdown of the water column occur.

4. To determine the proper amount of water to be purged, the pumping rate should be measured in gallons per minute by recording the time required to fill a selected volume of a calibrated bucket. Flow measurements should be performed three times on each well to obtain an average rate.

5. Monitor the pumping to ensure proper pump operation and assure continuous discharge. If drawdown occurs lower the tubing deeper into the water column.

6. When the required amount of water is purged from each well allow for sufficient recovery before sampling.

7. All purge water shall be disposed of at an approved licensed TSD facility or the plant wastewater treatment system if available. All tubing is disposed of after each use.

The bladder pump is a gas-operated positive displacement submersible well pump that uses inert compressed gas, e.g., nitrogen, to inflate an internal bladder which pumps water up the discharge line.

These pumps are used when large volumes of water must be purged from monitoring wells. Usually these pumps are used on wells with diameters of 2 inches or greater and wells with depths up to 150 feet.

The line assembly is dedicated for use on one well only. After use the tubing is wrapped, marked, and stored for future use in the well to which it is dedicated.

The bladder pumps are primarily used to remove the required amount of water from the monitoring well prior to sampling. When this is accomplished, the well water is sampled using a laboratory cleaned stainless steel bailer.

The following procedures are followed when wells are purged and samples extracted using bladder pumps:

1. Connect the line assembly to the pump by first attaching the cable and then connecting the sample and gas lines.

2. Lower the pump down the well by unrolling the line off of the spoon until the pump touches bottom. Raise the pump to the desired position inside the well allowing sufficient room for drawdown of the water column.

3. Secure the cable to hold the pump at the desired depth.

4. Connect the gas line to the control box. The discharge line should be placed in a container (e.g., 55 gallon drum) to collect the purged water.

5. Connect the gas supply to the control box and adjust the pressure according to the manufacturer's manual.

6. As noted, the tubing is used on one well only and after each sampling it is packed, sealed, and stored for future use on that well.

When wells are encountered with depths greater than 20 feet or diameters greater than 2 inches, submersible pumps may be used to purge the required amount of well water. When possible the submersible pumping apparatus is pulled to allow for sampling with a laboratory cleaned stainless steel bailer. If this is not feasible the submersible pump will remain intact and will be used to collect the sample.

When economically feasible, submersible pumps will be dedicated to each well. However, in some cases, this is not economically feasible and the same pump must be used in several wells.

When this must be done, the pumps will be steam cleaned between wells. Also, the pumps will be used on wells known to contain similar constituent levels.

The following procedures are followed when wells are purged and samples extracted using submersible pumps:

1. The submersible pump should be lowered to a depth in each well between the middle to bottom screened portion of each monitoring well. The safety line should be secured to the well casing.

2. Connect the power cord to the power source (generator) and turn on the pump.

3. Continue to monitor the pumping rate and lower the line if drawdown of the water column occurs.

4. If the well is pumped to dryness, allow 10 minutes for the well to recover. (Note: Allowing a submersible pump to operate under dry conditions will quickly destroy the pump's motor.)

5. After this period the pump should be re-started and the total discharge volume should be measured to determine the rate of recharge.

6. The preferred method for disposal of purged ground water is to collect and when possible, pass through an on-site treatment system. When an on-site treatment system is not avialable, the purged water shall be disposed of at an approved licensed TSD facility.

After water level recovery, the well should be sampled within 24 hours of completion of the purge event. Dedicated, laboratory clean stainless steel or teflon bailers should be used to collect each sample. The sampling technician should wear a clean pair of surgical gloves for each well. The bailer should be gently lowered into the well. Samples will be collected according to the order of their volatility. This order is generally as follows:

- Volatile Organic Aromatics;
- total Organic Halogens;

- total Organic Carbon;
- semi-volatile Organics;
- metals;
- total Phenols;
- cyanide;
- other chemical parameters; and
- radionuclides.

Samples collected for volatile organics should be carefully placed into 40 ml glass vials with teflon septum lids. No air bubbles should be present in the vial after sealing the septum lid. Other common laboratory-provided sample bottles include polyethylene or clear glass for metals and amber glass for phenols and semi-volatiles.

In situations where measurement of dissolved metals is required, field filtration of each sample will be necessary. (Note - filtering is not recommended for samples for volatile or semi-volatile organics.)

Filtering is performed using either hand vacuum pumps with funnels or peristaltic pumps with disposable funnels/filters. When using the vacuum pump method, a laboratory cleaned funnel is used for each well. Funnels are decontaminated in the laboratory using standard decontamination procedures. When using the peristaltic pump method, new silicone tubing is used in the pump head for each sample filtered and new teflon tubing is used from the pump head to the filter. Whether using the vacuum pump or peristaltic pump method, all samples are filtered through 0.45 micron filter paper. After filtering, samples requiring preservatives are preserved and all containers are securely placed in coolers and chilled to a temperature of 4° Celsius. Each cooler containing samples will contain a completed chain-of-custody form or tag.

6.5 <u>References</u>

Not used.

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

October 25, 1995

Mr. James S. Kutzman
Associate Director
Office of RCRA and Federal Facilities
Waste Management Division
U.S. Environmental Protection Agency - Region 4
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Subject: Response to Comments on Draft Interim Measures Work Plan
Koppers Industries, Inc. Facility
Grenada, Mississippi

Dear Mr. Kutzman:

This correspondence transmits a response to comments provided by the U.S. Environmental Protection Agency (U.S. EPA) on the Draft Interim Measures Work Plan (IMWP) for the Koppers Industries, Inc. (KII) Facility located in Grenada, Mississippi. These comments have been prepared by Beazer East, Inc. (Beazer) in response to comments received on September 18, 1995 related to the Draft IMWP submitted by Beazer in June, 1994. It is Beazer's intent that this response serve as the final revisions to the IMWP, and that the interim measures work can begin in a timely manner, pending resolution of the outstanding technical issues.

For reference, each of the September 18, 1995 U.S. EPA review comments are provided herein followed by Beazer's corresponding response.

U.S. EPA Comment 1. Introduction and Objectives - Describe how the interim measures will be integrated with the final corrective measures for the facility. The soil cover at the Former Wastewater Treatment Area should be a temporary cover that would not preclude further action at that SWMU. If further action is precluded, then land-use restrictions and other measures would be needed, and the facility would end up with a "conditional" rather than a "walk-away" final remedy. Also, will the pre-design studies fill all data gaps identified in the Phase II RFI Report? It appears from Figures 2-26 through 2-33 that the vertical extent of contamination has not been completely defined in the area of SWMU 11. The pre-design studies should include all further investigation of the SWMU prior to placement of a soil cover.

Beazer Response: This comment addresses a number of issues pertaining to the intended permanence of the proposed Interim Measures (IMs), integration of the proposed IMs with potential final actions, as well as a request to expand the pre-design studies associated with the former Wastewater Treatment (WWT) Area (SWMU 11) to include additional vertical delineation prior to construction of the soil cover.

The proposed IMs include a soil cover with surface water controls combined with a shallow groundwater control and collection system which will eliminate exposure to surface soils, reduce runoff and infiltration, and control existing groundwater releases to the Central Ditch. Further, ditch stabilization measures are proposed to reduce the human and environmental exposure and the offsite transport of sediments that potentially contain site-related constituents. Each of the IM actions are intended to serve as permanent components of the future potential final corrective action solutions for the facility. The IMs meet the objectives of the Stabilization Initiative through their ability to significantly minimize the further spread of constituents and consequently control potential environmental and human health risks. The rationale for this approach is as follows:

- Shallow Groundwater Controls: These are proposed to eliminate or substantially reduce ground water discharge from the Central Plant and WWT Areas to the Central Ditch. Depending on the results of the pre-design studies, the hydraulic controls may best be accomplished by a sheet pile barrier and interceptor drain or other measures such as biocurtains or recovery wells. Each of these shallow groundwater controls, once installed, would become part of the permanent site remedy. Each would entail different operations and maintenance (O & M) considerations.

- WWT Area Soil Cover and Surface Water Controls: These IM designs adequately address human health and environmental risks with respect to their ability to eliminate human contact with surface soils and to prevent the runoff of surface soils to the Central Ditch. Run-on and infiltration will also be substantially reduced with proper O & M. This is a suitable permanent remedy for SWMU 11 when implemented in conjunction with the IM shallow groundwater controls.

  The fact that the former WWT Area impoundments were excavated and backfilled and also that negligible human health risks were calculated for surface soils in the WWT Area also suggest that the proposed IM soil cover and surface water controls are a suitable long-tern solution.

A full RCRA cap design for SWMU 11 is not planned for either the IM or permanent remedy since this is considered excessive and redundant; the proposed soil cover combined with the appropriate long-term groundwater control mechanisms adequately addresses human health and environmental risk concerns.

- Groundwater Treatment: As described in the IMWP, groundwater intercepted by the IM drain or IM shallow wells will be extracted for onsite treatment. The existing facility WWT plant or a new WWT plant will be used to treat the groundwater influent generated by the IM and any additional long-term groundwater extraction systems, if needed.

  Pre-design treatability studies are planned for the purpose of evaluating physical and chemical loading and optimizing treatment system design, as described in the IMWP.

- Central Ditch Stabilization: Beazer has proposed to contain sediments in the Central Ditch to reduce potential human and environmental exposure to the constituents identified in the Phase II RFI. An erosion control mat or possibly other materials will be used to stabilize the existing channel from the area beginning at the western most railroad bridge in the Central Plant Area downstream to the eastern property boundary during the interim measures. This portion of the Central Ditch contains evidence of visible seepage and relatively higher constituent values which warrants the focus of the interim measure work in this area. The IM ditch stabilization work is considered permanent in the sense that the installed materials will remain in the channel long-term. Periodic inspection and maintenance of the sediment containment materials will be needed for long-term effectiveness.

Regarding the need for additional subsurface investigation of SWMU 11, Beazer has proposed an extensive pre-design testing program to support the actual IM design. The IMWP outlines the test boring, test pit, aquifer testing and laboratory analyses which are needed to design the shallow groundwater controls and soil cover for the former Central Plant and WWT Areas. Drilling and lithology sampling depths in the 40-50 foot preliminary comments

U.S. EPA Comment 7. Section 5.0, Table 5.1 - Interim Measures Activities Schedule - Eliminate Agency review of Design Reports. Include in the schedule the amount of time needed for actual implementation of corrective measures.

Beazer Response: A revised proposed Schedule of Interim Measures Pre-Design Activities is included with this transmittal with EPA Design Review deleted. A schedule for corrective measures implementation will be provided to the U.S. EPA following resolution of outstanding issues to be discussed at the November 6, 1995 meeting.

505 days

logistics ⇒ are these finalized ??

U.S. EPA Comment 8. Figures - To make review of cross sections easier, mark intersections of other cross sections.

ok

Beazer Response: Intersection of the cross-sections has been marked on figures. Revised Figure Numbers 2.5 through 2.9 are included for EPA review.

U.S. EPA Comment 9. Figure 2-10 - The Upper Permeability Zone is not present in Wells B-18 and R-20B, yet the areal extent map indicates that it is.

Beazer Response: Figure 2-10 presents the area of the Upper Low Permeability Zone. Boring log B-18 indicates that the drilling of this borehole was terminated at depth of 20 feet below ground surface, i.e. approximately five to eight feet above the top of the Upper Low Permeability Zone. The well screen of R-20B has been installed from 43.0 to 53.0 feet below ground surface. This screen is located below the Upper Low Permeability Zone. The lithologic log of R-20B indicates that a clayey silt layer was encountered from 36.0 to 40.0 feet below ground surface. This layer represents the Upper Low Permeability Zone. Staining has been observed above this layer. This indicates that the clayey silt layer acts as a confining layer within the aquifer.

ok

U.S. EPA Comment 10. Appendix C, SOP - It is recommended that all monitoring well installation, sampling, decontamination, and quality control procedures follow the protocols outlined in the U.S. EPA, Region 4, Environmental Services Division, Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual (February 1, 1991). Section 4.6 indicates that ground water samples will be collected and analyzed for chemical parameters. However, the SOP does not address well purging or ground water sampling techniques.

Beazer Response: SOP6, Monitoring Well Sampling is enclosed with this letter. Well purging and groundwater sampling techniques are described in this SOP.

ok

U.S. EPA Comment 11. Appendix C, SOP12, Subsurface Soil Sampling - Soil samples that are collected for chemical analysis should be homogenized in a clean glass plan with a stainless steel spoon. Prior to mixing of the sample, an undisturbed aliquot should be placed in a container for volatile organic analysis. Wax, newspaper, or other materials used to seal sample containers should not come in contact with soil sample that will be chemically analyzed.

Beazer Response: Beazer will handle the soil samples as per U.S. EPA Comment 11.

ok

U.S. EPA Comment 12. Appendix C, SOP8, Sampling Equipment Decontamination, page 2 - EPA Region 4 recommends that the final rinse in the decontamination procedure be organic-free water to minimize the potential of solvent being detected. Organic-free water is tap water that has been treated with activated carbon units and deionizing units, and should contain no extractable organic compounds and less than 5 μg/l of volatile organic compounds.

Beazer Response: Beazer will use organic-free water for the final rinse of the sampling equipment.

U.S. EPA Comment 13. Appendix C, SOP18, Monitoring Well Grouting Techniques, page 2 - EPA Region 4 recommends using a pure bentonite grout to fill the annular space above the bentonite seal. While setting, cement grouts will experience temperature increases which could detrimentally affect certain types of casing. Also, over time, cement grouts could alter the water chemistry by raising the pH of the ground water near the well.

Response ok

Beazer Response: Beazer suggests that a slurry of bentonite and cement should be used for annular seal material within the vadose zone. A sufficient soil moisture level may not be available to maintain the hydrated state of bentonite. If the pure bentonite slurry begins to dry out, the seal may desiccate, crack and destroy the integrity of the seal. Therefore, bentonite seals are not recommended in the vadose zone.

I trust that these responses adequately address the September 18, 1995 U.S. EPA comments, and I look forward to meeting with the U.S. EPA and the MDEQ on November 6, 1995. Please contact me at (412) 788-2717 if you would like to discuss these matters prior to the meeting.

Sincerely,

Audrey Nunn for D.A.R.

Donald A. Ruggery, Jr., P.G.
Program Manager

DAR/rks

Enclosures

cc: M. Bollinger - Beazer East, Inc.
R. Markwell - Beazer East, Inc.
S. McDougall - Dow Environmental Inc
R. Murphy - Koppers Industries, Inc., Grenada, Mississippi
A. Nazar - Dow Environmental Inc
D. Peacock - Mississippi Department of Environmental Quality
D. Scott - U.S.EPA Region IV
S. Smith - Kopper Industries, Inc., Pittsburgh

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

DEC 06 1993

CERTIFIED MAIL
Return Receipt Requested

RECEIVED
DEC - 8 1993
Dept of Environmental Quality
Office of Pollution Control

4WD-RCRA

Mr. Stephen T. Smith
Environmental Program Manager
Koppers Industries Inc.
436 Seventh Avenue
Pittsburgh, Pennsylvania
15219-1800

RE: Stabilization Initiative
Koppers Industries, Inc.
Grenada, Mississippi Tie Plant
EPA ID No. MSD 007 027 543

Dear Mr. Smith:

Recently, the U.S. Environmental Protection Agency (EPA) adopted a national corrective action stabilization initiative to increase the use of interim actions at Resource Conservation and Recovery Act (RCRA) Treatment, Storage or Disposal Facilities (TSDFs) to achieve favorable short-term environmental results. EPA adopted this initiative because EPA recognized the length of time required to adequately investigate releases of hazardous constituents and to initiate the final cleanup of releases at RCRA facilities can take several years. Delays in implementation of final remedies frequently enables contamination problems to spread and become more difficult to remediate. While final cleanup is still the long-term goal of the RCRA Corrective Action Program, this initiative emphasizes the importance and value of controlling releases and stabilizing the site to prevent the further spread of contaminants. The following text describes the general direction the Agency's corrective action process is heading in its attempt to promptly address environmental contamination at all RCRA TSDFs.

Your RCRA permit contains provisions for directing site investigations and cleanup. Although complete characterization of identified releases under the RCRA Facility Investigation (RFI) may be necessary for development of a final site remedy, EPA recognizes that beneficial environmental results are achievable by initiating more proactive interim measures. Thus, EPA is now encouraging constructive near-term actions to address actual or imminent exposures and to prevent or minimize the further spread of contamination. EPA finds properly designed interim measures can achieve rapid source control, containment, or other favorable short-term environmental results prior to the implementation of the final remedy.

Section II D. of your RCRA HSWA permit describes how your facility may implement interim measures to effect stabilization of soil and groundwater contamination through corrective action activities. The first step in implementing these corrective action activities is the submittal to EPA of an Interim Measures Work Plan. To date, Interim Measures have generally been imposed by EPA and the majority of facilities have been reluctant to voluntarily initiate Interim Measures. Because of the long term capital investment necessary for final cleanup, a few facilities have become aware that interim actions can limit the extent and incidence of continued environmental degradation from uncontrolled releases. EPA's stabilization initiative functions within the domain of this new awareness by requesting that facilities take a more responsible and active role in mitigating contaminant releases.

Beazer, on behalf of Koppers, has completed Phase II of their RFI for the Tie Plant facility. Based on visual observations and analytical data gathered during this phase, the report identified areas of significant contamination in the soils at the site. Additionally, the Phase II report indicates the presence of nonaqueous phase liquids present in the groundwater at the site. While we have not made a decision regarding a final corrective measure for any of these areas, we are urging you to review your facility's Solid Waste Management Units (SWMU's) in light of the stabilization initiative and identify any units or areas which would be good candidates for interim actions.

Enclosed are two copies of EPA guidance documents which will, hopefully, provide you with further understanding of the stabilization initiative. These documents are:

1. Handbook -- Stabilization Technologies for RCRA Corrective Actions, EPA/625/6-91/026, August 1991.

2. RCRA Corrective Action Interim Measures Guidance (Interim Final), EPA/530-SW-88-029 and OSWER Directive 9902.4, June 1988.

In response to this letter, EPA requests Beazer submit, within thirty (30) calendar days of receipt of this letter, a response indicating if you will submit an interim measure plan to stabilize your plumes of contaminated groundwater and soil at your Tie Plant facility. If you wish to discuss the stabilization initiative or interim corrective actions measures which may be appropriate at your site, please contact Jacq Marie Jack of the RCRA Permitting Section at (404) 347-3433.

Sincerely yours,

James S. Kutzman for

Joseph R. Franzmathes
Director
Waste Management Division

Enclosures

cc w/enc: Jerry Banks, MDEQ
Robert S. Markwell, Beazer

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

RECEIVED
MAY 17 1993
DEQ-OPC

May 10, 1993

Mr. Wayne Stover
State of Mississippi
Department of Environmental Quality
Hazardous Waste Division
P. O. Box 10385
Jackson, MS 39289-0385

RE: Groundwater Quality Assessment
Boiler Ash Disposal Area
Koppers Industries, Inc.
Grenada, MS Facility

Dear Mr. Stover:

Enclosed is the Groundwater Quality Assessment (GWQA) Final Report for the Boiler Ash Disposal Area at the above-referenced facility. This report concludes that GWQA is complete and recommends that the Boiler Ash Disposal Area be incorporated into the ongoing RFI/CMS.

I am new to this project as I understand you are also. I would like to suggest that after your review of this document, we meet to further discuss the recommendations presented in the report. I will call you in the next week to arrange such a meeting.

If you have any questions in the meantime, please contact me at 412-227-2946.

Very truly yours,

Robert S. Markwell
Program Manager - Environmental Group

RSM/dlm

Enclosure

cc: J. R. Batchelder, [illegible]
R. Murphey, [illegible]
J. Werling, [illegible]
T. Faye, BEI
D. King, Chester
G. Gardner, D&M

KOPPERS INDUSTRIES

Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1800
Telephone: (412) 227-2001
Fax: (412) 227-2423

via FEDERAL EXPRESS

April 2, 1992

Ms. Elizabeth Ketcham
U. S. EPA Region 4
RCRA and Federal Facilities Branch
Second Floor
345 Courtland Street
Atlanta, GA 30365

APR - 6 1992

---AND---

David Peacock
Hazardous Waste Division
Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

Re: Koppers Industries, Inc. Grenada Plant, Industrial Boiler, MSD 007 027 543

Dear Ms. Ketcham and Mr. Peacock:

As you are aware, Koppers Industries, Inc. (KII) previously submitted a Part A RCRA application and precompliance certification for the industrial boiler and associated storage facility in Tie Plant, MS in order to continue burning hazardous wastes as fuel in accordance with the BIF regulations. It recently was pointed out by EPA that, because the closed surface impoundment is a permitted unit, that KII should have submitted a Class 3 permit modification request by February 21, 1992. As you know, Beazer East, Inc. is the operator of the now closed surface impoundment and is also the former owner and operator of the wood preserving facility. Beazer East holds the permit for the surface impoundment and KII was not, and is not, responsible for that impoundment except as a subsequent owner of the property. KII believes that the regulations do not prohibit allowing some units to remain in interim status while other units on the property are RCRA permitted and that, in this case, having the boiler and storage facility remain in interim status is the logical way to proceed. A meeting with the EPA has been requested as soon as possible to discuss their differing interpretation. A date has not yet been set to meet.

Until the RCRA permitting status is finally resolved, KII must proceed as though the facilities are in interim status to meet the BIF time schedule. Thus, KII has ordered a stack monitor, a new boiler stack will be installed, and facility improvements such as drainage curbing and fencing are being installed.

We have also determined that some wastes now being commercially disposed from KII's tar plant in Stickney, Illinois (near Chicago) can be effectively used as fuel in this industrial boiler. Thus, enclosed please find a revised RCRA Part A application which now includes these additional wastes.

A revised Precompliance Certification will also be submitted soon which includes revisions providing for increased stack height and burning of KII's tar plant wastes.

Our consultant, Woodward Clyde, is preparing a test burn protocol which will be submitted when ready. At this point, we anticipate conducting the test burn in late June. The test burn protocol will consider wood preserving wastes and the tar plant wastes.

KII remains very interested in meeting with you to resolve the permitting issues in a mutually acceptable manner. Please call me as soon as possible with a proposed meeting date. Please call at (412)227-2677 if you have questions or to set a meeting date.

Sincerely,

Stephen T. Smith

Stephen T. Smith
Environmental Program Manager

cc: Jim Bassett, MS DEQ
Ron Murphy, Grenada, MS
W. R. Donley, K-1750
R. S. Ohlis, K-1750
J. R. Batchelder, K-1701
Anaxis Duhon, Woodward Clyde Consultants, Baton Rouge, LA
Ken Komoroski, Dickie, McCamie, and Chilcote
Jim Werling, Beazer East Inc., K-1450

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GSA No. 0246-EPA-OT

For EPA Regional Use Only	EPA	For State Use Only
Date Received: Month / Day / Year	United States Environmental Protection Agency, Washington, DC 20460	

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. ID Number(s)

A. EPA ID Number: M S D 0 0 7 0 2 7 5 4 3

B. Secondary ID Number (if applicable):

II. Name of Facility

KOPPERS INDUSTRIES INC

III. Facility Location (Physical address not P.O. Box or Route Number)

A. Street: TIE PLANT ROAD

Street (continued):

City or Town	State	ZIP Code
TIE PLANT	MS	38960-

County Code (if known)	County Name
	GRENADA

B. Land Type (enter code)	C. Geographic Location LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)	D. Facility Existence Date Month	Day	Year
P	33 44 04	89 47 19			1980

IV. Facility Mailing Address

Street or P.O. Box: BOX 160

City or Town	State	ZIP Code
TIE PLANT	MS	38960-

V. Facility Contact (Person to be contacted regarding waste activities at facility)

Name (last)	(first)
MURPHEY	RONALD

Job Title	Phone Number (area code and number)
PLANT MANAGER	601-226-4584

VI. Facility Contact Address (See instructions)

A. Contact Address Location	Mailing	B. Street or P.O. Box
	X	BOX 160

City or Town	State	ZIP Code
TIE PLANT	MS	38960-

ATTN: BIF

EPA I.D. Number *(enter from page 1)*: M S D 0 0 7 0 2 7 5 4 3

Secondary ID Number *(enter from page 1)*:

VII. Operator Information *(see instructions)*

Name of Operator: SEE ATTACHED

Street or P.O. Box:

City or Town: | **State**: | **ZIP Code**: -

Phone Number *(area code and number)*: - -

B. Operator Type:

C. Change of Operator Indicator: Yes ☐ No ☐

Date Changed: Month | Day | Year

VIII. Facility Owner *(see instructions)*

A. Name of Facility's Legal Owner: KOPPERS INDUSTRIES INC

Street or P.O. Box: 736 SEVENTH AVENUE

City or Town: PITTSBURGH | **State**: PA | **ZIP Code**: 15219-

Phone Number *(area code and number)*: 412-227-2001

B. Owner Type:

C. Change of Owner Indicator: Yes ☐ No X

Date Changed: Month | Day | Year

IX. SIC Codes *(4-digit, in order of significance)*

Primary		Secondary	
2491	*(description)* WOOD PRESERVING		*(description)* N/A
Secondary		**Secondary**	
	(description) N/A		*(description)* N/A

X. Other Environmental Permits *(see instructions)*

A. Permit Type *(enter code)*	B. Permit Number	C. Description
E	0960-00012	STATE-AIR PERMIT FOR BOILER
R	HW-88-543-01	Post Closure Care and Detection Monitoring Program of Closed Surface Impoundment.

EPA I.D. Number *(enter from page 1)*	Secondary ID Number *(enter from page 1)*
M S D 0 0 7 0 2 7 5 4 3	

XI. Nature of Business *(provide a brief description)*

The Plant deals with the preservation of wood products utilizing pressure treatment process. The preservation process utilizes pentachlorophenol and coal tar base products. Beazer East, Inc. does not commercially operate at this facility. The facility industrial boiler accepts wastes from corporate affiliates only (captive).

XII. Process – Codes and Design Capacities

A. **PROCESS CODE** – *Enter the code from the list of process codes below that best describes each process to be used at the facility. Twelve lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided in Item XIII.*

B. **PROCESS DESIGN CAPACITY** – *For each code entered in column A, enter the capacity of the process.*

1. **AMOUNT** – *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process unit.*
2. **UNIT OF MEASURE** – *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. **PROCESS TOTAL NUMBER OF UNITS** – *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	<u>DISPOSAL:</u>	
D79	INJECTION WELL	GALLONS; LITERS; GALLONS PER DAY; OR LITERS PER DAY
D80	LANDFILL	ACRE-FEET OR HECTARE-METER
D81	LAND APPLICATION	ACRES OR HECTARES
D82	OCEAN DISPOSAL	GALLONS PER DAY OR LITERS PER DAY
D83	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	<u>STORAGE:</u>	
S01	CONTAINER (barrel, drum, etc.)	GALLONS OR LITERS
S02	TANK	GALLONS OR LITERS
S03	WASTE PILE	CUBIC YARDS OR CUBIC METERS
S04	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	<u>TREATMENT:</u>	
T01	TANK	GALLONS PER DAY OR LITERS PER DAY
T02	SURFACE IMPOUNDMENT	GALLONS PER DAY OR LITERS PER DAY
T03	INCINERATOR	SHORT TONS PER HOUR; METRIC TONS PER HOUR; GALLONS PER HOUR; LITERS PER HOUR; OR BTU'S PER HOUR
T04	OTHER TREATMENT (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided in Item XIII.)	GALLONS PER DAY; LITERS PER DAY; POUNDS PER HOUR; SHORT TONS PER HOUR; KILOGRAMS PER HOUR; METRIC TONS PER DAY; METRIC TONS PER HOUR; OR SHORT TONS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
GALLONS PER HOUR	E
GALLONS PER DAY	U
LITERS	L
LITERS PER HOUR	H
LITERS PER DAY	V
SHORT TONS PER HOUR	D
METRIC TONS PER HOUR	W
SHORT TONS PER DAY	N
METRIC TONS PER DAY	S
POUNDS PER HOUR	J
KILOGRAMS PER HOUR	R
CUBIC YARDS	Y
CUBIC METERS	C
ACRES	B
ACRE-FEET	A
HECTARES	Q
HECTARE-METER	F
BTU's PER HOUR	K

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EPA I.D. Number (enter from page 1): M S D 0 0 7 0 2 7 5 4 3

Secondary ID Number (enter from page 1):

XII. Process - Codes and Design Capacities (continued)

EXAMPLE FOR COMPLETING ITEM XII (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

Line Number	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	FOR OFFICIAL USE ONLY
X 1	S 0 2	600	G	0 0 2	
X 2	T 0 3	20	E	0 0 1	
1	D 8 0*	0.75	A	0 0 1	
2	D 8 0	1.5	A	0 0 1	
3	S 0 3	Approximately 4000	Y	0 0 1	
4	S 0 3	Approximately 1000	Y	0 0 1	
5	S 0 1	Approximately 35,000	G	0 0 1	
6					
7					
8	* SURFACE IMPOUNDMENT CLOSED AS A LANDFILL. ALL VISIBLE				
9	WASTE WAS REMOVED, HOWEVER, CLEAN CLOSURE WAS NOT ACHIEVED.				
10					
11					
12					

NOTE: If you need to list more than 12 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for additional treatment processes in item XIII.

XIII. Additional Treatment Processes (follow instructions from item XII)

Line Number (enter numbers in sequence with item XII)	A. PROCESS CODE	B. TREATMENT PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	D. DESCRIPTION OF PROCESS
	T 0 4	800	J	0 0 1	Combustion (treatment) of wastes as fuel in industrial wood fired boiler.
	T 0 4				
	T 0 4				
	T 0 4				

EPA I.D. Number (enter from page 1)												Secondary ID Number (enter from page 1)
M	S	D	0	0	7	0	2	7	5	4	3	

XIV. Description of Hazardous Wastes

A. **EPA HAZARDOUS WASTE NUMBER** - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. **ESTIMATED ANNUAL QUANTITY** - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. **UNIT OF MEASURE** - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that processes that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item XIV-D(l).*
3. *Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).*

2. **PROCESS DESCRIPTION:** *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA HAZARD WASTE NO. (enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESS (1) PROCESS CODES (enter)									D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0				
X	2	D	0	0	2	400	P	T	0	3	D	8	0				
X	3	D	0	0	1	100	P	T	0	3	D	8	0				
X	4	D	0	0	2												Included With Above

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-OT

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
M S D 0 0 7 0 2 7 5 4 3	

XIV. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES (1) PROCESS CODES (enter)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	K001	SEE COMMENTS		D80	Former Surface
2					Impoundment closed
3					as landfill.
4	K001	SEE COMMENTS		D80	Boiler ash landfarm
5	U051				closed as landfill.
6					
7	F032	SEE COMMENTS		S03	Waste piles containing
8					soils excavated and placed
9					in pile prior to June 6,
10					1991. This is submitted
11					as a protective filing
12					and should not be construed
13					as an admission by Beazer or
14					KII that the material is
15					the listed hazardous waste
16					F032, or that it is being
17					managed in a manner that
18					would subject it to regulation
19					under RCRA.
20					
21	F032	500	T	S01 T04	Indust. Boiler Combustion
22	F034	500	T	S01 T04	" " "
23	U051	50	T	S01 T04	" " "
24	K001	10	T	S01 T04	" " "
25	K023	1000	T	S01 T04	" " "
26	K024	1000	T	S01 T04	" " "
27					
28					
29					
30					
31					
32					
33					

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
M S D 0 0 7 0 2 7 5 4 3	

XIV. Description of Hazardous Waste (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 6.

Line Number	Additional Process Codes (enter)

XV. Map

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

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

Owner/Operator #1 (KII)	Date Signed
[signature]	

Name and Official Title (type or print)
J. R. Batchelder, Vice President, Environmental and Technical

Operator #2 (Beazer)	Date Signed
RG Hamilton	4/1/92

Name and Official Title (type or print)
R. G. Hamilton, Vice President, Environmental

XIX. Comments

SEE ATTACHED COMMENTS.

Note: Mail completed form to the appropriate EPA Regional or State Office. (refer to instructions for more information)

EPA ID No. MSD 007 027 543

HAZARDOUS WASTE PERMIT
PART A APPLICATION
COMMENTS

As stated on page 2, block VIII, the facility owner is Koppers Industries, Inc. There are two operators at this facility, as explained below:

OPERATOR #1

KOPPERS INDUSTRIES, INC.
436 Seventh Avenue, K-1701
Pittsburgh, PA 15219
(412)227-2001

Status of Operator #1: P

Operator #1 (Koppers) is the operator of two hazardous waste units on the facility, the hazardous waste storage unit (S01) and an industrial boiler utilizing hazardous waste as fuel (T04). Koppers is the current owner and operator of the wood preserving business on this site.

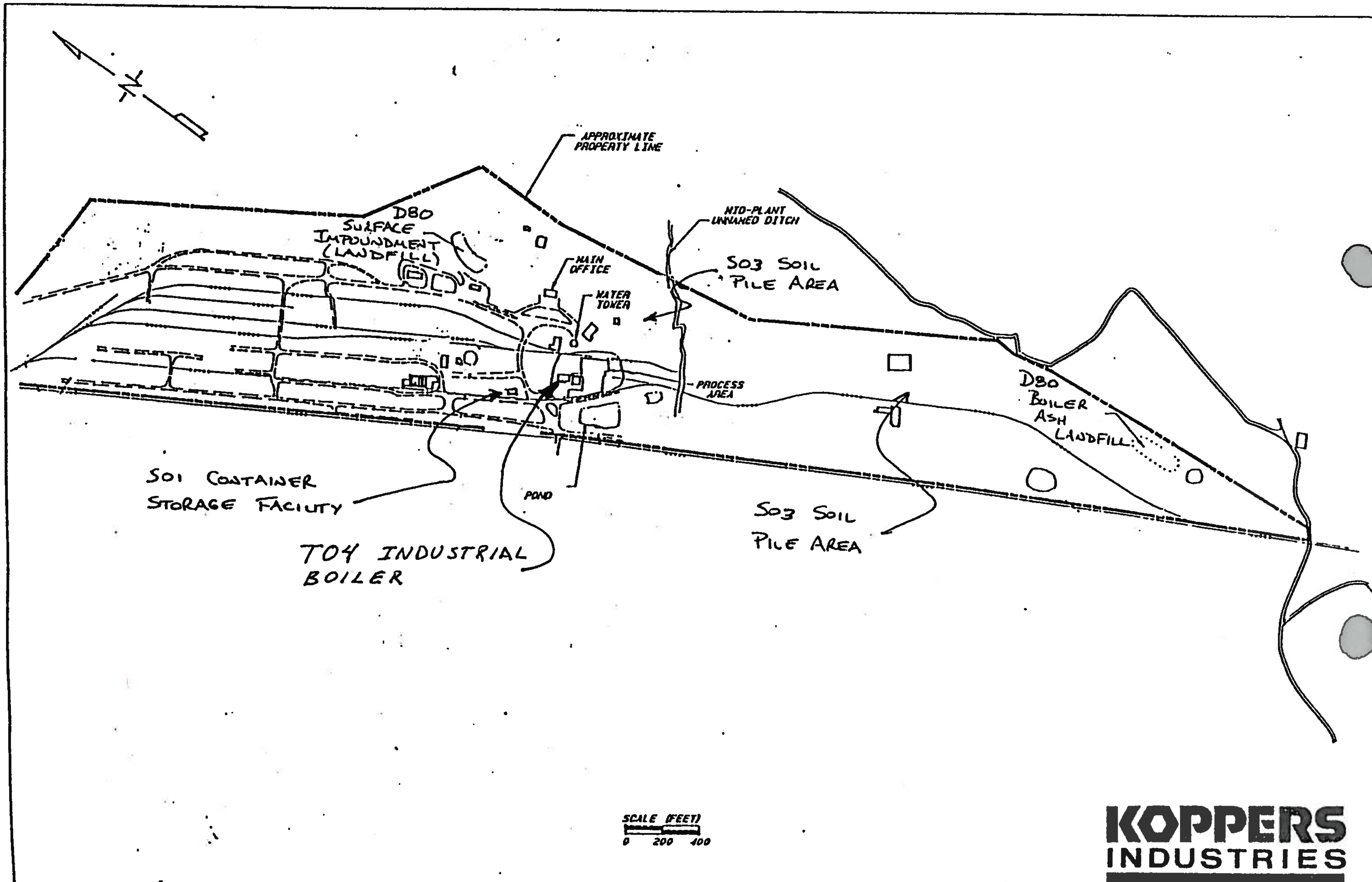
OPERATOR #2

BEAZER EAST, INC.
436 Seventh Avenue, K-1401
Pittsburgh, PA 15219
(412)227-2430

Status of Operator #2: P

Operator #2 (Beazer) is the operator of four inactive units on the facility, a former surface impoundment closed as a landfill (D80), a boiler ash landfarm closed as a landfill (D80), and two waste piles (S03) which contain soil resulting from on-site construction activity and which was placed in the piles prior to June 6, 1991.

Operator #2 is not involved in the operation of the container storage facility (S01) or the industrial boiler (T04) and, therefore, all obligations under the relevant statutes and regulations pertaining those units, including but not limited to any and all financial assurance requirements, are solely those of Operator #1.



APPROXIMATE PROPERTY LINE
D80 SURFACE IMPOUNDMENT (LANDFILL)
MAIN OFFICE
WATER TOWER
MID-PLANT UNNAMED DITCH
S03 SOIL PILE AREA
PROCESS AREA
D80 BOILER ASH LANDFILL
S01 CONTAINER STORAGE FACILITY
POND
T04 INDUSTRIAL BOILER
S03 SOIL PILE AREA
SCALE (FEET)
0 200 400
KOPPERS INDUSTRIES

Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219
Phone: 412-227-2500
Fax: 412-227-2950

Beazer

OCT 10 1990

October 9, 1990 *FEDERAL EXPRESS*

Ms. Gail Macalusa
Mississippi Dept. of Natural Resources
Bureau of Pollution Control
2380 Highway 80 West
Jackson, MS 39204

DIVISION OF SOLID WASTE
REVIEWED BY AM
DATE
COMMENTS Sent to EPA 10/22/90

Re: SWMU Closure Plan - Sprayfield
Koppers Industries, Inc.
Grenada, MS Facility

Dear Ms. Macalusa:

Enclosed please find two copies of the SWMU closure plan for the area formerly utilized as a sprayfield for the above-referenced facility. This SWMU closure plan is submitted as a follow-up to our letter to Mr. Steve Spengler dated November 3, 1989.

Please note that this SWMU closure plan is not dissimilar to a closure plan for a RCRA hazardous waste management unit. This plan, however, is in no way an admission that the sprayfield is a hazardous waste management unit and/or is subject to the RCRA hazardous waste mangement requirements.

Upon completion of this SWMU closure, we will monitor groundwater on a semi-annual basis (i.e. wells SF-1, SF-2, SF-3 and SF-4; see figure attached for well locations) for a period of one year for the following constituents:

- *Acid extractable phenolics*
- *Polynuclear aromatic hydrocarbons*

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219 USA

RECEIVED
JAN 14 1991

January 11, 1991

Ms. Gail Macalusa
Mississippi Department of Natural Resources
Bureau of Pollution Control
2380 Highway 80 West
Jackson, MS 39204

Re: SWMU Closure Plan - Sprayfield
Koppers Industries, Inc.
Grenada, MS Facility

Dear Ms. Macalusa:

This letter provides a schedule for initiation of the closure plan for the sprayfield at the above-referenced facility.

As indicated in the closure plan submitted to you on October 9, 1990, closure will be scheduled to coincide with the onset of the active vegetative growing season. These warmer weather conditions are needed to enhance natural biodegradation. Thus, closure activities will be initiated on April 1, 1991.

Please call me at 412/227-2185 if you have any questions or comments.

Sincerely,

Jane M Patarcity

Jane M. Patarcity
Program Manager-Environmental Services

/lpd

cc: J. Clayton - KII
J. Batchelder - KII
R. Haimann- D&M
B. Nolan
T. Hopper - MSDNR

Please note that this does not constitute RCRA Groundwater Monitoring. All analysis will be conducted under EPA approved methods.

Please call if you have any questions.

Sincerely,

Matthew C. Plautz

Matthew C. Plautz, P.E.
Program Manager-Environmental Services

/lpd

cc: B. Nolan
D. Kerschner
D. Calland - BCCZ
D. Bluedorn - BCCZ
J. Clayton - KII
J. Batchelder - KII

SOLID WASTE MANAGEMENT UNIT
CLOSURE PLAN
TREATED WASTEWATER SPRAYFIELD
KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
TIE PLANT, MISSISSIPPI

I. Koppers Industries, Inc. (Location) Plant Contact

J. D. Clayton
601/226-4584

Beazer East, Inc. (BEI) Contact

Matthew C. Plautz
412/227-2952

II. BACKGROUND INFORMATION CONCERNING THE SPRAYFIELD

The sprayfield covers an area of approximately 3 acres, and is vegetated with natural grasses. (See Attachment (1) for location). Historically, the sprayfield was used as a final treatment step for pretreated wastewater. The sprayfield was taken out of service during July 1988.

III. RATIONALE FOR CLOSURE OF THE SPRAYFIELD

The sprayfield was operated to biodegrade any remaining organic constituents in pretreated wastewater. Accordingly, the closure process will permanently take the sprayfield out of service and allow natural biodegradation to reduce any residual concentrations present in the sprayfield soils.

IV. METHOD OF CLOSURE

A. The spray heads and riser piping will be dismantled to facilitate access for the activity listed in Item B.

B. The field will be then plowed and disced to further promote biodegradation.

C. The sprayfield will be fertilized and seeded to promote vegetative growth and biodegradation of residual organic constituents.

D. After 180 days of operation under Item C above, soil samples will be collected from an interval of 0 to 1.5 feet in depth at four locations within the sprayfield. These samples will be analyzed for the following indicator parameters following EPA SW-846 or approved equal methods:

- o Pentachlorophenol
- o Phenol
- o Naphthalene
- o Fluoranthene

V. DECONTAMINATION AND SAFETY PROCEDURES

A. All workers shall observe the safety procedures for handling potentially hazardous substances. At a minimum, workers will wear coveralls, gloves and boots. Due to the method of closure, no activities requiring equipment decontamination will be conducted.

VI. DOCUMENTATION

BEI will submit a report of closure activities including analytical results within 60 days of receipt of validated analytical data.

VII. SCHEDULE AND REPORTING

BEI anticipates that field closure activities will take approximately 180 days from initiation and is dependant upon weather. Sampling will occur after the 180 day period and a closure report submitted approximately 60 days after receipt of analytical data.

A line item schedule is provided below:

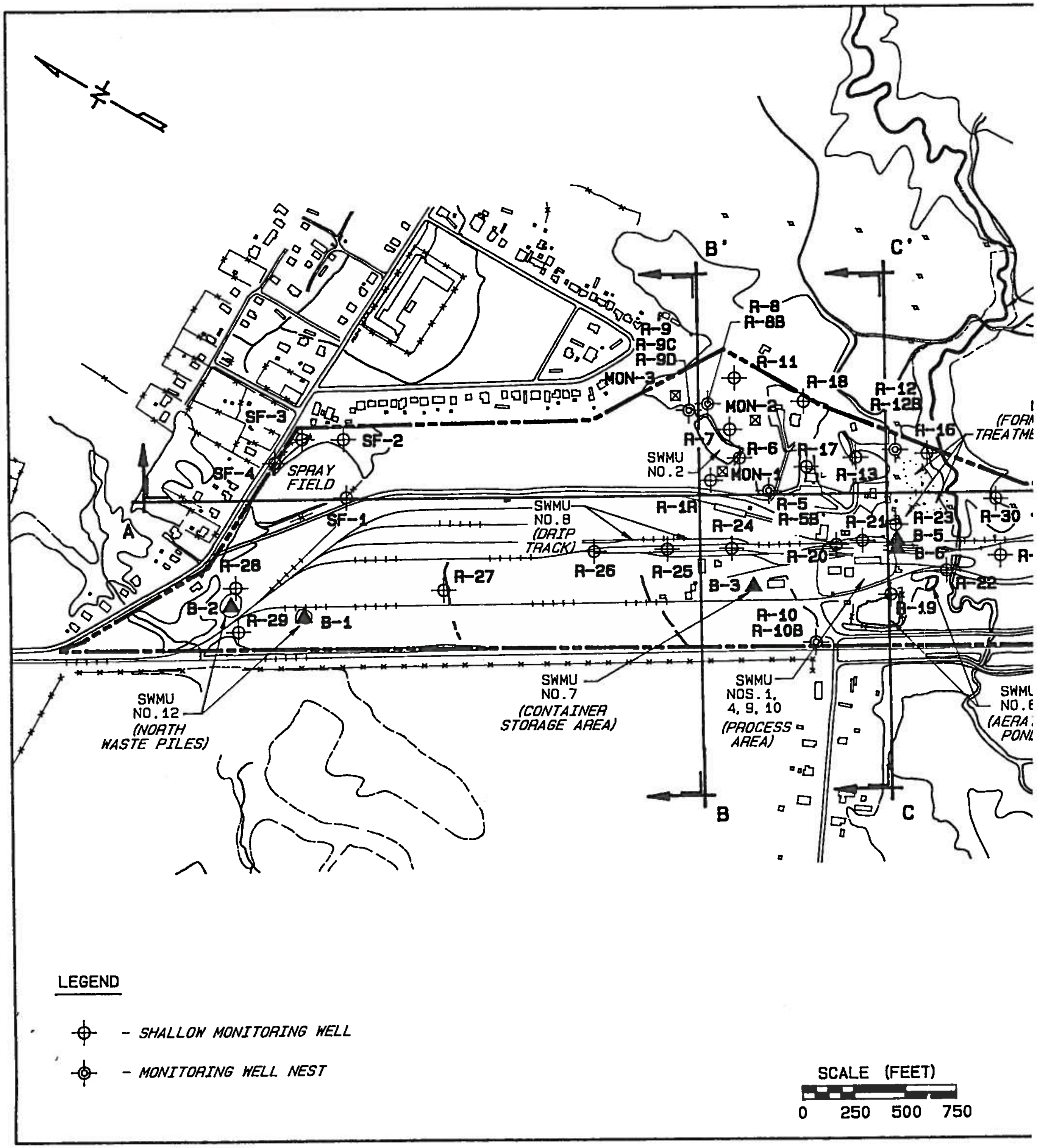
- o Agency Approval - Day 0 *
- o Mobilization - Day 30
- o Complete Closure Activities - Day 210
- o Submit Closure Report - Day 270 **

All activities may be dependent on suitable weather conditions.

* Will be scheduled to coincide with onset of the active vegetative growing season.

** Schedule is dependent on the prompt receipt of analytical data.

ATTACHMENT 1
SPRAYFIELD AND ASSOCIATED MONITORING WELL LOCATIONS
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI



N
A
B
B'
C
C'
SF-1
SF-2
SF-3
SF-4
SPRAY FIELD
R-1R
R-5
R-5B
R-6
R-7
R-8
R-8B
R-9
R-9C
R-9D
R-10
R-10B
R-11
R-12
R-12B
R-13
R-16
R-17
R-18
R-19
R-20
R-21
R-22
R-23
R-24
R-25
R-26
R-27
R-28
R-29
R-30
MON-1
MON-2
MON-3
B-1
B-2
B-3
B-5
B-6
SWMU NO. 2
SWMU NO. 8 (DRIP TRACK)
SWMU NO. 7 (CONTAINER STORAGE AREA)
SWMU NO. 12 (NORTH WASTE PILES)
SWMU NOS. 1, 4, 9, 10 (PROCESS AREA)
LEGEND
- SHALLOW MONITORING WELL
- MONITORING WELL NEST
SCALE (FEET)
0 250 500 750

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

Recd. 12-16-88
AAB

Phone: 412/733-9500 440 College Park Dr., Monroeville, PA 15146 Fax: 412/325-3103

December 15, 1988

Mr. Dave Bockleman
Hazardous Waste Branch
Mississippi Department of Natural Resources
Bureau of Pollution Control
2380 Highway 80 West
Jackson, MS 39204

Re: Unnamed Ditch Remediation Work Plan
Koppers Company, Inc.
Grenada, Mississippi
MSD007027543

Dear Mr. Bockleman:

Enclosed are two (2) copies of a document titled Work Plan for Remedial Measures - Unnamed Ditch - Koppers Company, Inc. - Grenada, Mississippi. This work plan was prepared for Koppers Company, Inc. in compliance with the requirement stated in Mississippi Department of Natural Resources Administration Order No. 1438-88.

If you have any questions regarding this submittal, do not hesitate to call me at 412/733-9490.

Very truly yours,

W. L. Ice

W. L. Ice

WLI:ss
Enclosures
cc: R. Anderson
J. Batchelder

DIVISION OF SOLID WASTE
REVIEWED BY ____
DATE ____
COMMENTS Sent to EPA
1-11-89

Beazer Materials and Services, Inc.
A Member of THE BEAZER GROUP
436 Seventh Avenue, Pittsburgh, PA 15219
Phone: 412-227-2500 Fax: 412-227-2042

Beazer

RECEIVED
JUN 29 1989
Dept. of Natural Resources
Bureau of Pollution Control

plan approved by [illegible] July 21, 1989

June 27, 1989

Mr. Kaleel Rahaim
Mississippi Department of Natural
Resources
Bureau of Pollution Control
Box 10385
Jackson, MS 39209

Re: Proposed Work Plan
GWQAP-Boiler Ash Disposal Area
Grenada, Mississippi
Beazer Materials and Services, Inc.
MSD007027543

Dear Mr. Rahaim:

Enclosed please find four copies of the revised GWQAP for the above referenced facility. The recommendations detailed in your correspondence dated May 30, 1989 have been incorporated.

Please let me know if you have any questions of comments.

Sincerely,

Matthew C. Plautz

Matthew C. Plautz, P.E.
Program Manager-Environmental Services

MCP/cr
Enclosures (4)

cc: R. Hamilton (w/o enclosure)
B. Nolan (w/o enclosure)
R. Anderson (w/o enclosure)
R. Clayton (w/o enclosure)
J. Batchelder (w/o enclosure)

DIVISION OF SOLID WASTE
REVIEWED BY KR
DATE 6/29/89
COMMENTS Copy sent to EPA 6/29/89

Writer's Direct Dial 227-2952

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

MEMORANDUM

TO: File

FROM: Jim Hardage JH

SUBJECT: EPA Groundwater Task Force Project for the Koppers Facility Located in Tie Plant (Grenada) Mississippi

DATE: May 7, 1986

On May 6, 1986, Gary Payne and I met with representatives of the EPA groundwater task force in Grenada, Mississippi regarding the above project. The purpose of the meeting was for general orientation and review of project objectives.

After the meeting, the group met with Koppers representatives at the Koppers plant (See attached list of task force and company representatives). The meeting included an overview of the project objectives and schedule, and a general discussion of the plant operations and facility layout.

After this meeting, all participants walked over the site to get a better idea of the facility layout, particularly the location of the waste management units and the monitoring wells.

The next phase of the project will consist of a field inspection the week of May 19-23, 1986, which will include a review of records and sampling of selected monitoring wells for extensive analyses.

JH:cm